Mexico Forest Protocol Quantification Tools User Manual

This User Manual provides guidance for using the quantification tools required for the Mexico Forest Protocol, including: CALCBOSK, i-Tree, GIS, the Carbon Monitoring Worksheet, and Sequential Sampling Worksheet.

CLIMATE ACTION RESERVE

Table of Contents

I. Overview

The Climate Action Reserve's Mexico Forest Protocol (MFP) uses several companion tools to facilitate the development and verification of a forest project. The Quantification Tools User Manual is designed to be used along with the Mexico Forest Protocol and Quantification Guidance to provide instructions for the use of the companion quantification tools. Furthermore, a project developer should reference the Project Developer Guide for further detail on all steps and requirements involved in developing a forest project under the MFP; this Quantification Tools User Manual focuses only on the use of the quantification tools.

The Quantification Tools User Manual provides instructions for using the following tools:

1. **CALCBOSK:** The Inventory Tool for Mexico Forest Projects, or CALCBOSK, has been developed as a companion database application to the Climate Action Reserve's Mexico Forest Protocol Quantification Guidance, which provides a detailed sampling methodology required for all projects submitted using the Reserve's Mexico Forest Protocol. CALCBOSK is designed to provide Forest Owners and Project Developers with the ability to manage forest carbon inventories. CALCBOSK enables users to calculate carbon inventories for reporting and includes features that enable users to update their inventories for growth, harvest, natural disturbances, and new or resampled inventory data. In addition, CALCBOSK is designed to facilitate the verification of forest carbon projects and their forest inventories.
2. **i-tree:** In coordination with CALCBOSK, Mexico forest projects will be required to use the United States Forest Service's -tree Canopy Tool in order to complete the risk threshold analysis for determining the project baseline.
3. **Carbon Monitoring Worksheet:** Mexico forest projects are required to use the Carbon Monitoring Worksheet (CMW) to facilitate the quantification of CRTs issued each reporting period. The CMW is used in conjunction with CALCBOSK.
4. **Sequential Sampling Workbook:** The Sequential Sampling Workbook is required for all site verifications to verify the carbon inventory of all sampled carbon pools within the Activity Area(s). The Sequential Sampling Workbooks must be used in combination with CALCBOSK.

The companion tools and Quantification Tools User Manual will undergo frequent revisions. Please confirm that you are using the most up to date version by emailing akessler@climateactionreserve.org

Since several of the quantification tools are used in combination, the Quantification Tools User Manual is primarily divided by project steps rather than tool with the exception of Section II. Introduction to CALCBOSK.

The Quantification Tools User Manual provides guidance on the following Forest Project steps:

Step:	Tools Required:
1. Establishing a new Forest Project or Activity Area	1. CALCBOSK
2. Developing the Forest Carbon Inventory	1. Arc-GIS Software 2. CALCBOSK 3. Field Inventory Form
3. Calculating the Forest Project Baseline	**1.** CALCBOSK

4. Calculating the Forest Project end-of-the Reporting Period Carbon Stocks	1. CALCBOSK
5. Completing the Risk Threshold Analysis	1. i-tree 2. CALCBOSK
6. Complying with the Native Species Requirements	**1.** CALCBOSK
7. Calculating the end-of-the Reporting Period CRTs	1. CALCBOSK 2. Carbon Monitoring Worksheet (CMW)
8. Completing an On-Site Verification (Sequential Sampling)	1. CALCBOSK 2. Diameter and Height Sequential Sampling Tool 3. CO2/Ha Sequential Sampling Tool
9. Completing the Verification of Project Data	1. CALCBOSK

II. Introduction to CALCBOSK

CALCBOSK automatically produces reports relevant to the reporting requirements of version 1.5 (and all subsequent versions) of the Climate Action Reserve's Mexico Forest Protocol (hereafter MFP). It facilitates compliance with annual monitoring requirements of the MFP. Calculations of CO_2-equivalent (CO_2e) stocks in CALCBOSK are based on the equations and standards approved by the Climate Action Reserve for use with the MFP. CALCBOSK also 'grows' trees forward in time to update an inventory.

Data inputs into CALCBOSK are typical forest inventory measurements, and includes species, tree diameter and height, as well as other data variables described in this document. CALCBOSK produces CO_2e reports for trees, plots, and for the Activity Area.

CALCBOSK is currently to be used per Activity Area; a project with multiple Activity Areas will require a separate CALCBOSK per Activity Area.

CALCBOSK manages plot data in order to calculate the Activity Area baseline and update the inventory for annual monitoring reports. The plot data encompasses the tree measurements associated with each plot. Each plot is additionally defined by the year the tree measurements with which it is associated represents. Tree measurements associated with each plot are based on those measurements that are included in the inventory methodology presented in the Quantification Guidance and that serve as the basis for CO_2e calculations. CALCBOSK contains error checks to minimize errors associated with data entry, data exceeding expected norms, and omissions.

CALCBOSK additionally generates reports to meet Environmental Safeguard monitoring requirements of the MFP, including for the composition and diversity of native species.

i. Installation Instructions

CALCBOSK runs in a Microsoft Access database. All plot data reside in Access, and a specific form has been developed to assist the user with entering and managing this data and running the calculations. To run the CALCBOSK application, it is recommended to install Microsoft Access 2007 (the version in which the .accdb file format was first introduced) or a newer version.

CALCBOSK is provided free of charge by request; please send email requests to: akessler@climateactionreserve.org.

It is important that the Project Developer works closely with the Reserve when using CALCBOSK. The Project Developer must not make changes to CALCBOSK, beyond those directed in this User Manual, without communicating with the Reserve. Changes to CALCBOSK beyond the normal user utilities may impact the ability to achieve a successful verification.

ii. CALCBOSK Use Overview

The flowchart below demonstrates the steps for project development specific to using CALCBOSK, starting with project inventory development (Figure 1) and project inventory updates (Figure 2). Steps in Orange are steps that the Project Developer must complete, and Blue are steps that the Reserve must complete. Further guidance for each step is provided below the figures. For further information on project development steps not related to CALCBOSK, see the MFP Guide for Project Developers.

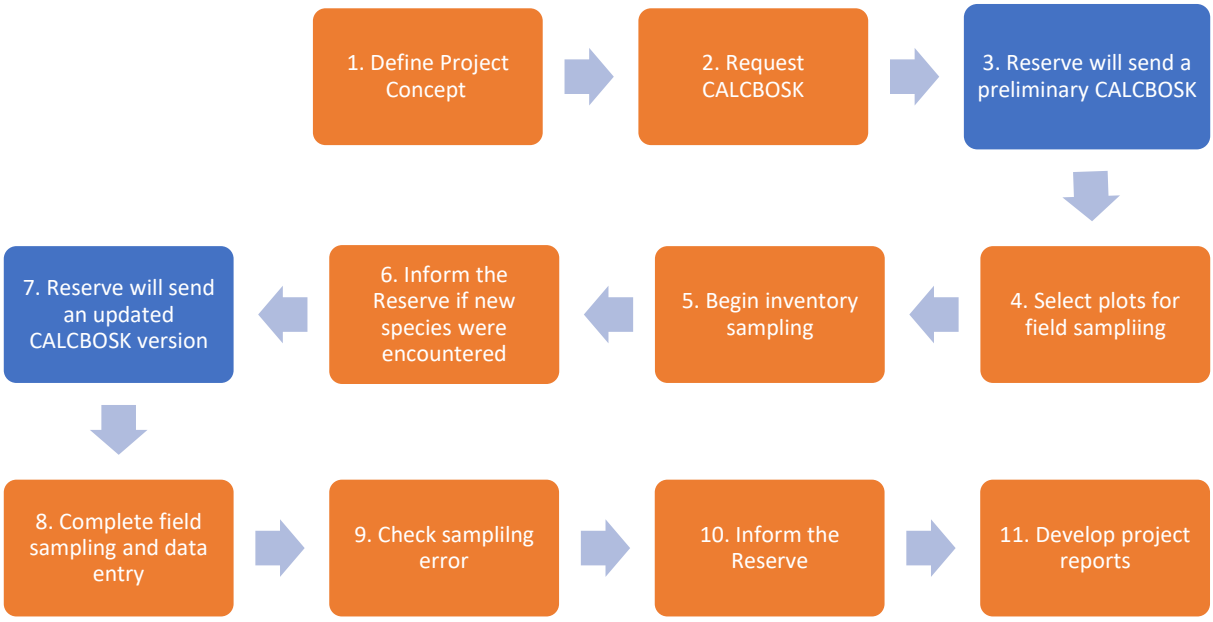


Figure 1. Phase 1: Developing Project Inventory

1. **Define Project Concept:** the Project Developer and Forest Owner (if different) should work to determine the Project Area and initial Activity Areas to be included in carbon enhancement activities, as well as conduct any necessary feasibility analysis to ensure project viability and approval by community members, as needed. Additional Activity Areas can be added later. A separate version of CALCBOSK must be used for each Activity Area.

2. **Request CALCBOSK:** once the project concept is defined and the Project Developer is ready to begin field inventory sampling to develop the project baseline, the Project Developer must contact the Reserve to request the latest version of CALCBOSK.

3. **Reserve will send a preliminary CALCBOSK:** the Reserve will send the latest version of CALCBOSK to allow projects to begin field sampling and enter inventory data.

4. **Select plots for field sampling:** the Project Developer should use the *select plots function* of CALCBOSK to list the potential plots throughout the Activity Areas in a random order for sampling (see section below on *Selecting Plots for Inventory Sampling* for further instructions).

5. **Begin inventory sampling:** the Project Developer can begin sampling plots and entering inventory data into CALCBOSK (see the MFP Quantification Guidance for the inventory methodology). If the Project Developer and forest technicians encounter new species not included in CALCBOSK during field sampling, they should enter the new species in the inventory form of CALCBOSK by a unique temporary letter A, B, C, D in place of the species code (<u>do not invent your own species codes</u>). The Project Developer must ensure that all inventory personnel are aware of the temporary designation to ensure consistency in the process. <u>The Reserve is in charge of creating all species codes</u>.

6. **Inform the Reserve if new species were encountered:** Should additional species be found while conducting the inventory effort that are not on the list, the Project Developer must provide a list of the temporary species' code designations as A, B, C, D etc., along with the common name, genus and species to the Reserve. Communication with the Reserve can occur once inventory personnel have completed approximately 70-80% of the anticipated plots needed for the inventory. The Reserve will work with the Project Developer to provide an updated CALCBOSK with species codes to replace the temporary designations and update the appropriate biomass equations as soon as possible for the new species.

7. **The Reserve will send an updated CALCBOSK version:** The Reserve will then program all new species into a new version of CALCBOSK and transfer over all inventory data from the previous version. The Reserve will then send the updated version to the Project Developer; the Project Developer should delete the old version to minimize confusion.

8. **Complete field sampling and data entry:** the Project Developer should sample an estimated number of plots sufficient to meet the statistical confidence requirements described in the MFP Quantification Guidance. After entering the data into the CALCBOSK inventory form (see section on *Developing an Inventory*), the Project Developer should use the Error Checks functions in CALCBOSK to identify potential data errors. All errors should be checked and revised at this time.

9. **Check sampling error:** after entering an estimated number of plots into CALCBOSK, the Project Developer should check the sampling error to determine whether additional plots are required or desired.

Project data will be accepted with sampling errors up to +/- 20% of the mean at the 90% confidence interval; however, deductions for uncertainty are applied for all sampling errors over +/- 5% of the mean at the 90% confidence interval (see Section 3.2 of the MFP Quantification Guidance for further information, including guidance related to project aggregation, which modifies the calculation for uncertainty deductions). Uncertainty deductions are determined by the sampling error of inventory data grown to the end of the Reporting Period. CALCBOSK 'grows' project data to the end of each Reporting Period through the [Crecer Parcelas] functionality and produces a report for each year. See Section *Confirming Compliance with Minimum Sampling Error* for further details.

If additional plots are required to meet the minimum sampling error and/or desired to reduce uncertainty deductions, repeat steps 8 and 9 until the sampling error meets the required/desired level.

10. **Develop Project Reports:** once the Project Developer is satisfied with the sampling error, the Project Developer may produce the necessary reports to submit to the Reserve as part of the Project Report and Annual Monitoring Report.

Following the initial inventory effort conducted for project submission, inventory management must continue to ensure the inventory estimates are current with each Reporting Period. The following process flow outlines the key steps involved in updating a project inventory.

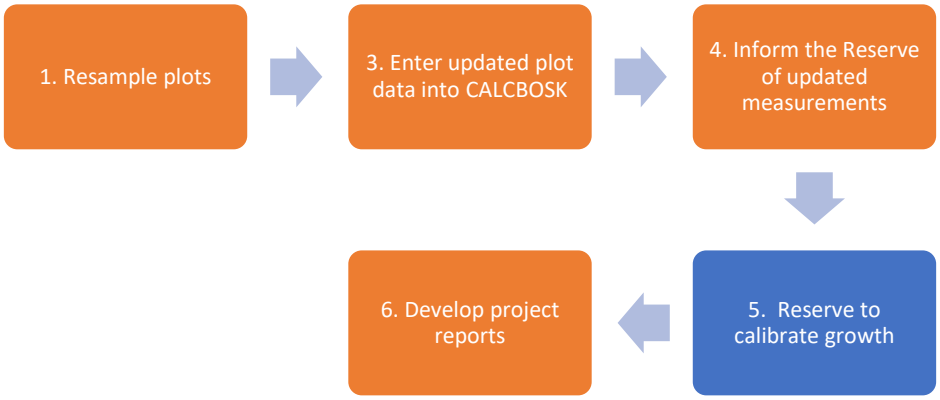


Figure 2. Phase Two: Updating Project Inventory

1. **Resample Plots:** In between plot remeasurements, inventory reports can be developed from 'grown' plot data. However, no plot data is valid for longer than a period of 12 years. It is recommended that Project Developers remeasure a percentage of all plots each year, rather than wait until the twelfth year to remeasure all plots. This approach has several benefits, which includes the maintenance of trained individuals to perform the inventory sampling and ensuring more accurate measurements which improve chances of successful field verification.

   In addition, each year the Project Developer should resample all plots that were impacted by harvest or by natural disturbance prior to conducting the inventory analysis at the end of the Reporting Period. The Project Developer has the option to omit 5% of

all impacted plots from the inventory analysis to allow for instances in which the Project Developer was not able to resample the plot prior to conducting inventory analysis for that Reporting Period; however, no plot may be excluded from the inventory analysis for more than one Reporting Period, meaning any previously omitted plot must be resampled in the following Reporting Period.

2. **Enter updated data into CALCBOSK:** each year the Project Developer must enter data from remeasured plots into CALCBOSK to include in the inventory analysis for the given Reporting Period. The Project Developer should always use the Error Checks functionality of CALCBOSK [Errores Potenciales con el Inventario] after entering new data to minimize the risk of data entry, data out of normal bounds, or data omission errors.

3. **Inform the Reserve of updated data:** after several years of remeasurements (at least 50 plots and 5 years of growth) have incurred, the Project Developer should again work closely with the Reserve to recalibrate growth estimates for the project species. The Project Developer should send the Reserve the updated version of CALCBOSK with all remeasured data entered.

4. **Reserve to calibrate growth:** the Reserve will then use the remeasured data to calibrate the growth. The Reserve will then send an updated version of CALCBOSK. The Project Developer should delete the older version to avoid confusion.

5. **Develop Project Reports:** once the Project Developer receives the updated version of CALCBOSK, the Project Developer may develop the updated carbon stocks report for the end of the Reporting Period (see Section IX. *Calculating CO_2 Stocks at the End of the Reporting Period)* as well as all other required reports from CALCBOSK for the current Reporting Period.

iii. CALCBOSK Dashboard

When CALCBOSK is opened, the main dashboard to the application is displayed (Figure 3). The dashboard frequently changes as improvements are made to the application. The dashboard addresses the main topical areas:

1. [Inicio] – Enter the Activity Area name, area, and start date to be initialized.
2. [Manejo de Parcelas] – Select random plots for sampling and enter plot data.
3. [Reportes] – Creates reports needed for annual monitoring reports, environmental safeguards reports, and other information from sampling data.
4. [Errores Potenciales con el Inventario] – queries that identify possible errant or omitted data.
5. [Para Verificadores]– tools used by verifiers.

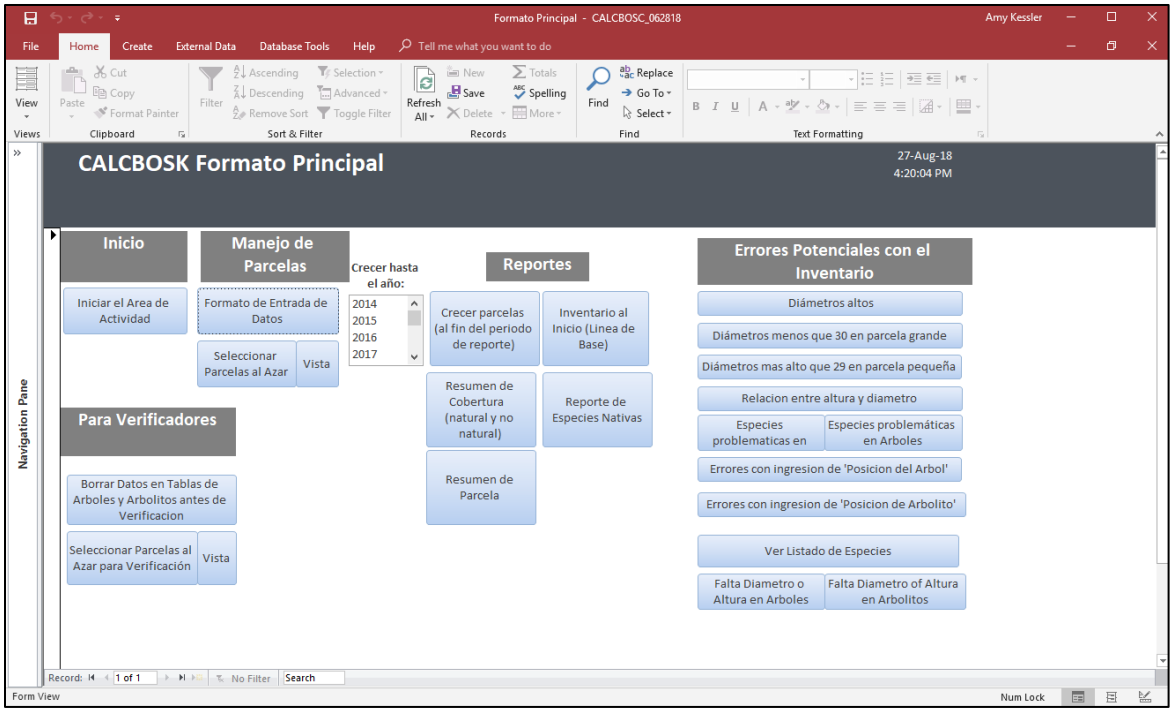


Figure 3. CALCBOSK Dashboard

iv. Major Functions

Start:

[Iniciar el Area de Actividad] The button enables Project Developers to input an identifier (name) and area for the Activity Area for which the database will be used.

Manage Plot Data:

[Formato de Entrada de Datos] displays a form to input plot data; the form resembles that of the field inventory form (*Formato del Inventario*).

[Seleccionar Parcelas al Azar] lists all plots on the Project Area grid in a random order to facilitate inventory sampling. Project developers must perform their field sampling based on the randomized plot organization.

[Vista] allows the Project Developer to see the list of plots selected randomly without re-running the command (so that the Project Developer can revisit the list of plots in the same random order).

Reports:

[Crecer Parcelas] reports the estimation for CO_2e for the Activity Area with plot data grown to the selected year, the average CO_2e per hectare, the confidence error at 90% Confidence Interval, and the confidence error as a percentage of the average.

[Inventario al Inicio (Línea de Base)] reports the estimation for CO_2e for the Activity Area at the date the inventory was sampled, the average CO_2e per hectare, the confidence error at 90% Confidence Interval, and the confidence error as a percentage of the average. If the inventory was completed before/after the Activity Area Start Date, the value reported as the initial inventory (total tCO_2e) needs to be grown/degrown in the CMW to calculate the carbon stocks at the start date for the Activity Area baseline.

[Resumen de Cubertura] reports the percentage of the Project Area (or assessment area) by landcover classification, and the percentage of the Project Area (or assessment area) that is defined as natural and non-natural in order to support compliance with the risk threshold for additionality.

[Reporte de Especies Nativas] reports the species composition as measured by average trees per hectare for the Activity Area.

[Resumen por Parcela] reports the CO_2e tonnes per hectare calculated by the selected plot, the CO_2e tonnes per plot, the number of trees per hectare calculated by the plot, the volume of trees (M^3) calculated by the plot, and the volume of trees per plot (M^3), in addition to listing the individual tree information for each plot.

For Verifiers:

[Borrar Datos en Tablas de Arboles y Arbolitos antes de la Verificacion] deletes the Project Developer tree data from the inventory data tables so that verifiers can input the verifier data for the plots selected for sequential sampling for onsite verifications.

[Seleccionar Parcelas al Azar para Verificación] lists all sampled plots in a random order to facilitate sequential sampling for onsite verifications.

v. Common Operations

The following sections present a variety of common operations that users will undertake while using CALCBOSK including:

- Adding an Activity Area
- selecting plots for inventory sampling
- developing and updating an inventory
- confirming compliance with minimum sampling error
- calculating CO_2e stocks for project baseline
- calculating CO_2e stocks for Reporting Periods
- confirming compliance with the risk threshold
- confirming compliance with the native species requirements
- for verifiers- selecting plots for verification sequential sampling
- for verifiers- checking plot data for verification sequential sampling
- for verifiers- important Project Data for verification
- printing and exporting reports.

When finished reviewing or editing any of the CALCBOSK forms discussed below, click on the [X] button in the upper right corner to exit the form. Unless otherwise indicated on a given form, this button must be used to close the form and will automatically save the updates within CALCBOSK.

III. Establishing a New Forest Project and/or Activity Area

When a project developer begins working on a new Forest Project or Activity Area, one of the first steps is to inform the Reserve and request a copy of CALCBOSK to begin inputting Activity Area data from field sampling. A different CALCBOSK must be used for each Activity Area.

Once the project developer has an up-to-date version of CALCBOSK, the project developer must initialize an Activity Area by clicking the [Iniciar el Area de Actividad] button on the CALCBOSK main dashboard (Figure 4).

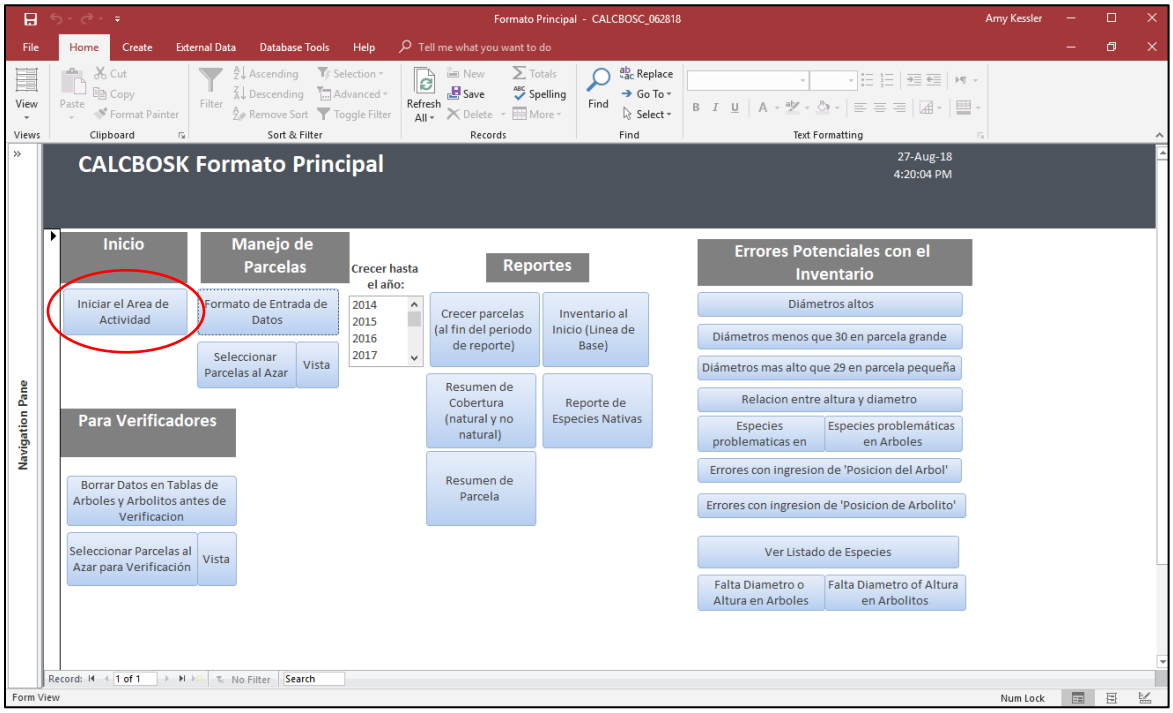


Figure 4. Add Project and Activity Areas

In the following form (Figure 5), the project developer should enter the information for the Forest Project name, the Activity Area name, and the hectares and Start Date for the Activity Area.

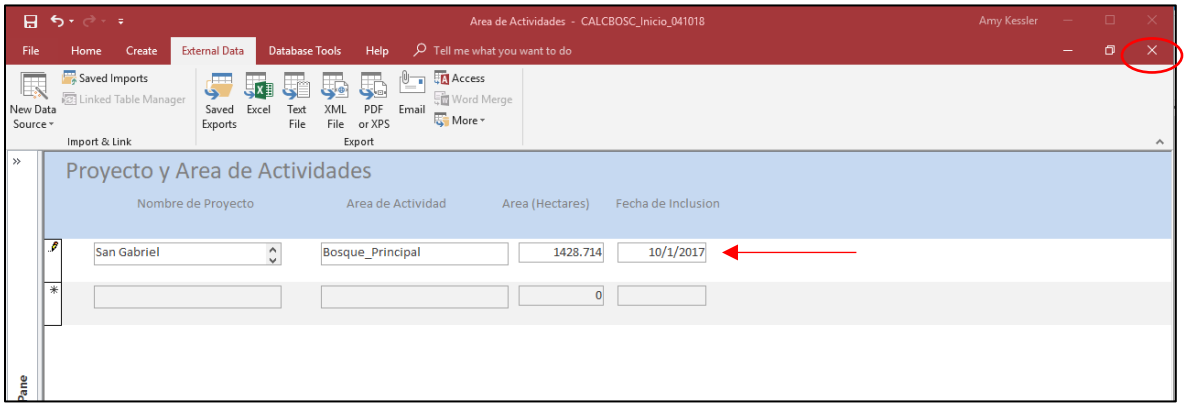


Figure 5. Add Project and Activity Area Information

Then close the form by selecting the [X] in the upper right corner (the bottom "X", not the top "X").

IV. Selecting Native Species for the Activity Area

When a project developer begins working on a new Activity Area, the project developer must select the tree species native to the area.

To access the form to confirm the native species, the project developer will need to click the [Seleccionar Especies Nativas del Proyecto] button on the CALCBOSK main dashboard.

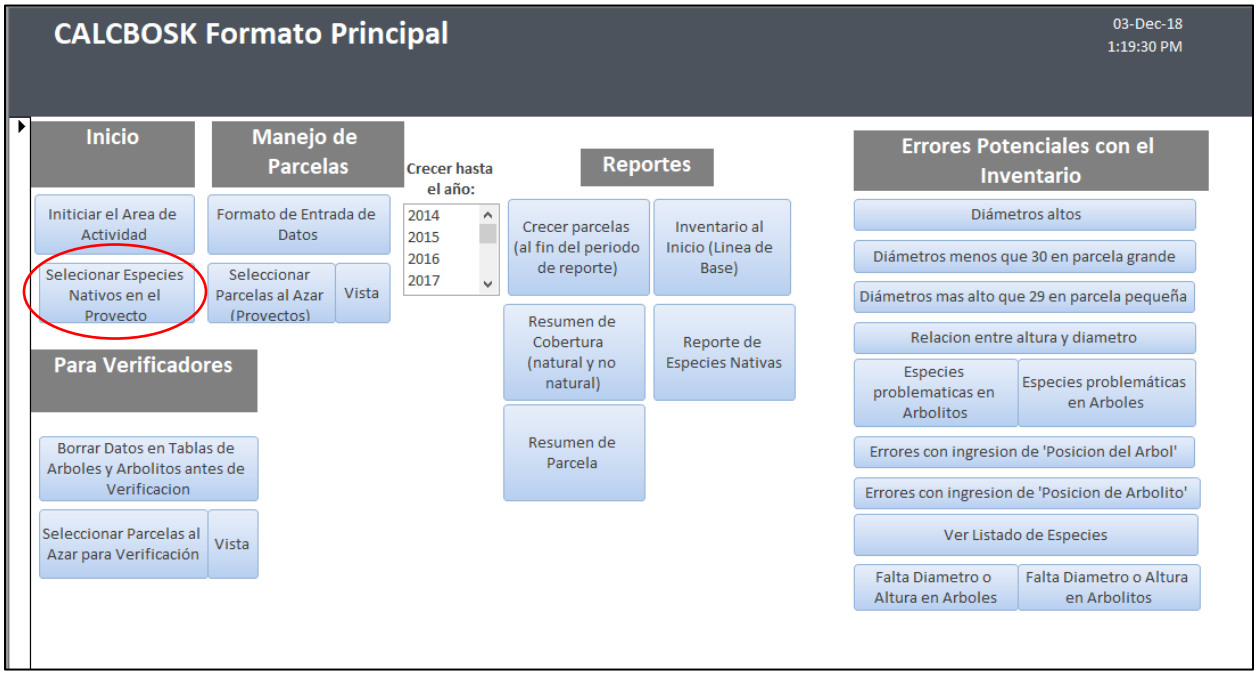


Figure 6. Select Native Species Form

The following form (Figure 7) will appear in which the project developer will need to mark all species native to the Activity Area.

Especie_simb	Nombre_Com	Genero	Especie	Nativo_al_Proyecto
ABRE	Oyamel	Abies	religiosa	☐
ACDO	Yaax ché	Acacia	dolichostachya	☐
AGUC	Aguacatillo	Cinnamomum	cinnamomifolium	☐
AILE	Aile o Palo aguila	Alnus	acuminata	☐
ALAR	Alnus	arguta	Ailite	☐
ALFI	Aile	Alnus	firmifolia	☐
ALJO	Aile	Alnus	jorullensis	☐
AMDE	Tlaxistle	Amelanchier	denticulata	☐
ANGL	Corcho	Annona	glabra	☐
APPA	Chuulul	Apoplanesia	paniculata	☐
ARSI	Arnica silvestre	Arnica	montana	☐
AVBI	Mangle salado	Avicennia	bicolor	☐
AVGE	Mangle negro o p	Avicennia	germinans	☐
BUBU	Wiwilisca	Wiwilisca		☐
BUSI	Chaká	Bursera	simaruba	☐
CAVE	Caesalpinia	vesicaria	Toxob	☐
CAVI	Chakte	Caesalpinia	violacea	☐
CAYU	Pelonché	Caesalpinia	yucatanensis	☐
CHAM	Chamizo	Atriplex	canescens	☐
CHOC	Chocolatillo	Acacia	Polyphylla	☐
CINE	Cinco negritos	Lantana	Sp	☐
CLSP	Marangola	Clethra	sp	☐
COCO	Bojon	Cordia	collococa	☐
COER	Mangle botoncill	Conocarpus	erectus	☐
CONU	Cocos	Cocos	nucifera	☐
CPUL	Toxok	Caesalpinia	pulcherrima	☐
CUAC	Cuachepil	Myrospermum	frutescens	☐
CUIL	Cuil	Inga	spuria	☐
CULU	Cedro blanco	Cupressus	lusitanica	☐
ELAR	Helecho arboreo	cyathea	alsophila	☐
ENCI	Encino	Quercus		☐
ESCO	Escobilla			☐
FIMA	Ficus	Ficus	maxima	☐
FIYU	Alamo	Ficus	yucatanensis	☐
FRAM	Fresno	Fraxinus	americana	☐
HAAL	Chukum	Havardia	albicans	☐
HIGO	Higo	Ficus		☐
JAGA	Pomulché	Jatropha	gaumeri	☐
JARI	Jarilla	Baccharis	conferta	☐
JUFL	Juniperus	flaccida	Tlaxcal	☐
JUSP	Enebro	Juniperus	sp	☐
LARA	Mangle blanco	Laguncularia	racemosa	☐
LASI	Chuuj	Lagenaria	sicerana	☐

Figure 7. Select Native Species

If species included in the Activity Area are not included in the list of species, please advise the Reserve as described in Section II.ii. The project develop should ensure that all species are correctly marked prior to the initial verification. The native species list will be verified as part of the initial verification.

V. Selecting Plots to Develop Carbon Inventory

Prior to conducting the inventory sampling, each project must define the Project Area and Activity Area(s). Per the methodology described in the Quantification Guidance, the project must define a 25 by 25 meter grid of plot locations within a GIS randomly placed on the Project Area; plots will then be associated with both Activity Areas and Non-Activity Areas. Only plots within Activity Areas are subject to being selected randomly for field sampling.

For Forest Projects with multiple Activity Areas, and hence multiple CALCBOSKs, the Project Developer only needs to conduct the following steps once for the entire Forest Project and may select any of the Activity Area CALCBOSKs to complete the steps for selecting the carbon inventory plots.

1. Defining grid for plot selection

1.1 In order to define a grid, it is first necessary to have a polygon of the Project Area, preferably with UTM projection.

1.2 The grid must be defined using ArcMap or another GIS software[1].

1.2.1 Using a GIS software, select [Create Fishnet] under the toolbox.

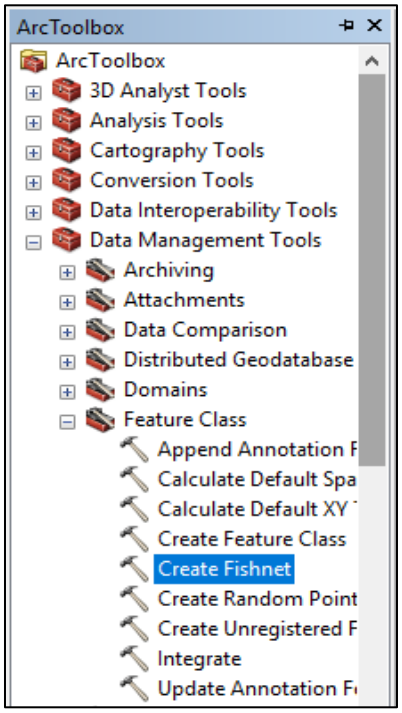


Figure 8. Creating a Grid of Plot Locations

1.2.2 After selecting [Create Fishnet], the following box will appear (Figure 9).

[1] The following steps are outlined using ArcMap, however, other GIS software can be used, as long as a similar excel table can be developed to import into CALCBOSK.

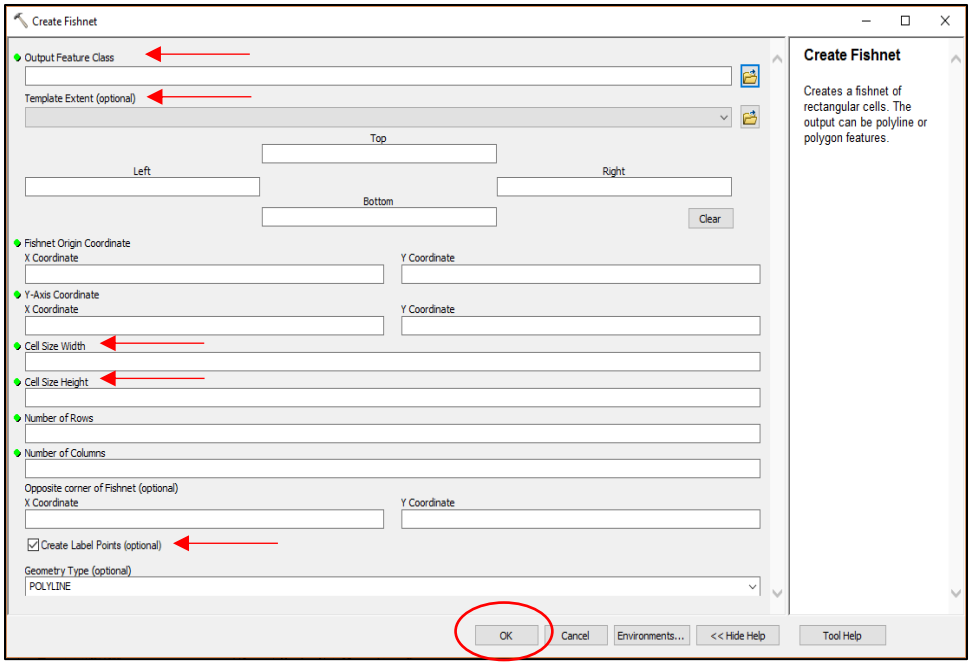


Figure 9. Configuring Grid of Plot Locations

1.2.2.1 Configure the [Output Feature Class] to select where to guard the shape file.

1.2.2.2 Under [Template Extent], select the shape file corresponding to the Project Area.

1.2.2.3 Configure the [Cell Size Width] and [Cell Size Height] to be 25 meters.

1.2.2.4 Make sure that the box [Create Label Points] is selected.

1.2.2.5 Click [Ok].

1.2.2.6 An example of the resulting grid of plots is presented below (Figure 10).

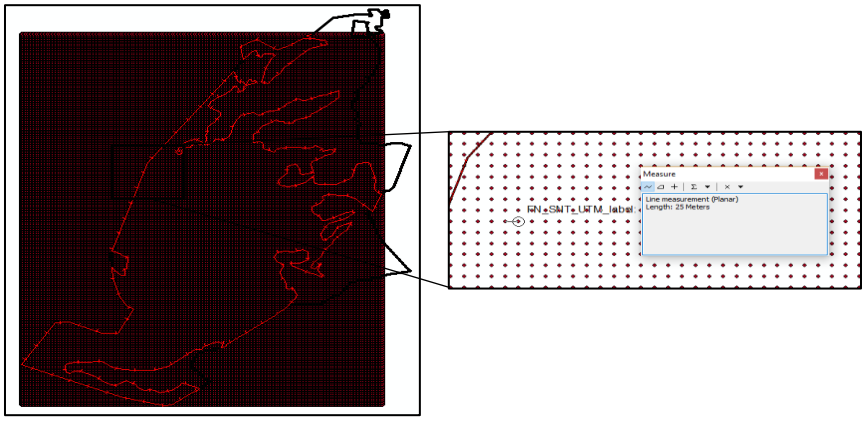


Figure 10. Example of Grid of Plots

1.3 Adjust the grid for the Activity Area(s) (Figure 11).

1.3.1 Use the [Clip] tool, located under [Extract] within the [Analysis Tools].

1.3.2 Under [Input Features], select the data layer that corresponds to the plot grid generated previously.

1.3.3 Under [Clip Feature], select the data layer that corresponds to the Activity Area.

1.3.4 Under [Output Feature Class], select the place to save the new file.

1.3.5 Select [Ok].

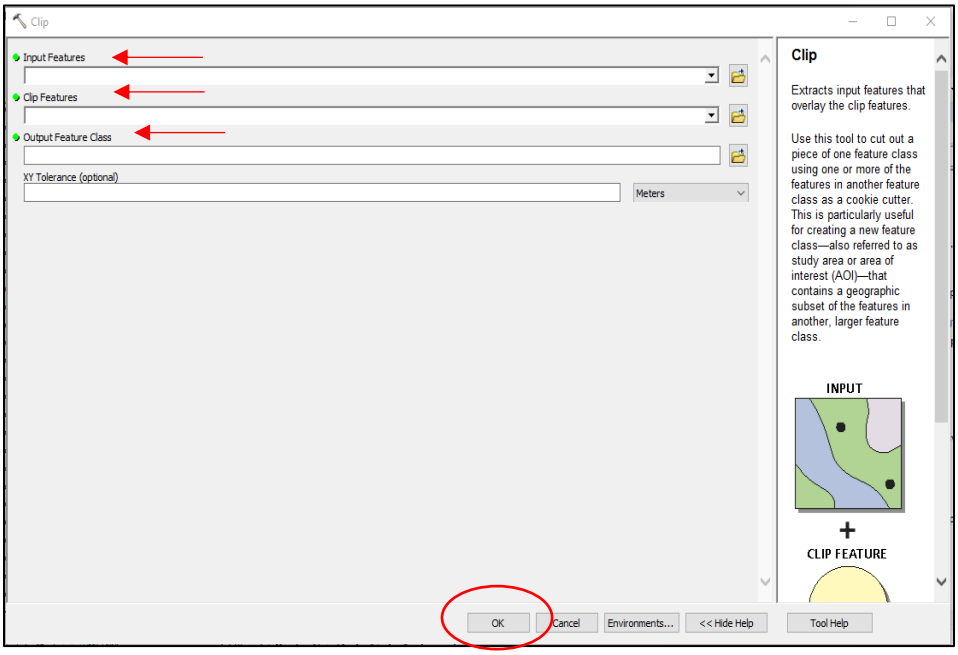


Figure 11. Clipping Grid of Plots

1.3.6 A shape file similar to the below should be generated (Figure 12).

Figure 12. Example of Plot Grid Adjusted for Activity Area

2. Create Table of Attributes

2.1 Right click on the shape file and click [Open Attribute Table].

2.2 By default, the only columns included in the table of attributes are “FID”, “Shape”, and “ID”. Select [Add Field] from the [Table Options] and add the following columns:

Field Name	Type	Precision	Scale	Description
PLOT	Short Integer	10		Número del Punto (Generado por el SIG)
LATITUDE	Double	13	6	Latitud del punto en Grados
LONGITUDE	Double	13	6	Longitud del punto en Grados
X_COORD	Double	13	3	Coordenada X del punto en metros.
Y_COORD	Double	13	3	Coordenada Y del punto en metros

Table 1. List of Fields to add to the Table of Attributes

2.3 Calculate the values for each column.

2.3.1 For the column [PLOT], use the [Field Calculator].

2.3.1.1 Right click on the on the column to select the [Field Calculator]

2.3.1.2 Write the formula: “[FID] + 1” as shown in the image below (Figure 13).

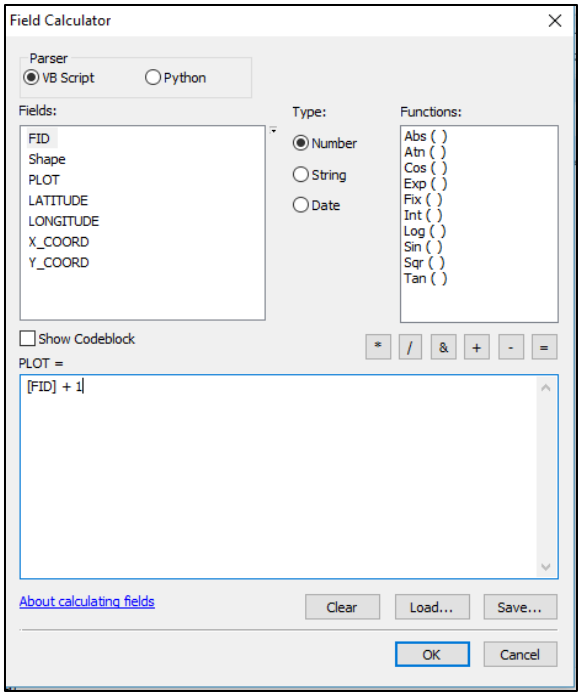


Figure 13. Field Calculator Formula

2.3.2 For the columns [LATITUDE], [LONGITUDE], [X_COORD], and [Y_Coord], use the [Calculate Geometry].

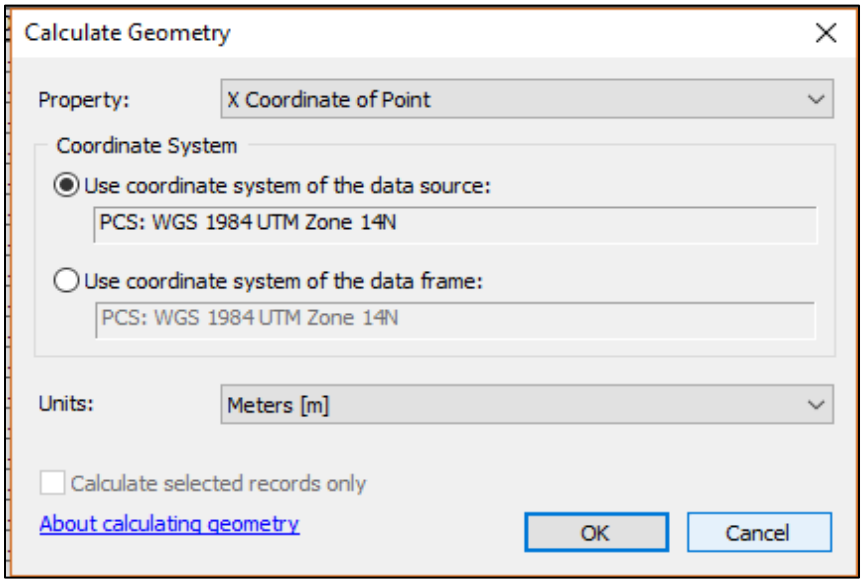


Figure 14. Calculate Geometry Tool Example 1

2.3.3 For the columns [X_COORD] and [Y_COORD] select the first [Use coordinate system of the data source] (Figure 14).

2.3.3.1 Select [Meters [m]] for the [Units]

2.3.3.2 Select [Ok]

2.3.4 For the columns [LATITUDE] and [LONGITUDE] select the second [Use coordinate system of the data source] (Figure 15).

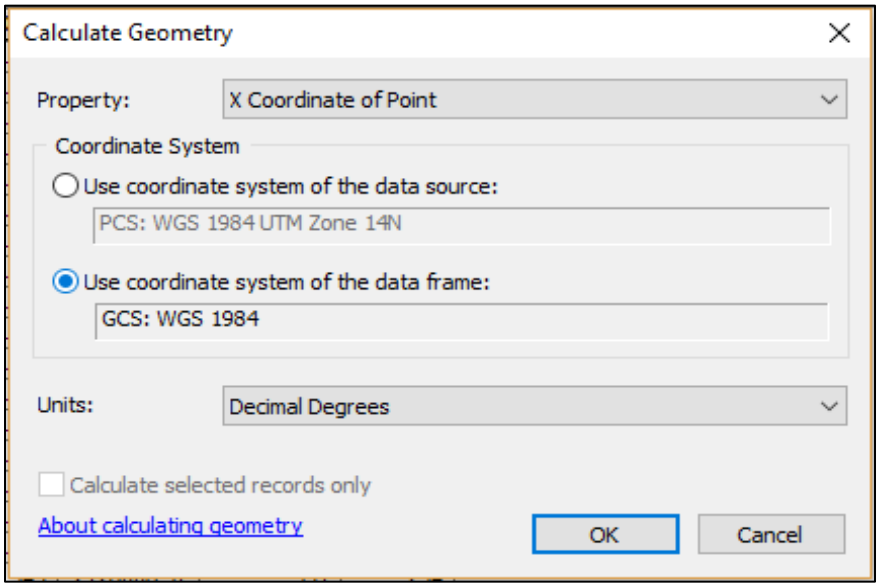
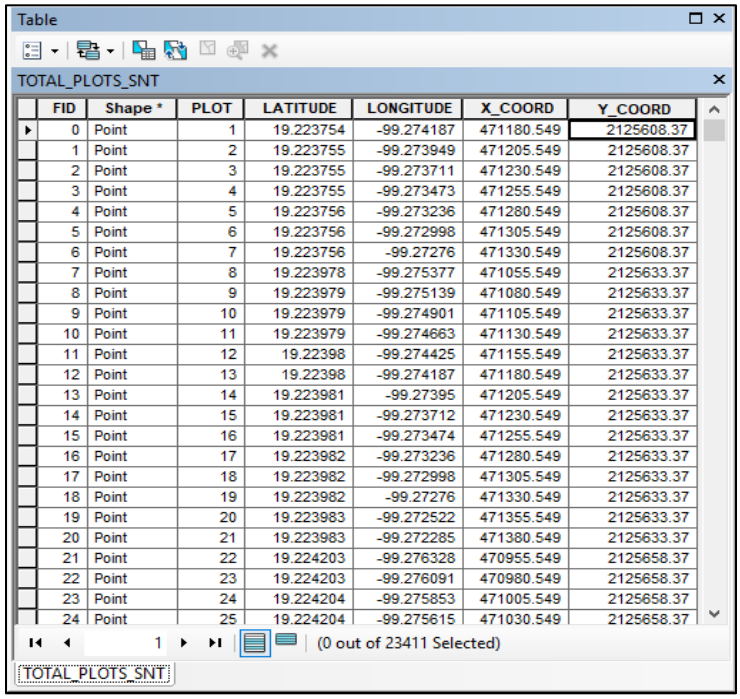


Figure 15. Calculate Geometry Tool Example 2

2.3.4.1 Select [Decimal Degrees] for the [Units]

2.3.4.2 Select [Ok]

2.4 Export the Table of Attributes to an Excel File.



Table

TOTAL_PLOTS_SNT

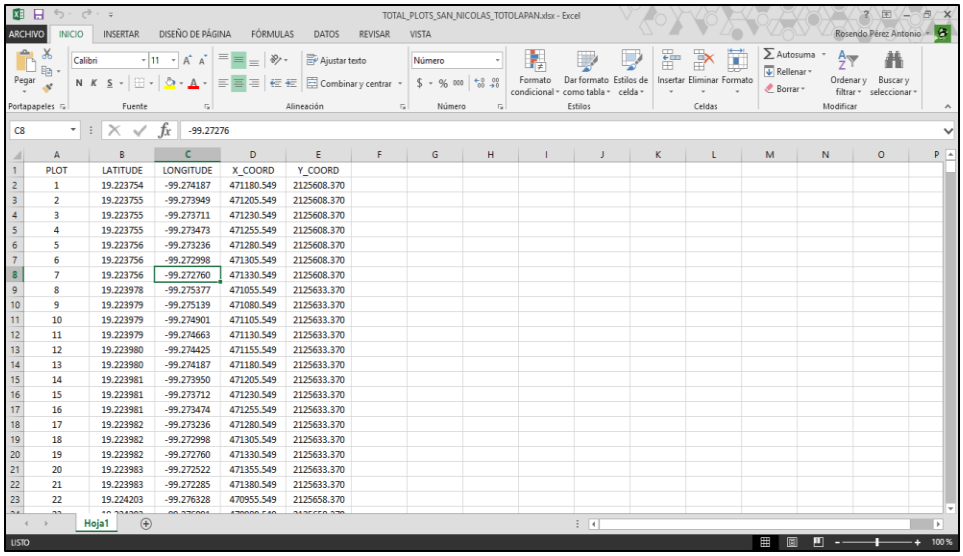
FID	Shape *	PLOT	LATITUDE	LONGITUDE	X_COORD	Y_COORD
0	Point	1	19.223754	-99.274187	471180.549	2125608.37
1	Point	2	19.223755	-99.273949	471205.549	2125608.37
2	Point	3	19.223755	-99.273711	471230.549	2125608.37
3	Point	4	19.223755	-99.273473	471255.549	2125608.37
4	Point	5	19.223756	-99.273236	471280.549	2125608.37
5	Point	6	19.223756	-99.272998	471305.549	2125608.37
6	Point	7	19.223756	-99.27276	471330.549	2125608.37
7	Point	8	19.223978	-99.275377	471055.549	2125633.37
8	Point	9	19.223979	-99.275139	471080.549	2125633.37
9	Point	10	19.223979	-99.274901	471105.549	2125633.37
10	Point	11	19.223979	-99.274663	471130.549	2125633.37
11	Point	12	19.22398	-99.274425	471155.549	2125633.37
12	Point	13	19.22398	-99.274187	471180.549	2125633.37
13	Point	14	19.223981	-99.27395	471205.549	2125633.37
14	Point	15	19.223981	-99.273712	471230.549	2125633.37
15	Point	16	19.223981	-99.273474	471255.549	2125633.37
16	Point	17	19.223982	-99.273236	471280.549	2125633.37
17	Point	18	19.223982	-99.272998	471305.549	2125633.37
18	Point	19	19.223982	-99.27276	471330.549	2125633.37
19	Point	20	19.223983	-99.272522	471355.549	2125633.37
20	Point	21	19.223983	-99.272285	471380.549	2125633.37
21	Point	22	19.224203	-99.276328	470955.549	2125658.37
22	Point	23	19.224203	-99.276091	470980.549	2125658.37
23	Point	24	19.224204	-99.275853	471005.549	2125658.37
24	Point	25	19.224204	-99.275615	471030.549	2125658.37

1 (0 out of 23411 Selected)

TOTAL_PLOTS_SNT

Figure 16. Table of Attributes to Export

2.4.1 Erase the columns “FID” and “Shape” from the excel.



PLOT	LATITUDE	LONGITUDE	X_COORD	Y_COORD
1	19.223754	-99.274187	471180.549	2125608.370
2	19.223755	-99.273949	471205.549	2125608.370
3	19.223755	-99.273711	471230.549	2125608.370
4	19.223755	-99.273473	471255.549	2125608.370
5	19.223756	-99.273236	471280.549	2125608.370
6	19.223756	-99.272998	471305.549	2125608.370
7	19.223756	-99.272760	471330.549	2125608.370
8	19.223978	-99.275377	471055.549	2125633.370
9	19.223979	-99.275139	471080.549	2125633.370
10	19.223979	-99.274901	471105.549	2125633.370
11	19.223979	-99.274663	471130.549	2125633.370
12	19.223980	-99.274425	471155.549	2125633.370
13	19.223980	-99.274187	471180.549	2125633.370
14	19.223981	-99.273950	471205.549	2125633.370
15	19.223981	-99.273712	471230.549	2125633.370
16	19.223981	-99.273474	471255.549	2125633.370
17	19.223982	-99.273236	471280.549	2125633.370
18	19.223982	-99.272998	471305.549	2125633.370
19	19.223982	-99.272760	471330.549	2125633.370
20	19.223983	-99.272522	471355.549	2125633.370
21	19.223983	-99.272285	471380.549	2125633.370
22	19.224203	-99.276328	470955.549	2125658.370

Figure 17. Table of Attributes Exported to Excel

3. Import the Table of Attributes for Plot Locations to CALCBOSK

3.1 Open the CALCBOSK version for the Activity Area or in the case of multiple Activity Areas, select one of on the Activity Area CALCBOSKs to complete the following steps for the Forest Project (this only needs to be completed once per Forest Project).

3.2 From the Main screen, under the tab [External Data], click on [New Data Source] → [From File] → [Excel] in order to import a spreadsheet.

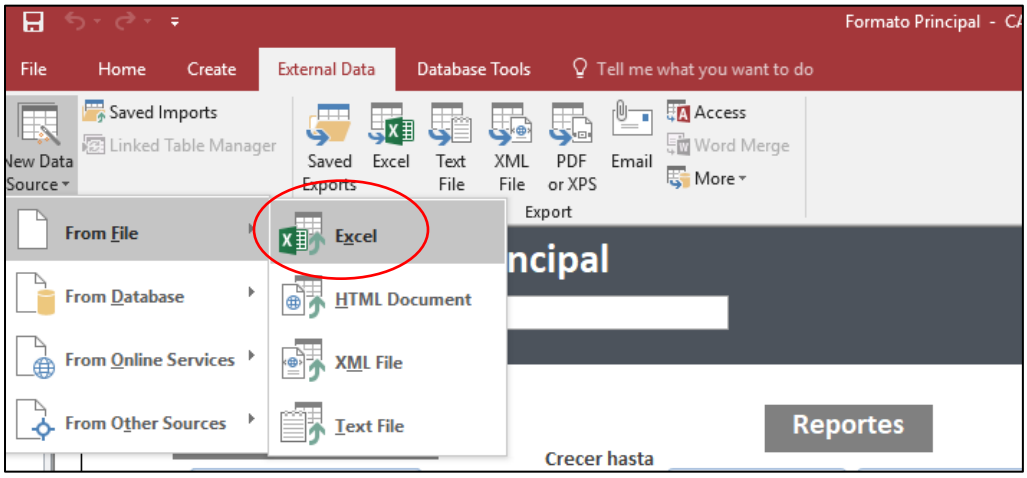


Figure 18. Importing Excel Spreadsheet

3.3 In the popup window, select where the Excel spreadsheet that was generated from the Table of Attributes is saved in the section [File Name] and click [Ok].

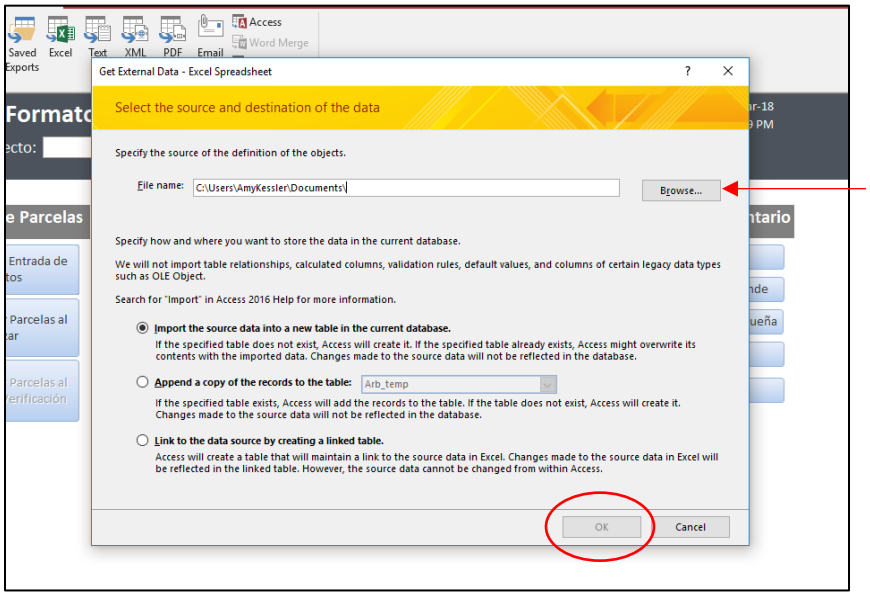
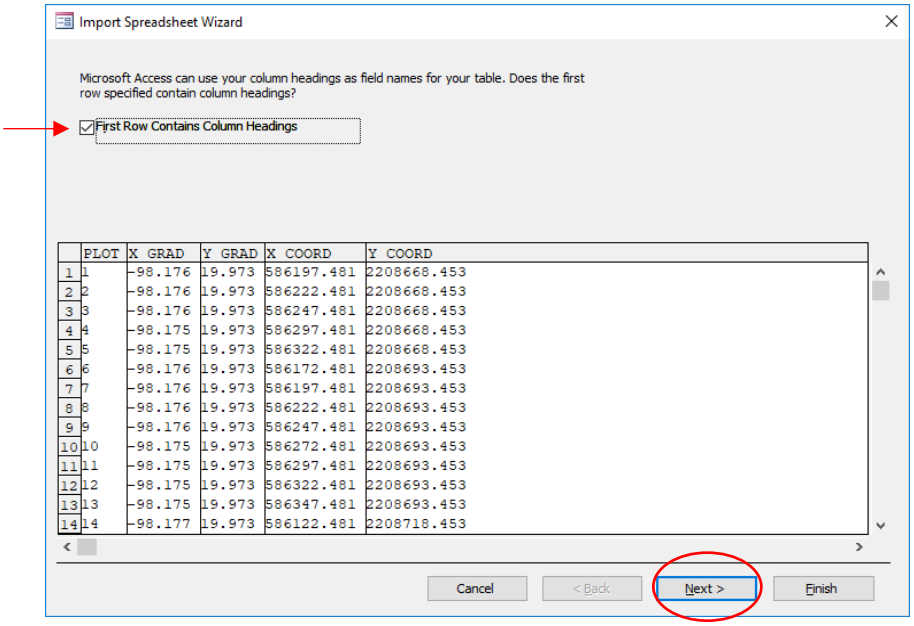


Figure 19. Selecting the Table of Attributes to Import

3.4 An image of the table to be imported will appear; make sure that the option [First Row Contains Column Headings] Is selected. Click [Next].



	PLOT	X GRAD	Y GRAD	X COORD	Y COORD
1	1	-98.176	19.973	586197.481	2208668.453
2	2	-98.176	19.973	586222.481	2208668.453
3	3	-98.176	19.973	586247.481	2208668.453
4	4	-98.175	19.973	586297.481	2208668.453
5	5	-98.175	19.973	586322.481	2208668.453
6	6	-98.176	19.973	586172.481	2208693.453
7	7	-98.176	19.973	586197.481	2208693.453
8	8	-98.176	19.973	586222.481	2208693.453
9	9	-98.176	19.973	586247.481	2208693.453
10	10	-98.175	19.973	586272.481	2208693.453
11	11	-98.175	19.973	586297.481	2208693.453
12	12	-98.175	19.973	586322.481	2208693.453
13	13	-98.175	19.973	586347.481	2208693.453
14	14	-98.177	19.973	586122.481	2208718.453

Figure 20. Import Spreadsheet

3.5 In the next window, specify the type of data, maintain the default as [Double]. Click [Next].

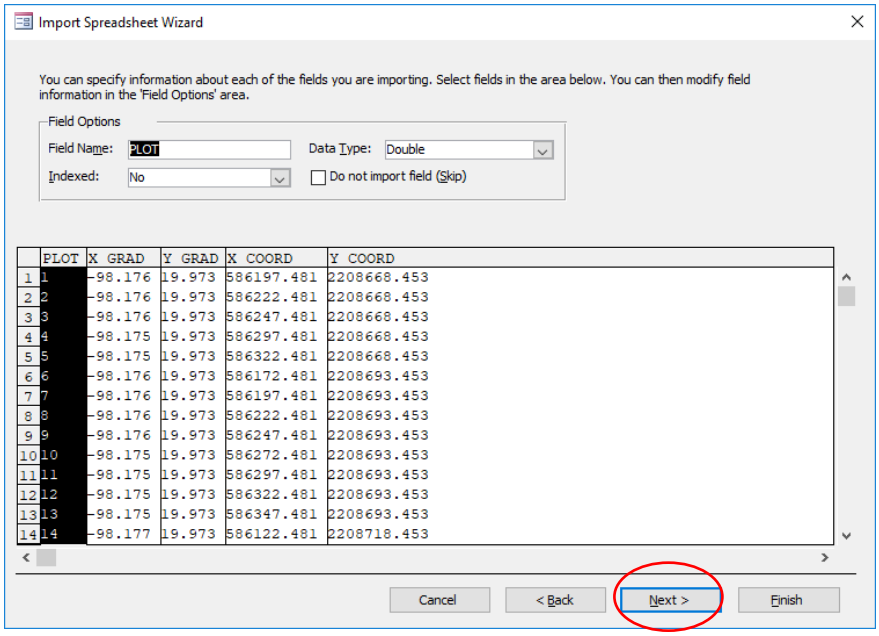


Figure 21. Import Spreadsheet 2

3.6 In the next window, select [PLOT] as the Primary Key. Click [Next].

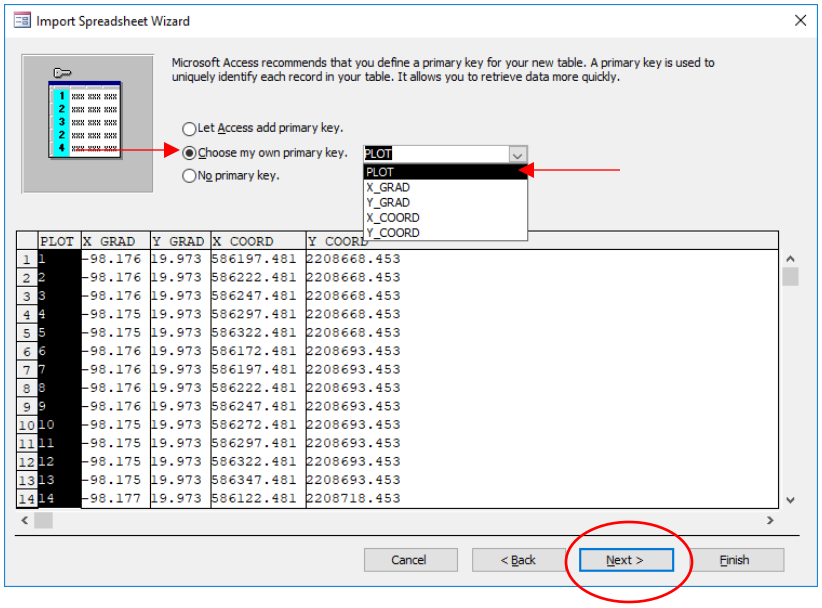


Figure 22. Import Spreadsheet 3

3.7 In the next screen, change the name of the table to “plot_grid” and select [Finish].

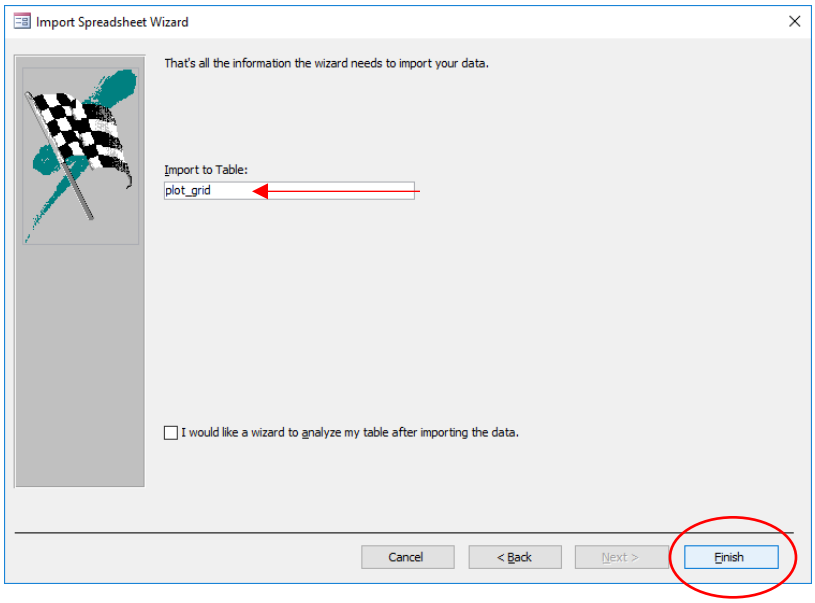


Figure 23. Import Spreadsheet 4

3.8 If a window appears saying “Overwrite existing table or query ‘plot_grid’? click [Yes].

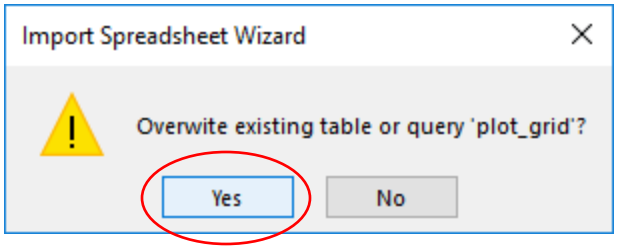


Figure 24. Import Spreadsheet 5

3.9 The next window will ask if you’d like to save the import step. Mark the box and insert a name for the steps if you’d like to save them; however, this is not a necessary step. Click [Close].

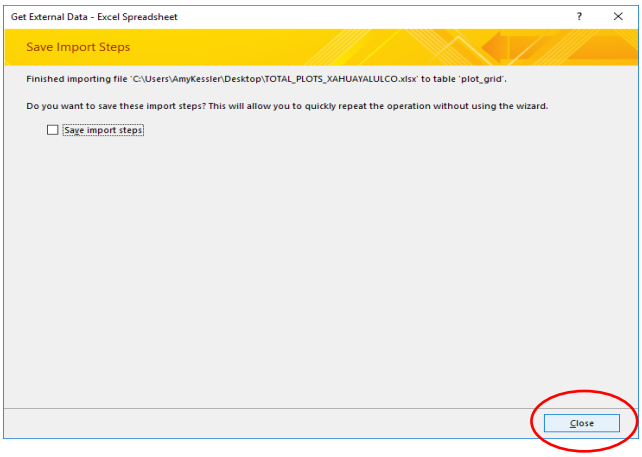


Figure 25. Save Import Steps

4. Select Random Plots

4.1 In the [Formato Principal], click the button for [Seleciona Parcelas al azar]

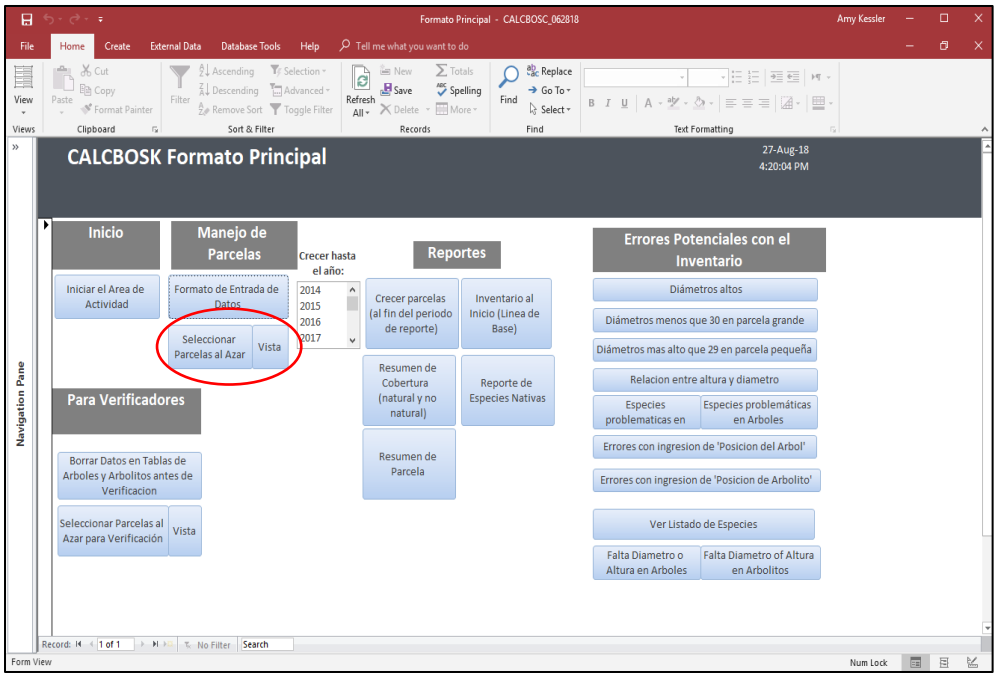


Figure 26. Select Plots Randomly

4.2 Be patient, this can take a few minutes. Finally, a screen will pop up saying "All Done", select [Ok].

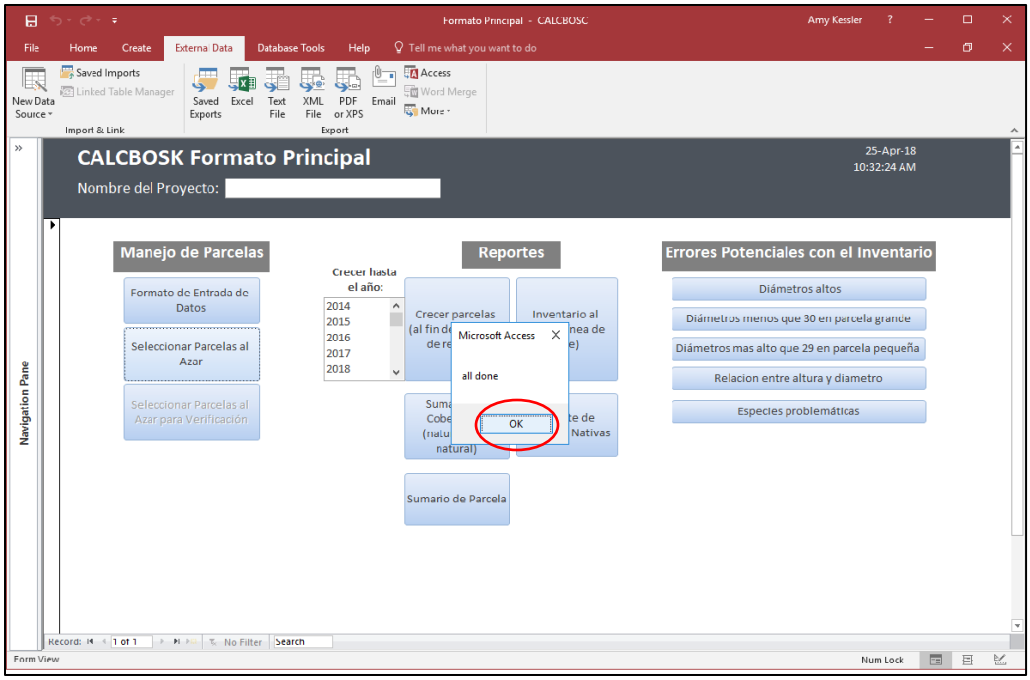


Figure 27. Select Plots

4.3 A series of pop-up windows will appear requesting to enter parameter values, click [OK] without entering any values for any of the pop-up windows.

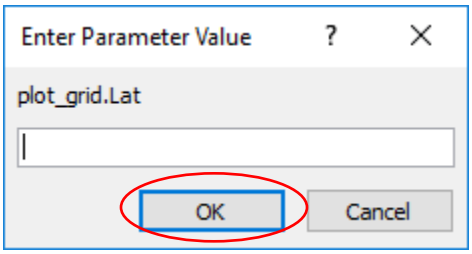


Figure 28. Enter Parameter Values

4.4 Finally, the following table should appear with the plots listed in a random order (Figure 29).

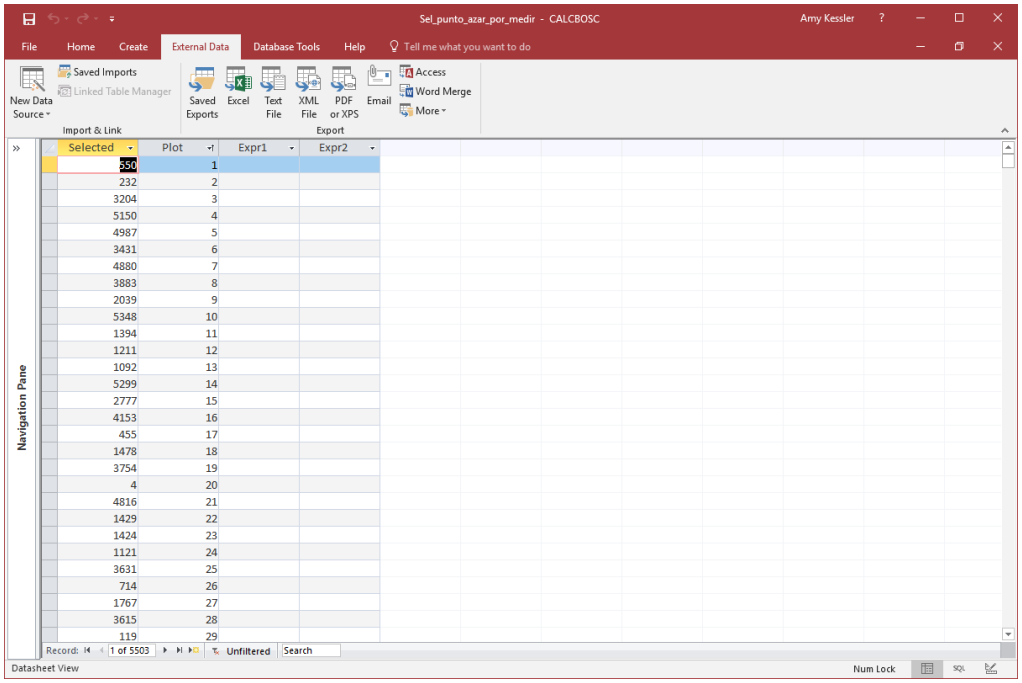


Figure 29. List of Random Plots

VI. Developing an Inventory

Once the plots have been selected randomly for the carbon inventory, the project developer can begin field sampling and entering the data into CALBOSK. For Forest Projects with multiple Activity Areas, the field data for each Activity Area must be entered into a separate CALCBOSK. The project developer may use the Field Inventory Form provided by the Reserve to facilitate recording data in the field.

As described in Section II.ii if the project developer encounters species not included in CALCBOSK during the initial field sampling, the project developer should input the species with a temporary species code of ‘A’, ‘B’, ‘C’ etc. Upon completion of an estimated 80% of needed plots, the project developer should send the Reserve the completed species list in order to receive an updated CALCBOSK with all species equations and codes input.

1. Creating an inventory:

Click the button labeled [Formato de Entrada de Datos] on the dashboard to bring up the [Formato de Entrada de Datos] (Figure 30).

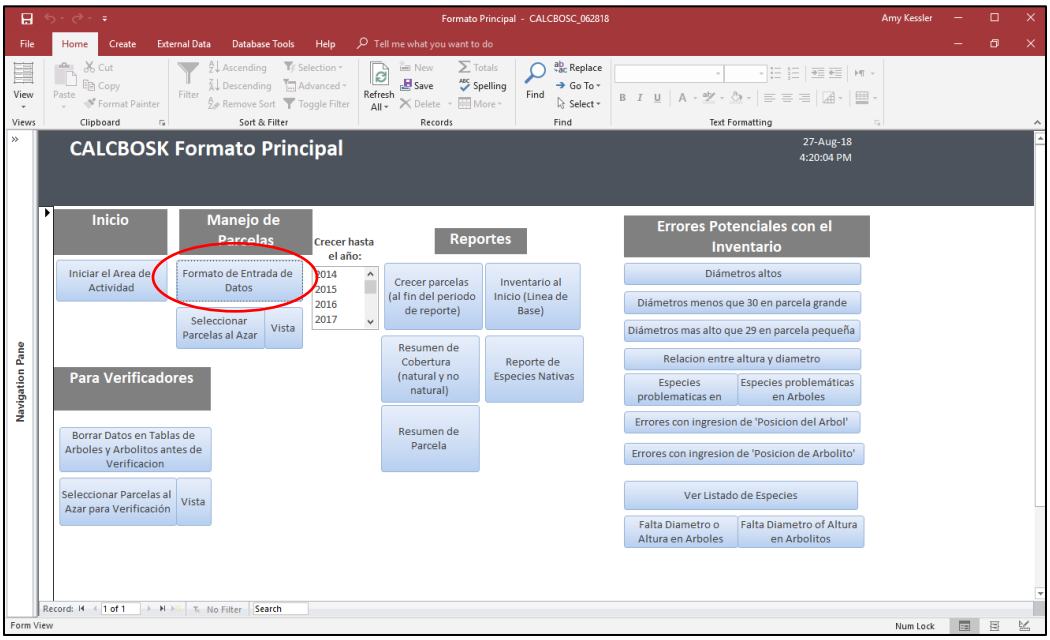


Figure 30. Opening the Formato de Entrada de Datos

To enter data directly from the Field Inventory Forms (see the MFP Quantification Guidance and Field Inventory Form for further information on field measurements):

1.1 Enter in the general plot information in the top section of the Formato de Entrada de Datos (Figure 31)

- i. [Número de Parcela] enter the plot number
- ii. [Líder] enter the initials of the leader of the brigade that took the field measurements
- iii. [Tecnico 1] enter the initials for the field technicians that took the field measurements (up to four field technicians)
- iv. [Fecha] enter the date the field measurements were taken (dd/mm/yyyy)
- v. [Pendiente] enter the average slope of the plot (to the nearest 5%)
- vi. [Aspecto] enter the degrees (azimuth) for the plot aspect
- vii. [Latitud] enter the GPS coordinates for the plot
- viii. [Longitud] enter the GPS coordinates for the plot
- ix. [Estatus] enter whether the plot data is for a plot sampled for the first time “Medida” or re-sampled “Remedida”. The default is “Medida”.

1.2 Enter in the data for each large tree (DBH ≥ 30cm) found in the large plot (11.28 m)

- i. [Número de Parcela] enter plot number
- ii. [Número de Arbol] enter the number of the tree (1,2,3-X)

iii. [Especie] enter the species code for each tree on the plot (species code found in the Species List found in the dashboard)

iv. [Diametro] enter the Diameter at Breast Height (DBH) to the nearest centimeter, or as appropriate for particular species guidance.

v. [Altura] enter the total height (from base of tree to top) to the nearest meter

vi. [Longitud Copa] enter the distance from the base of the tree to the base of the tree's crown

vii. [Vigor] enter the vigor rating (1-5) for each tree

viii. [Grados] for reference trees, enter the degrees (azimuth) of the tree to plot center

ix. [Distancia] for reference trees, enter the distance of the center of the tree to plot center

x. [Incremento] enter the measurement (millimeters) of the past 5-years' radial growth (from ring count) for one high-vigor tree and one low-vigor tree per plot

xi. [Def Rollizo] enter the defect estimate (0-100%) for the bottom third of the tree. This is the area of biomass missing from the tree.

xii. [Def Superior] enter the defect estimate (0-100%) for the middle third of the tree. This is the area of biomass missing from the tree.

xiii. [Def Ramas] enter the defect estimate (0-100%) for the top third of the tree. This is the area of biomass missing from the tree.

1.3 Enter in the data for each small tree (5 ≥ DBH ≥ 30cm) found in the small plot (5.64 m)

i. [Número de Parcela] enter plot number

ii. [Número de Arbol] enter the number of the tree (A-Z)

iii. [Especie] enter the species code for each tree on the plot (species code found in the Field Inventory Form)

iv. [Diametro] enter the Diameter at Breast Height (DBH) to the nearest centimeter

v. [Altura] enter the total height (from base of tree to top) to the nearest meter

vi. [Longitud Copa] enter the distance from the base of the tree to the base of the tree's crown

vii. [Vigor] enter the vigor rating (1-5) for each tree

viii. [Grados] for reference trees, enter the degrees (azimuth) of the tree to plot center

ix. [Distancia] for reference trees, enter the distance of the center of the tree to plot center

x. [Incremento] enter the measurement (millimeters) of the past 5-years' radial growth (from ring count) for one high-vigor tree and one low-vigor tree per plot

xi. [Def Rollizo] enter the defect estimate (0-100%) for the bottom third of the tree

xii. [Def Superior] enter the defect estimate (0-100%) for the middle third of the tree

xiii. [Def Ramas] enter the defect estimate (0-100%) for the top third of the tree

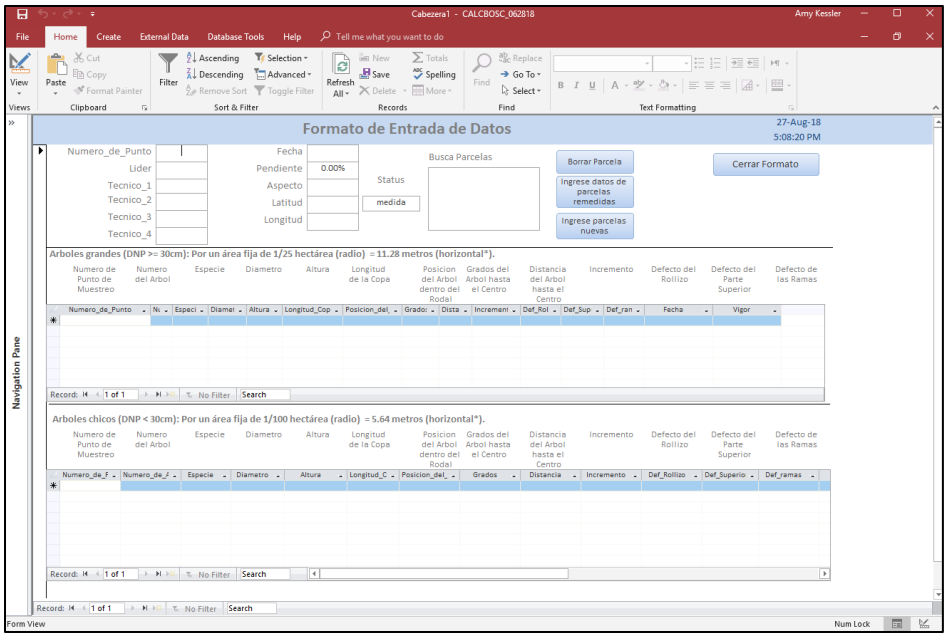


Figure 31. Formato de Entrada de Datos

2. Updating an inventory:

The user may also use the following buttons found on the upper right corner of the Data Entry Form (*Formato de Entrada de Datos*) to facilitate updating the project inventory:

2.1 [Buscar Parcelas] the user may select a specific plot and date of measurement; if a plot has been updated, the same plot will appear twice with the date of both field measurements.

2.2 [Borrar Parcela] use this button to delete a plot.

2.3 [Ingrese Datos de Parcelas Remedidas] use this button to enter data from a remeasured plot; plot data must be remeasured at a minimum of every 12 years or in the case of a natural disaster or harvest. Remember to mark the [Status] as "Remedida" for remeasured plots.

2.4 [Ingrese Parcelas Nuevas] use this button to add a new plot to the inventory.

2.5 [Cerrar Formato] use this button to close the Data Entry Form and return to CALCBOSK's Dashboard.

VII. Confirming compliance with minimum sampling error

After entering plot data for the estimated number of plots required to meet the confidence requirements for inventory sampling, the user may check the estimated sampling error by producing the Activity Area end-of-the Reporting Period carbon stocks report.

As stated above, uncertainty deductions are determined by the sampling error of inventory data at the end of the Reporting Period. CALCBOSK grows project data to the end of each Reporting Period and produces a report with a sampling error for each year.

To determine whether the inventory complies with the required/desired sampling error, the Project Developer should use the sampling error found in the Reporting Period carbon stocks report.

1. Producing the Reporting Period Inventory Report:

To produce the Reporting Period carbon stocks report, the user will select the button [Crecer parcelas (al fin del period de reporte)] and the end-year for the Reporting Period found on the dashboard, as seen in Figure 32.

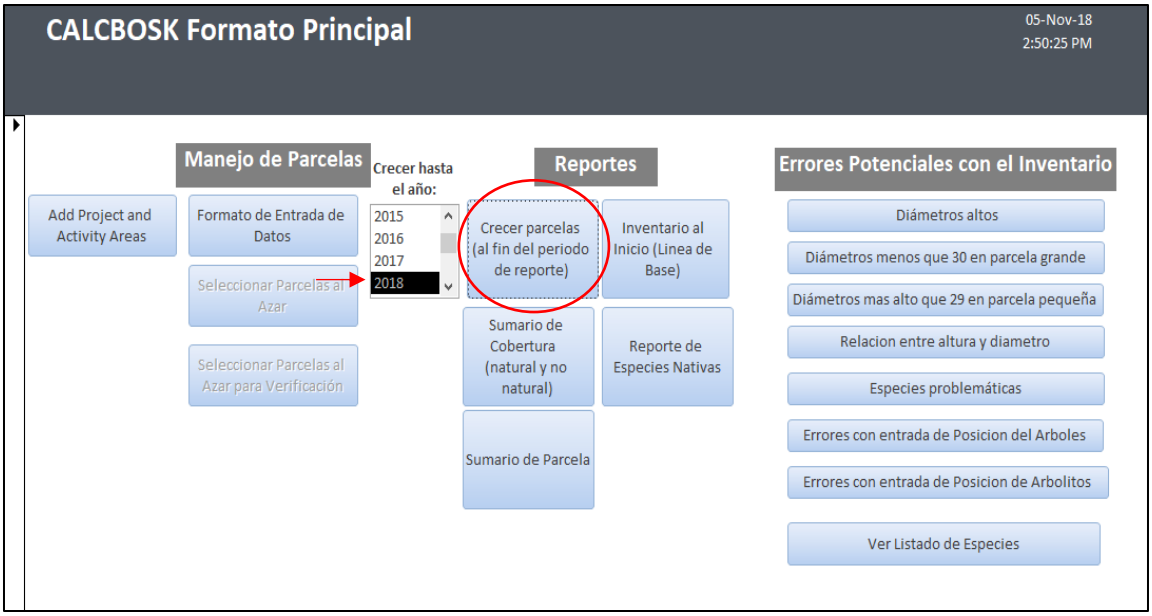
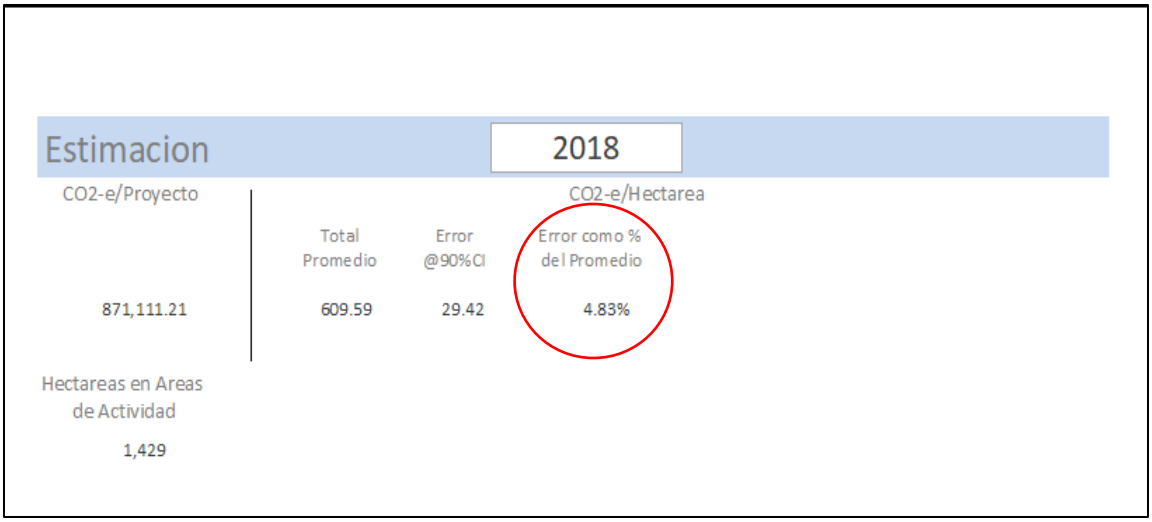


Figure 32. Producing the Inventory Report for the end of the Reporting Period

2. Opening the Inventory Report:

The Reporting Period inventory report will then pop up (Figure 33). The year at the top should reflect the year at the end of the Reporting Period.



Estimacion	2018		
CO2-e/Proyecto			CO2-e/Hectarea
	Total Promedio	Error @90%CI	Error como % del Promedio
871,111.21	609.59	29.42	4.83%
Hectareas en Areas de Actividad			
1,429			

Figure 33. Reporting Period Report for Sampling Error

3. Checking the Sampling Error:

The sampling error for the inventory is shown under “Error como % del Promedio”. If the sampling error for the Activity Area is less than +/- 20% of the mean at the 90% CI, the inventory meets the minimum requirement; however, deductions are applied for uncertainty greater than +/- 5% at 90% CI (See Section 3.2 of the MFP Quantification Guidance for further information).

The error calculated for the end of the Reporting Period is the error that is used to determine if the inventory data meets the minimum sampling error requirements as described in section 3.2 of the MFP Quantification Guidance; this is also the error that is input into the Carbon Monitoring Worksheet (CMW) for each Reporting Period. The CMW then automatically calculates any required uncertainty deductions.

VIII. Calculating the Initial Inventory

After entering plot data required to meet the confidence requirements for inventory sampling, the user may develop the initial inventory report(s) for each Activity Area.

1. Producing the Initial Inventory (baseline) Report:

To produce the initial inventory report for one Activity Area, the user will calculate the plot data for the date of the inventory completion by selecting the button [Inventario al Inicio (Línea de Base)] found on the dashboard, as seen in Figure 34.

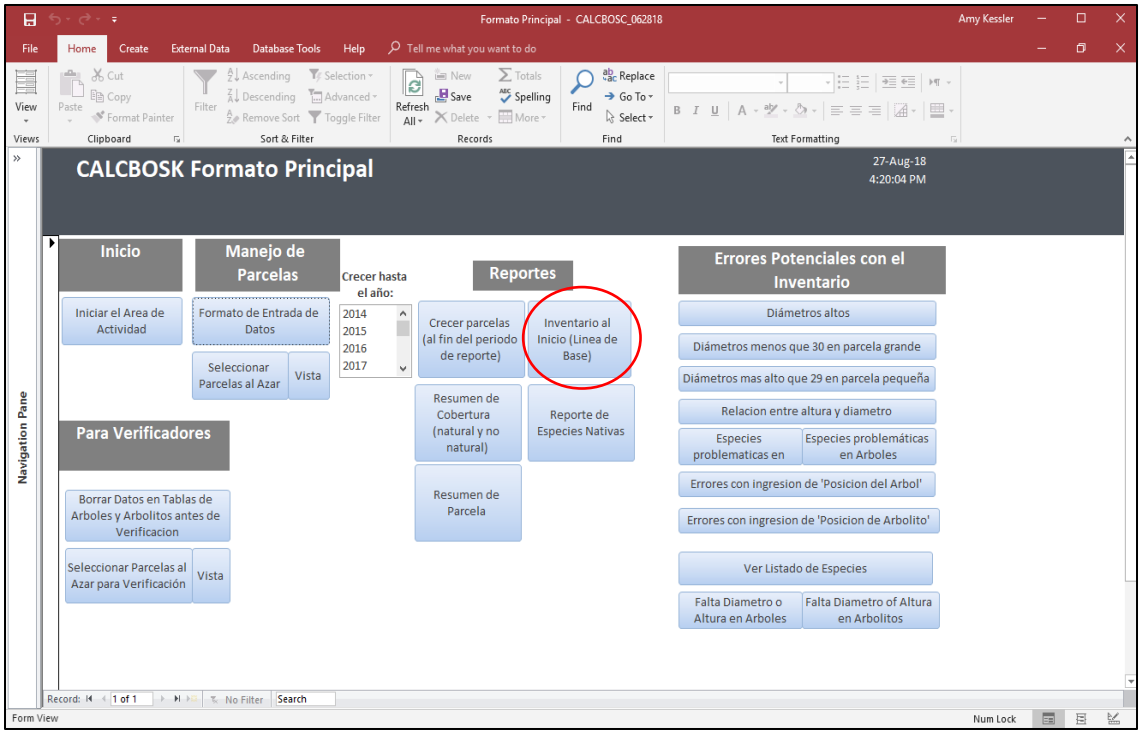


Figure 34. Producing the Project Baseline Report

2. Initial Inventory Report:

The initial inventory report for the Activity Area will then pop up (Figure 35). The date at the top should reflect the year of the project Start Date.

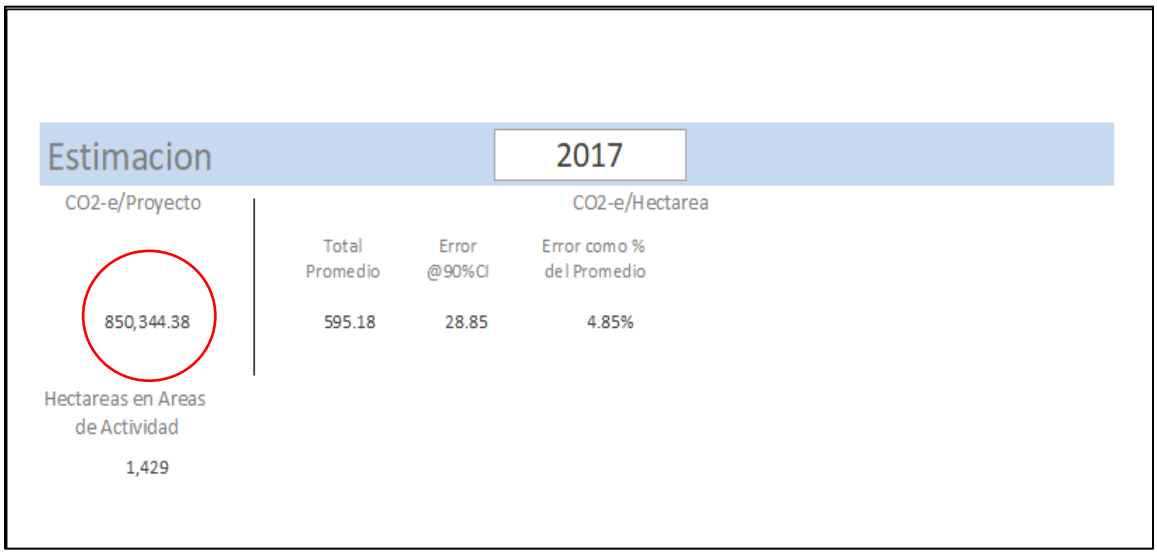


Figure 35. Project Baseline Report

The initial inventory for the Activity Area is reflected under the "CO2e/Proyecto", as demonstrated in Figure 33. If the inventory was completed on the project Start Date, this is the Activity Area baseline.

3. **Grow/Degrow Initial Inventory:**

   If the inventory was not completed on the project Start Date, the value reported as the initial inventory (total tCO_2e) needs to be grown/degrown in the CMW to calculate the carbon stocks at the start date for the Activity Area baseline. See Section XI.1 for further guidance on calculating the Activity Area baseline.

IX. Calculating CO2 Stocks at the end of a Reporting Period

At the end of each Reporting Period, the Forest Owner/Project Developer must calculate the updated CO_2e stocks.

1. **Growing the Plots to the end of the Reporting Period:**

   To produce this report, the user will grow the plot data to the year of the end of the given Reporting Period by selecting the year in the dropdown box found on the Dashboard, and selecting the button [Crecer Parcelas], as seen in Figure 36.

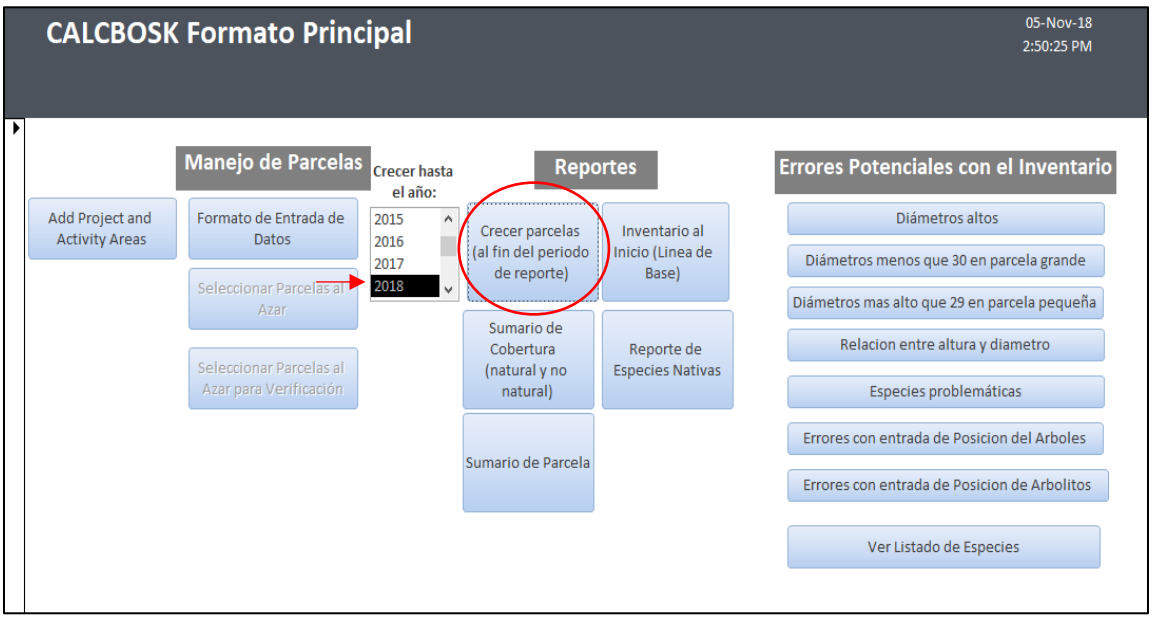


Figure 36. Producing the Inventory Report for the end of the Reporting Period

2. **Updated Inventory Report:**

   The inventory report for the end of the Reporting Period will then pop up (Figure 37). The year at the top should reflect the end year of the given Reporting Period.

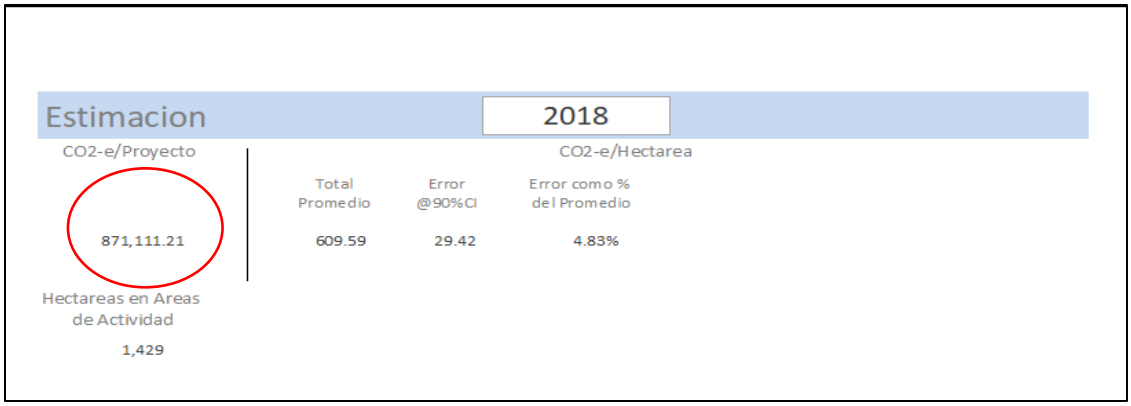


Figure 37. Inventory Report

The updated CO_2e stocks for the given Reporting Period are reflected under the "CO2e/Proyecto", as demonstrated in Figure 37.

X. Confirming Compliance with the Risk Threshold

Each project must confirm compliance with the risk threshold for additionality, demonstrating that at least 10% of the Area of Analysis is currently non-natural landcover. See the Quantification Guidance for further guidance on defining natural landcover.

The risk threshold analysis is conducted for the entire Forest Project by using one of three Areas of Analysis:

1. The Project Area;
2. The area of the municipalities that contain the Project Area; or,
3. The area of the all municipalities that contain the Project Area as well as the municipalities that are adjacent to the project's municipality(ies).

The project must meet the risk threshold for the selected Area of Analysis.

1. Complete i-tree analysis:
The Project Developer must first complete an analysis with i-tree Canopy: https://canopy.itreetools.org/index.php

1.1 The Project Developer will need to upload a Shapefile of the Area of Analysis by selecting the [Load ESRI Shapefile] button (Figure 38).

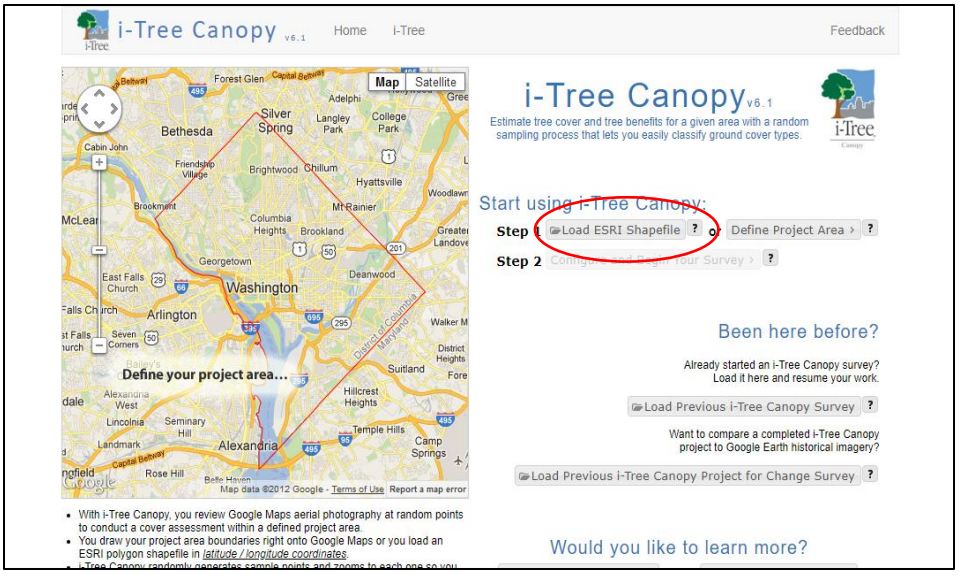


Figure 38. i-tree Step 1

1.2 The Project Developer will then select the [Configure and Begin Your Survey] button.

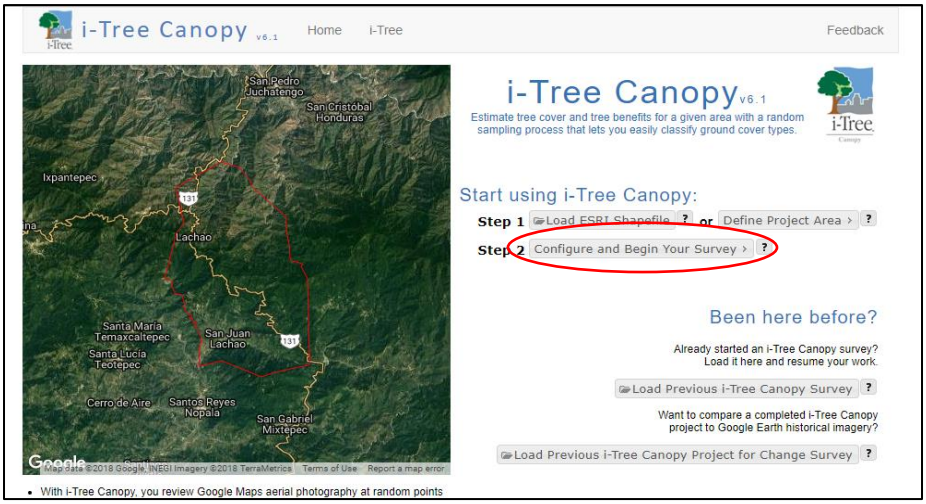


Figure 39. i-tree Step 2

1.3 The Project Developer will then skip through the next two screens.

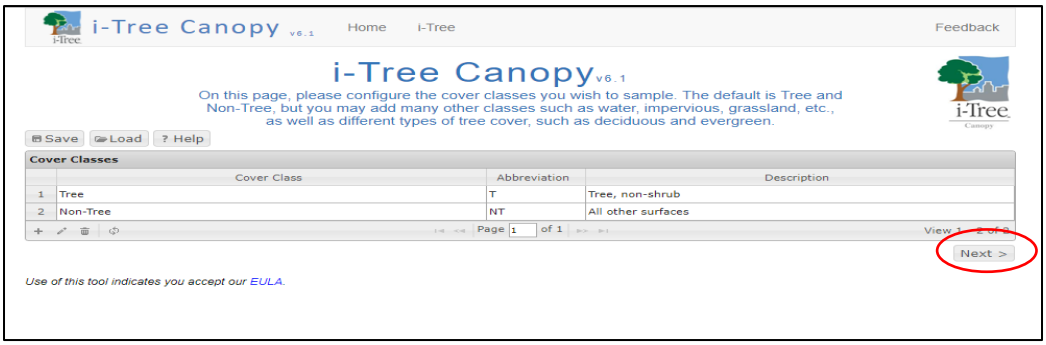


Figure 40. i-tree Step 3

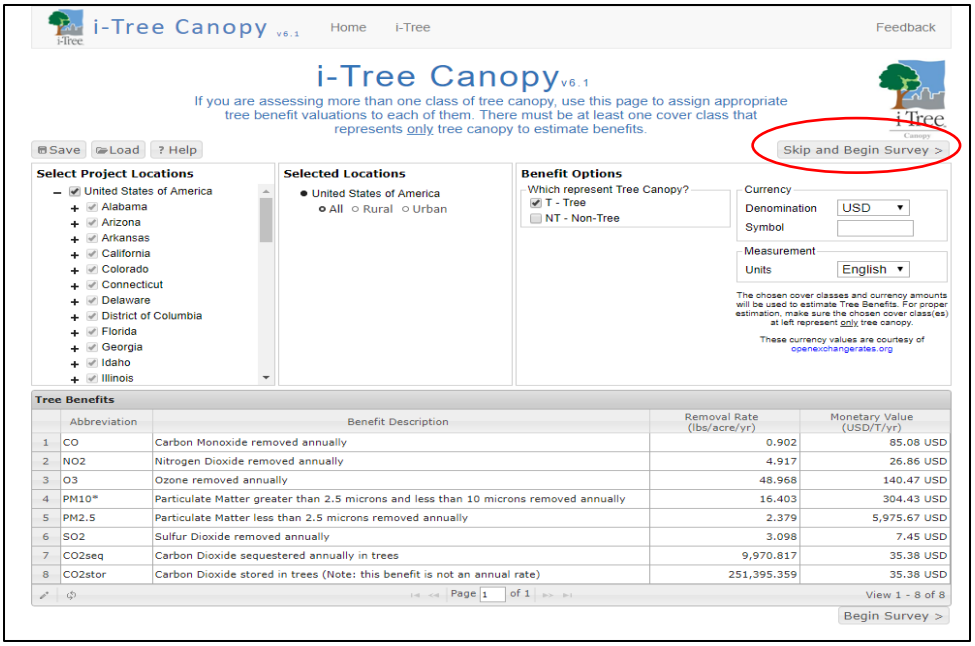


Figure 41. i-tree Step 4

1.4 The Project Developer will then add points and classify the points as [Tree] or [No tree] (Figure 42).

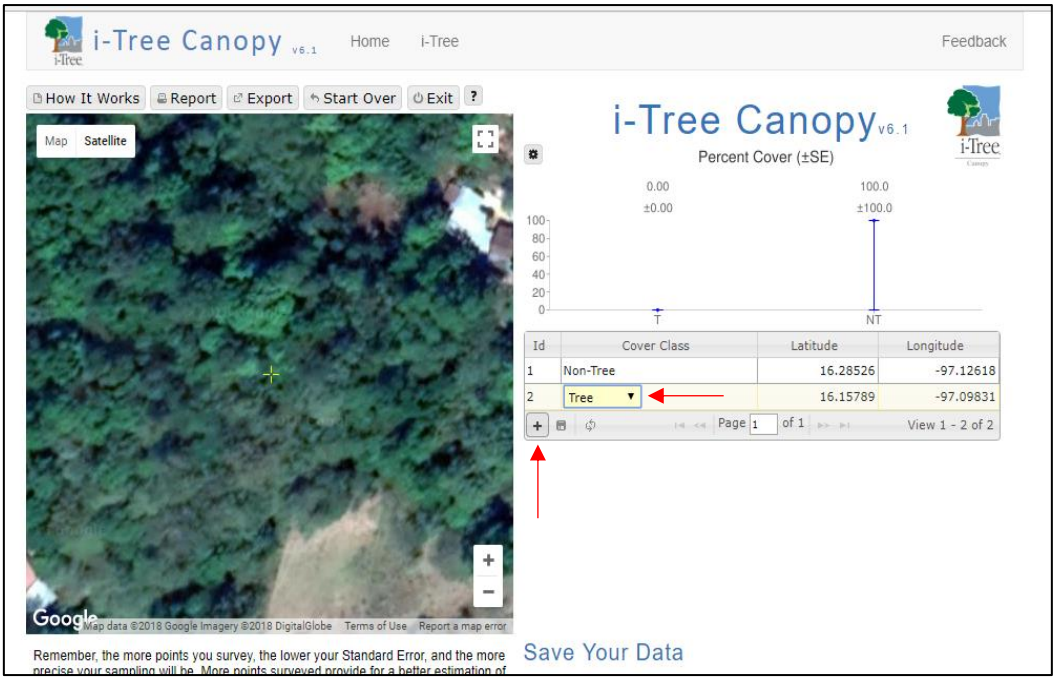


Figure 42. i-tree Step 5

1.5 The Project Developer must continue to add points until a confidence estimate for average canopy cover meets or exceeds +/-10% at one Standard Error for both tree and non-tree (Figure 43). For example, the Project Develop would be able to stop adding points for the project in Figure 43 since the Standard Error

(SE) for both the “tree” and “non-tree” cover classes are +/-10% (or lower) of the percent cover, or the SE is lower than +/-6.6 (10% of 66.0) for the “tree” cover class, and the SE for the “non-tree” cover class is equal to +/-3.4 (10% of 34.0).

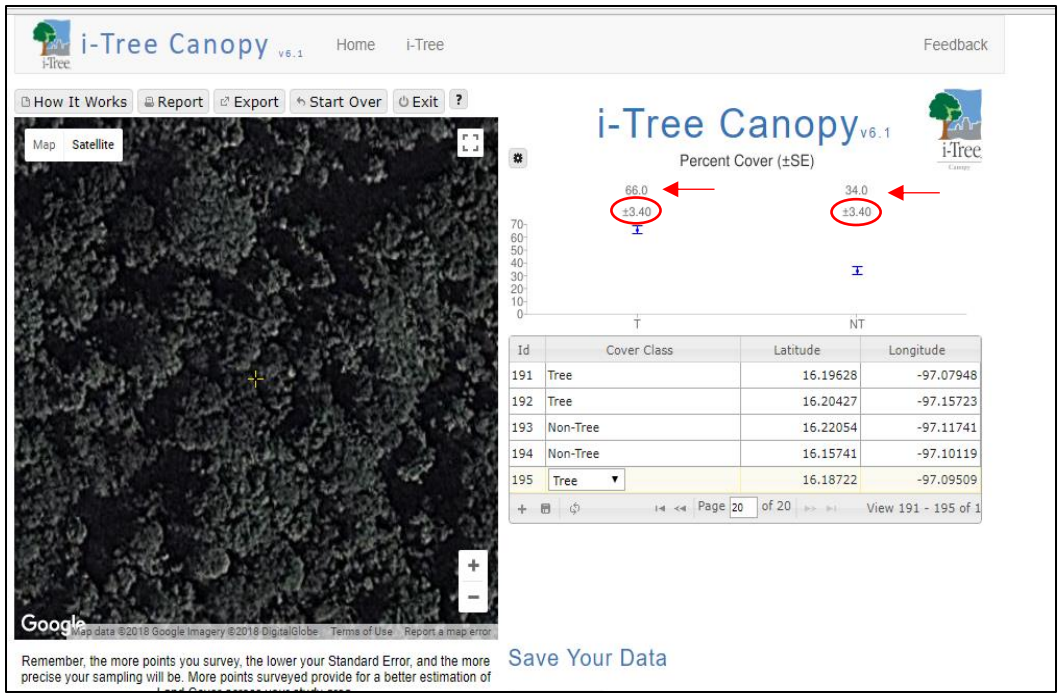


Figure 43. i-tree Step 6

1.5.1 Keep in mind that the percent cover for each cover class will continue to change as more points are sampled, but the goal of the SE being +/-10% or lower of the percent cover remains the target confidence.

1.5.2 You can save the data as you go along (Figure 44).

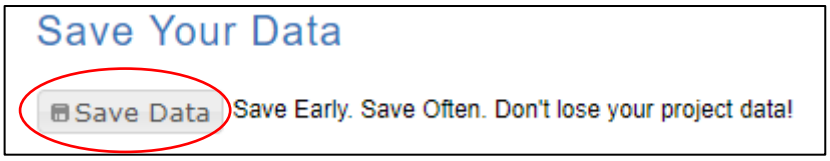


Figure 44. i-tree Save Your Data

1.5.3 You can also zoom in and zoom out on the images by using the [+] and [-] buttons on the bottom right corner of the image (Figure 45).

Figure 45. i-tree Zoom in Zoom out

1.6 Once the correct sample of points has been taken, the Project Developer must export the data points (Figure 46).

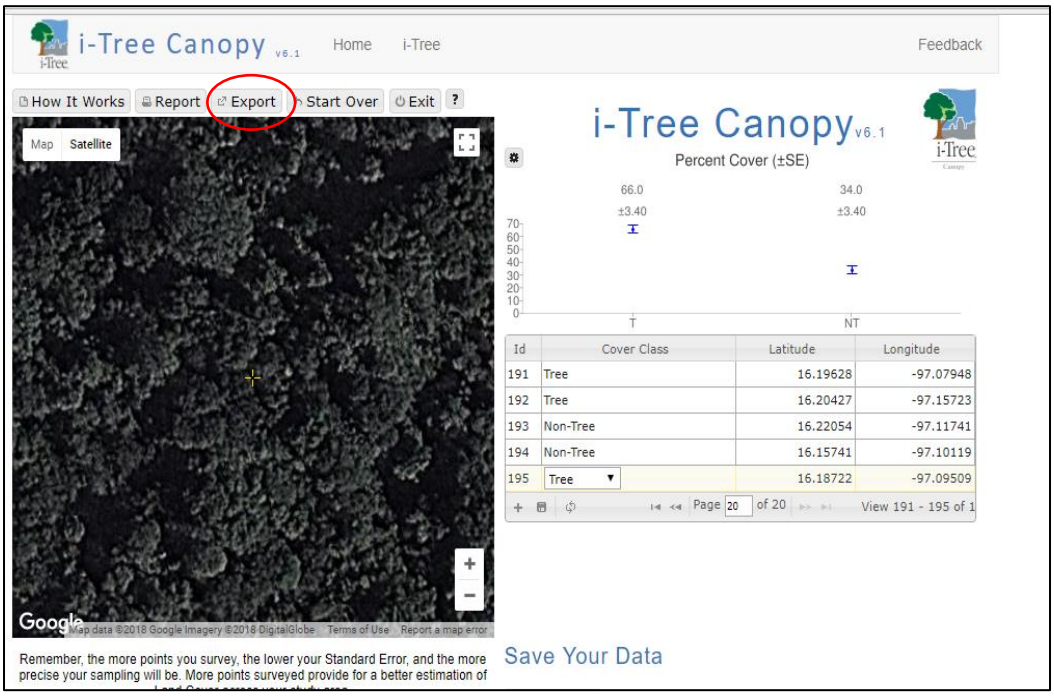


Figure 46. i-tree Export Points

1.7 The Project Developer will then need to specify the file name and select [Ok].

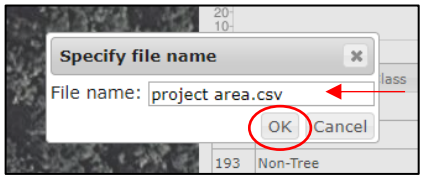


Figure 47. i-tree Specify the Name

2. Classify Landcover Points:

Once the Project Developer has exported the sample points as a CSV file, the Project Developer can import the points into Google Earth Pro to complete the landcover classification.

2.1 Open Google Earth Pro

2.2 Import the exported CSV file (Figure 48).

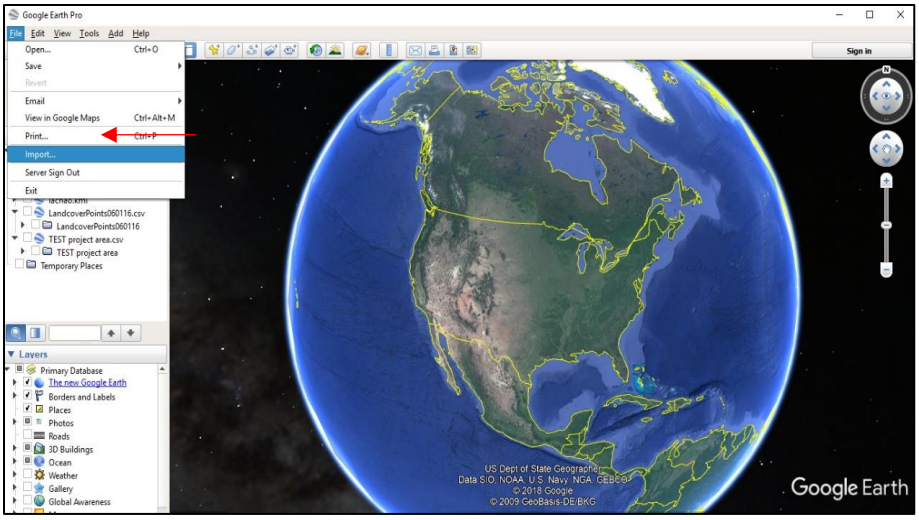


Figure 48. Import CSV into Google Earth Pro

2.3 A pop-up will appear asking whether you would like to create a style template, click [Yes] (Figure 49).

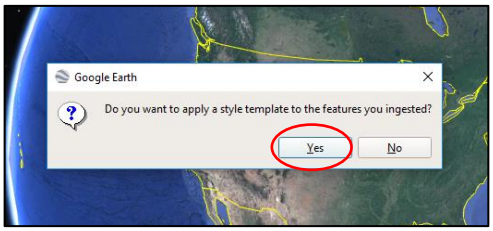


Figure 49. Create Style Template

2.4 The following steps are suggestions for a style template (Figure 50-52).

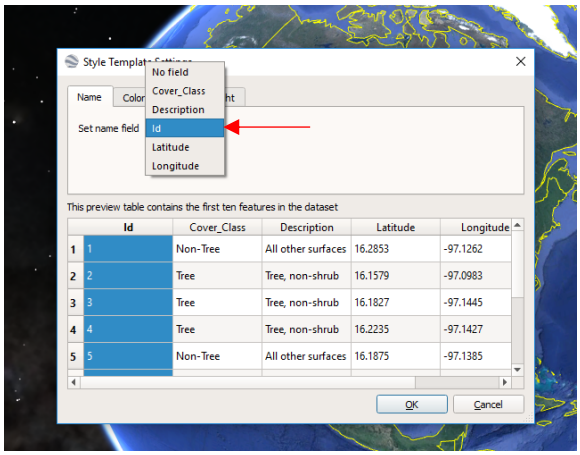


Figure 50. Selecting the ID as the Field Name

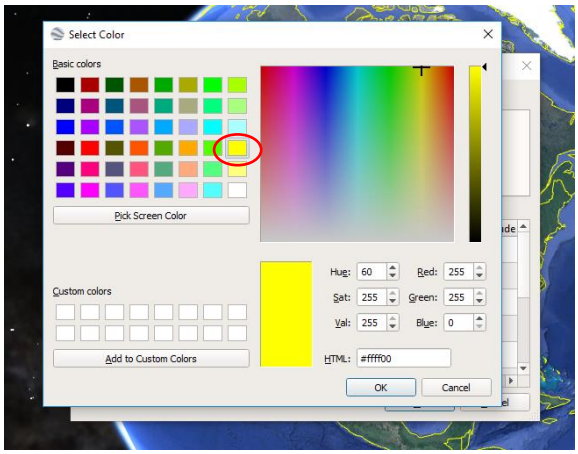


Figure 51. Selecting a Bright Color

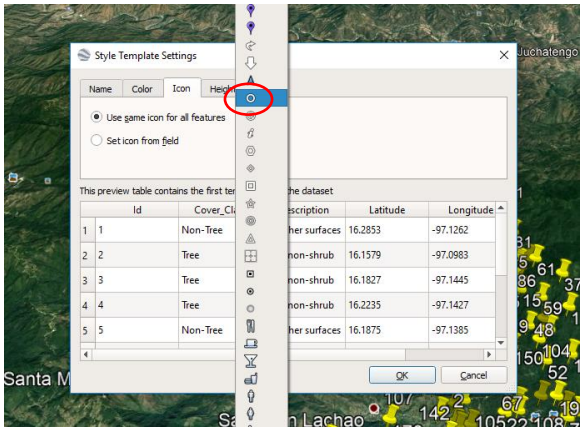


Figure 52. Selecting the Donut Icon

2.5 The Project Developer will then need to classify all points using the landcover classification keys found in Table 2.2 of the Quantification Guidance.

2.5.1 The Project Developer can zoom in to see each point in order to determine the landcover classification. The Project Developer may also use the [Historical Imagery] tool on Google Earth Pro to view past images, which may help in the classification; likewise, general knowledge of the Project Area landcover types may also be used to support the determination of landcover types.

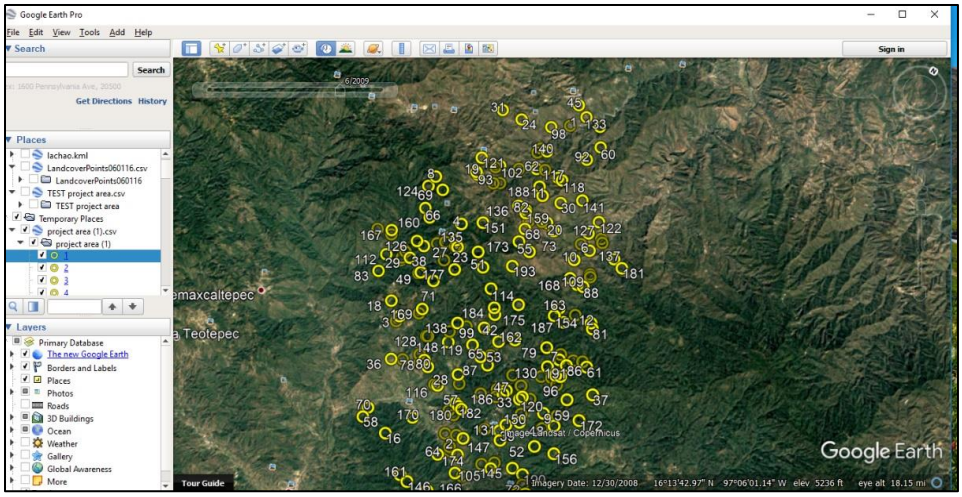
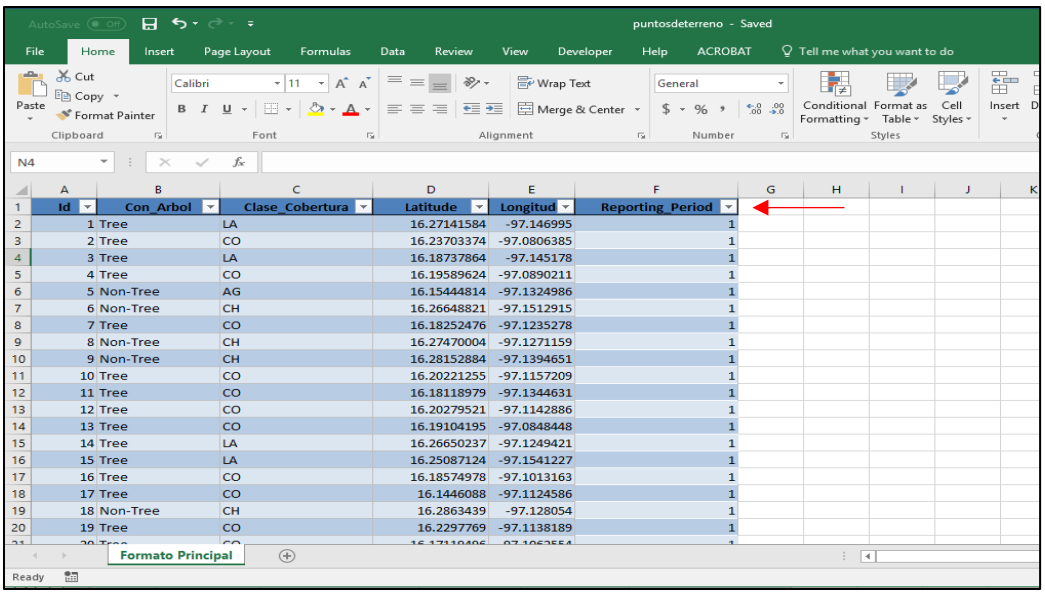


Figure 53. Google Earth Pro Example

3. **Categorize Landcover Points:**

The Project Developer must fill out an excel document using the points taken with i-tree and classified by the landcover codes found in Table 2.2 of the Quantification Guidance (Figure 54). The Project Developer should confirm that the headings are entered exactly as is in the example. A version of the excel with correct headings and no entered data is included on the MPF website.



Id	Con_Arbol	Clase_Cobertura	Latitude	Longitud	Reporting_Period
1	Tree	LA	16.27141584	-97.146995	1
2	Tree	CO	16.23703374	-97.0806385	1
3	Tree	LA	16.18737864	-97.145178	1
4	Tree	CO	16.19589624	-97.0890211	1
5	Non-Tree	AG	16.15444814	-97.1324986	1
6	Non-Tree	CH	16.26648821	-97.1512915	1
7	Tree	CO	16.18252476	-97.1235278	1
8	Non-Tree	CH	16.27470004	-97.1271159	1
9	Non-Tree	CH	16.28152884	-97.1394651	1
10	Tree	CO	16.20221255	-97.1157209	1
11	Tree	CO	16.18118979	-97.1344631	1
12	Tree	CO	16.20279521	-97.1142886	1
13	Tree	CO	16.19104195	-97.0848448	1
14	Tree	LA	16.26650237	-97.1249421	1
15	Tree	LA	16.25087124	-97.1541227	1
16	Tree	CO	16.18574978	-97.1013163	1
17	Tree	CO	16.1446088	-97.1124586	1
18	Non-Tree	CH	16.2863439	-97.128054	1
19	Tree	CO	16.2297769	-97.1138189	1

Figure 54. Landcover Classification Example

4. **Import Excel Document:**

The Project Developer will then import the excel document into CALCBOSK.

4.1 Open CALCBOSK to the Main Dashboard, go to [External Data] section on the control panel, under External Data, go to [New Data Source], under New Data Source, go to [From File], then [Excel]; as demonstrated in Figure 55.

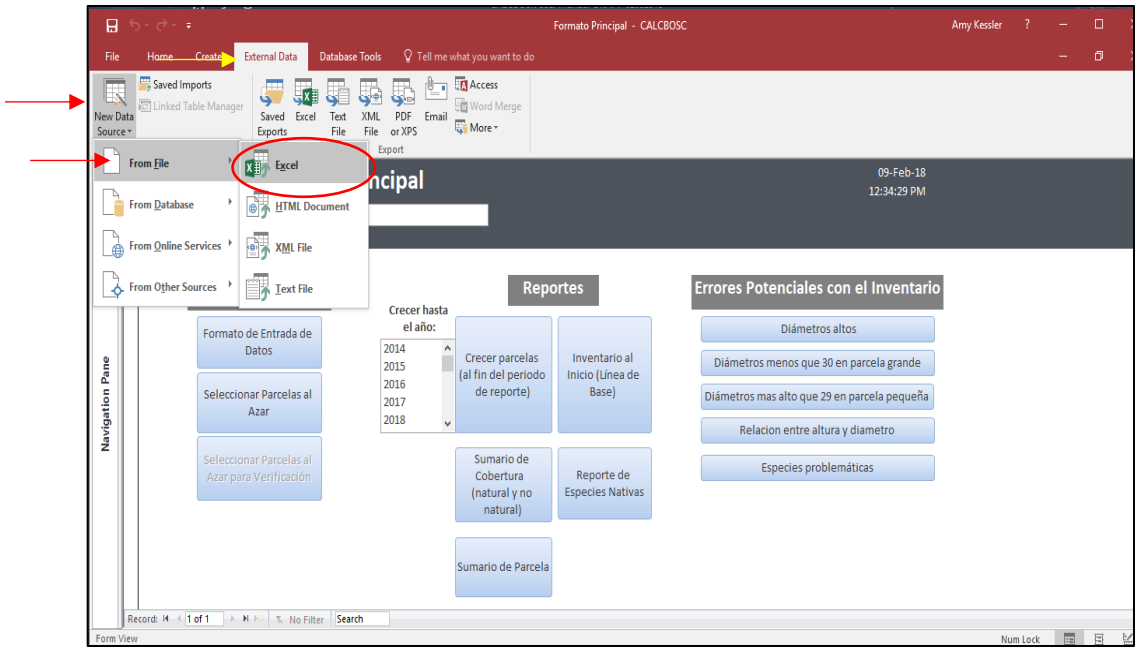


Figure 55. Importing an Excel Document Step 1

4.2 A screen will popup, click [Browse] and locate the correct excel document (Figure 56).

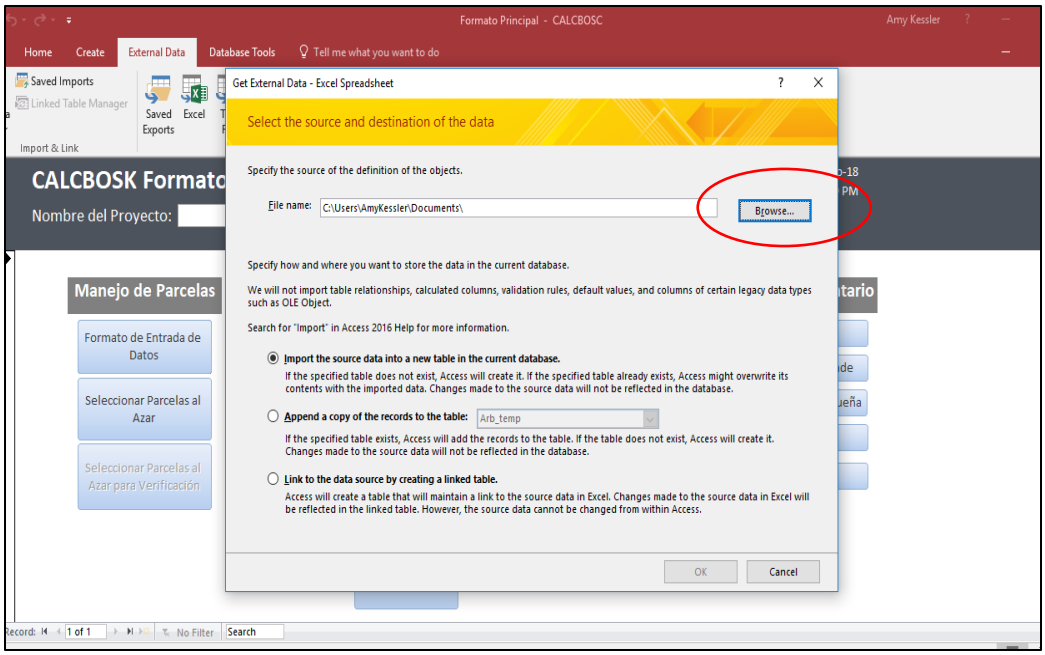


Figure 56. Importing an Excel Document Step 2

4.3 After locating the correct excel document, click [Ok]. The next screen should ask whether the first row contains column headings, make sure the box is checked, then click [Next] (Figure 57).

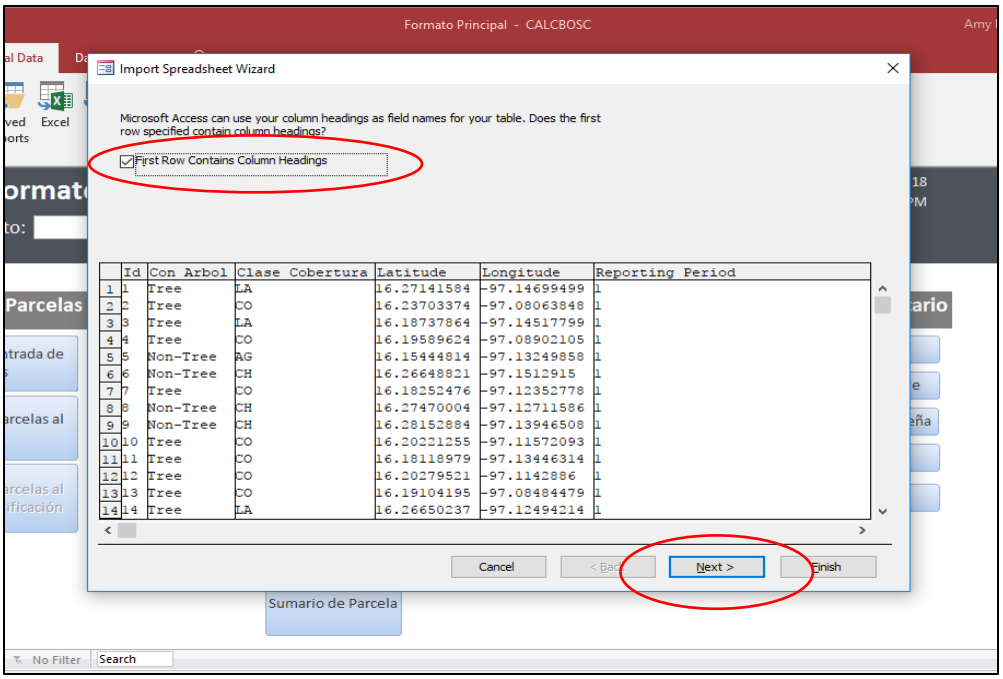


Figure 57. Importing an Excel Document Step 3

4.4 The next screen will ask if you'd like to specify information about each of the fields you are importing. Do not select any fields or specify any information and proceed to the next step by selecting [Next] (Figure 58).

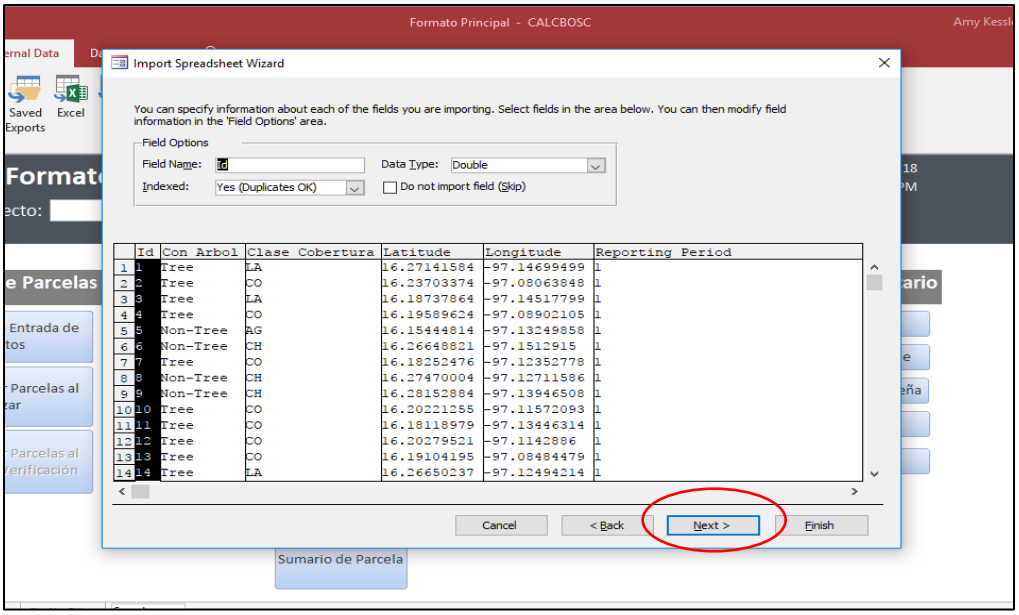


Figure 58. Importing an Excel Document Step 4

4.5 The next screen will ask if you'd like to add a primary key, select [No primary key] and [Next] (Figure 59).

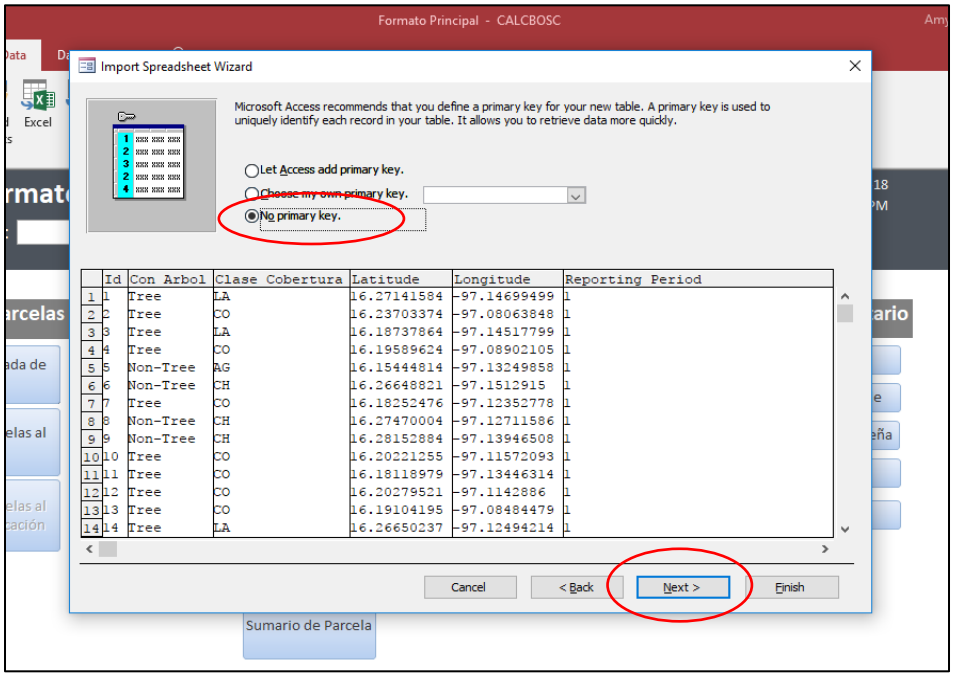


Figure 59. Importing an Excel Document Step 5

4.6 The next screen will ask you to Import to Table, enter [puntosdeterreno] exactly as is in the space and click [Finish] (Figure 60).

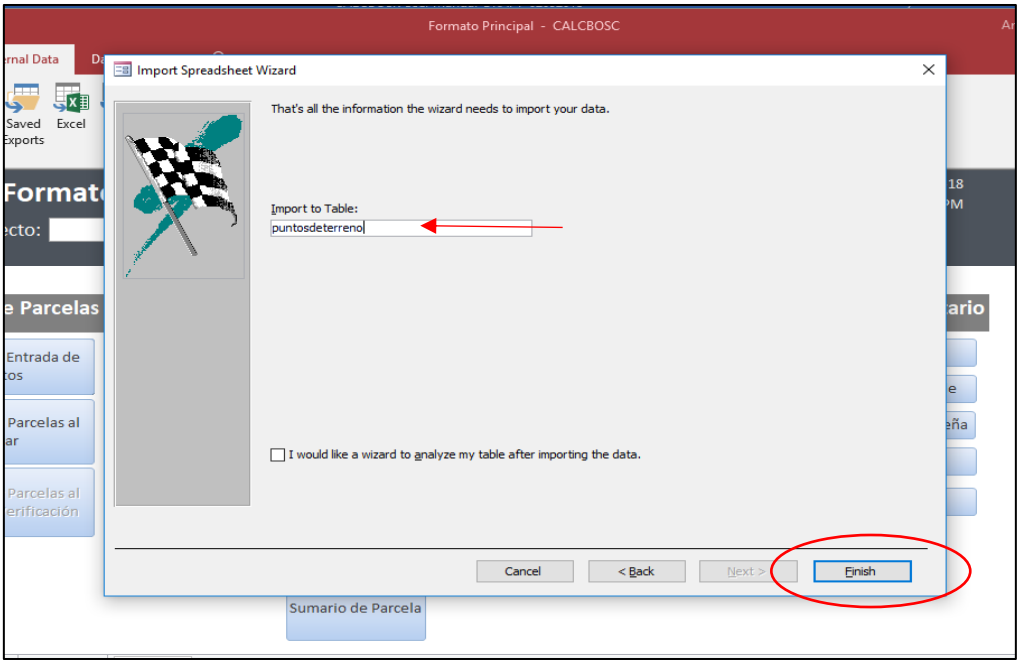


Figure 60. Importing an Excel Document Step 6

5. Generate Landcover Report:

On the dashboard, select the button [Resumen de Cobertura (natural y no natural)] (Figure 61).

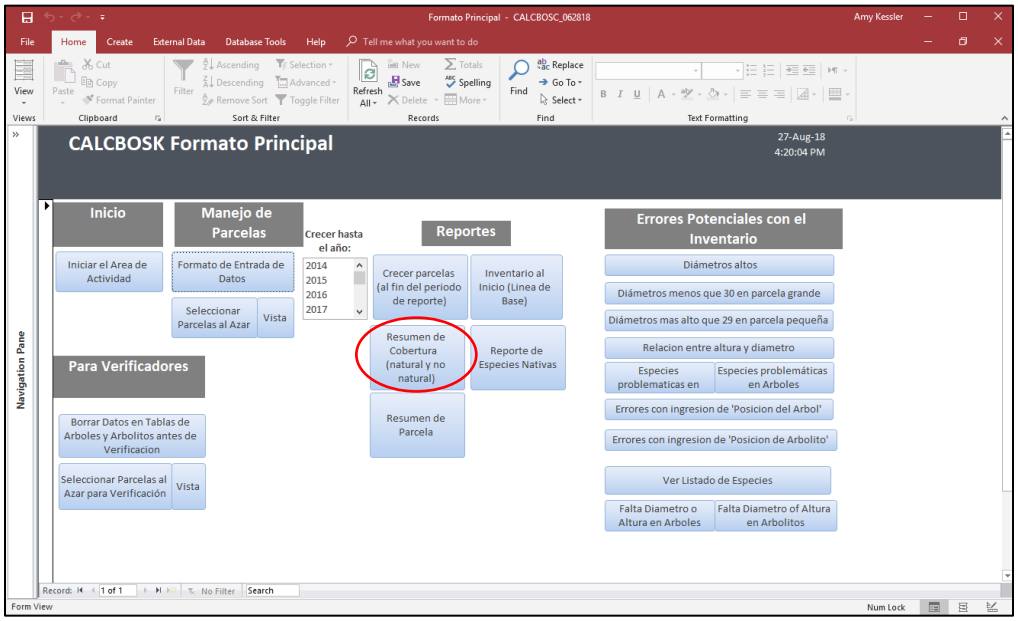
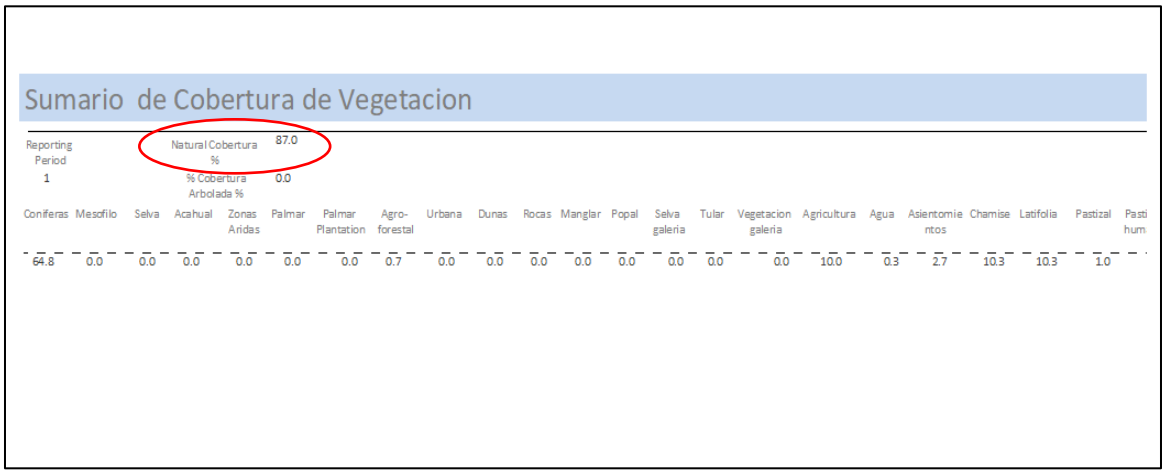


Figure 61. Generate Landcover Report

6. Landcover Report:

The Landcover Report will pop up with the percent of natural landcover at the top (Figure 62). The percent natural landcover is used to determine whether the project meets the risk threshold for determining the baseline.



Sumario de Cobertura de Vegetacion

Reporting Period	Natural Cobertura %	87.0
1	% Cobertura Arbolada %	0.0

Coniferas	Mesofilo	Selva	Acahual	Zonas Aridas	Palmar	Palmar Plantation	Agro-forestal	Urbana	Dunas	Rocas	Manglar	Popal	Selva galeria	Tular	Vegetacion galeria	Agricultura	Agua	Asientomientos	Chamise	Latifolia	Pastizal	Pasti hum
64.8	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.3	2.7	10.3	10.3	1.0	

Figure 62. Landcover Report Example

XI. Confirming Compliance with Ongoing Monitoring of Forest Carbon Stocks in the Project Area

Monitoring is required to ensure project activities do not lead to increased harvest or conversion of forests throughout the entire Project Area. The same methodology from Section IX for

determining compliance with the risk threshold must be applied for ongoing monitoring of Forest Carbon Stocks with the one exception that the Area of Analysis must be the Project Area.

Follow steps 1-5 from Section IX, making the Project Area the Area of Analysis. After completing step 5 from Section IX, complete the following step.

1. **Landover Report:**
The Landcover Report will popup. The percent of forest cover is used to determine compliance with the ongoing monitoring of carbon stocks in the Project Area (Figure 63).

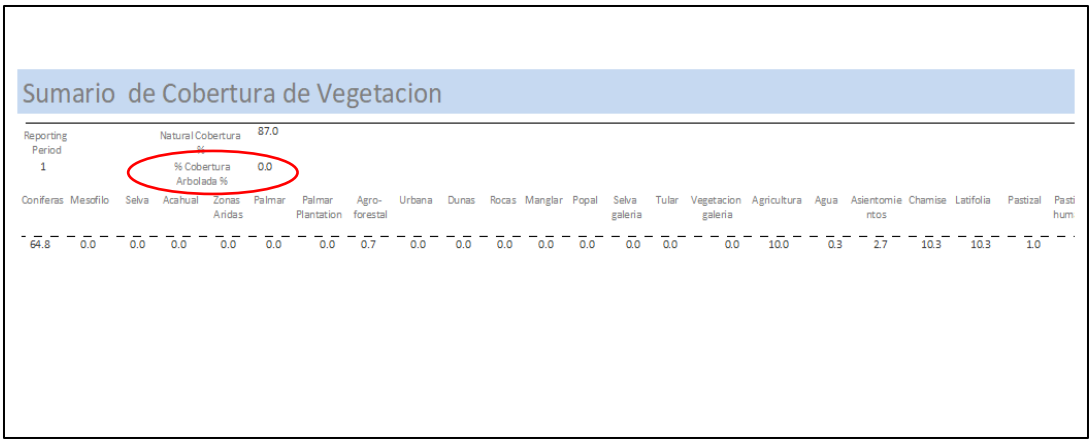


Figure 63. Forest Cover Report

XII. Confirming Compliance with the Native Species Requirements

Each project must confirm compliance with the native species requirements (Environmental Safeguards) prior to all site verifications. See Section 3.11 of the MFP for further information on the Environmental Safeguard requirements.

1. To generate the report after entering inventory data, on the Dashboard, click the button [Reporte de Especies Nativas] (Figure 64).

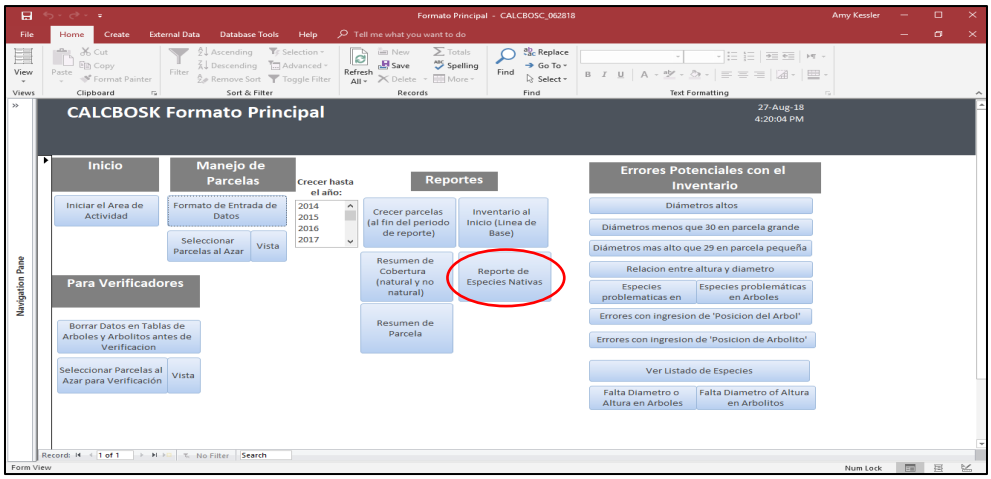


Figure 64. Generate the Native Species Report

2. The Native Species Report will appear with the percent of native trees per hectare in the upper right as shown in Figure 65. The percent native species is used for determining whether the project complies with the Environmental Safeguards for native species.

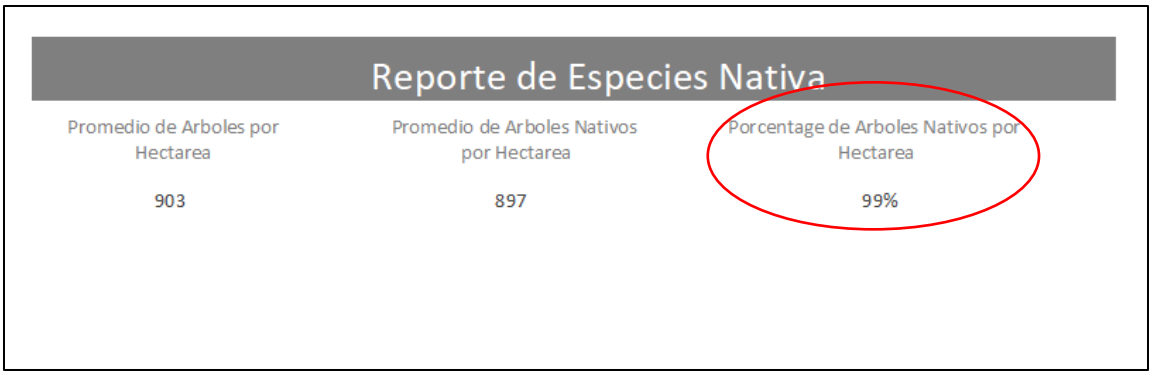


Figure 65. Native Species Report

XIII. Calculating the Number CRTs for each Reporting Period

Each Reporting Period, the Project Developer must calculate the number of CRTs for that Reporting Period as part of the Annual Monitoring Report. The Project Developer must use the Calculation Monitoring Worksheet (CMW) to calculate the number of CRTs.

If the Forest Project has multiple Activity Areas, please contact the Reserve by emailing akessler@climateactionreserve.org and the Reserve will develop a CMW specific to the Forest Project.

1. Complete the Baseline Tab

1.1 In the “Linea de Base” tab of the CMW, enter the date when the last inventory plot was completed in the [Fecha final del Inventario] field and the Activity Area Start Date in the [Fecha de Inicio] field. All dates are to be entered as mm/dd/yyyy.

1.2 In the [Inventario Inicio tCO2e] field enter the “CO2e/Proyecto” value from the Initial Inventory report from CALCBOSK (Figure 35). See Section VII for further guidance on producing the initial inventory report.

1.3 In the [Acervos de Carbono Crecidos por un año] field enter the “tCO2e/Proyecto” value after growing the carbon stocks for one year from the year the inventory was completed (Figure 37). For example, if the inventory was completed in 2017, produce the carbon stocks report for 2018. See Section VIII. for further guidance on producing the carbon stocks report for future years.

1.4 If the final inventory date is not equal to the Activity Area Start Date, the [Linea de Base] field will automatically calculate the carbon stocks at the Activity Area Start Date for the Activity Area baseline.

1.5 If the final inventory date is equal to the Activity Area Start Date, the [Linea de Base] field will automatically populate as the initial carbon stocks value.

1.6 The value calculated for the [Linea de Base] field will automatically populate the baseline field in the “Hoja de Calculo” tab.

Para proyectos que terminan su inventario despues de su fecha de inicio, se necesita ajustar los acervos de carbono iniciales para que la linea de base representa los acervos de carbono a la fecha de inicio del proyecto.

	Información determinada por el Proponente de Proyecto
	Información que se calcula automáticamente

		Notas
Fecha final del Inventario	9/30/2018	Ingresar la fecha de levantamiento de la ultima parcela del inventario inicio (mm/dd/aaaa).
Fecha de Inicio	10/1/2017	Ingresar la fecha de inicio del proyecto (mm/dd/aaaa).
Inventario Inicial tCO2e	850,344.38	Ingresar la cantidad reportada del reporte de calcbosk para el inventario inicial total para el Area de Actividad (tCO2e).
Acervos de Carbono Crecidos por un año	871,111.21	Ingresar la cantidad reportada del reporte de calcbosk para los acervos de carbono total para el Area de Actividad (tCO2e) crecidos por un año de la fecha final del inventario. Por ejemplo, si la fecha final del inventario es 11/31/2018, entrar la cantidad para los acervos de carbono crecidos hasta 2019.
Linea de Base	**829,634**	La linea de base esta calculado automaticamente para representar los acervos de carbono a la fecha de inicio del proyecto (tCO2e).

OJO: Si se terminó su inventario después de la Fecha de Inicio del Area de Actividad y ajustaron la Linea de Base para representar los acervos de carbono en su Fecha de Inicio, se utiliza "el inventario inicial" como los acervos de carbono al fin del primer periodo de reporte. Se debe intentar de vincular el fin del primer Periodo de Reporte con la fecha que se cumple su inventario.

Figure 66. Baseline Tab of the CMW

2. Enter the Initial Reporting Period Start and End Date

In the “Hoja de Calculo” tab the Project Developer will then need to enter the date for the end of the initial Reporting Period and the reporting date. All dates are to be entered as mm/dd/yyyy.

Hoja de Cálculo para el Reporte de Monitoreo Anual				Información determinada por el Proponente de Proyecto			
				Información que se calcula automáticamente			
	Años >	1	2	3	4	5	6
Fecha de Inicio	10/1/2017	Los proyectos tienen hasta dos años a partir de la Fecha de Inicio del proyecto para someter el Reporte de créditos se distribuirán cada año según la proporción de tiempo. El inventario reportado deberá ser propor					
Fecha de Inicio del Periodo de Reporte		10/1/2017	10/1/2018	10/1/2019	10/1/2020	10/1/2021	10/1/2022
Fecha de Termino del Periodo de Reporte		9/30/2018	9/30/2019	9/30/2020	9/30/2021	9/30/2022	9/30/2023
Fecha de Reporte		10/1/2018	10/1/2019				
Linea de Base (CO2-e) por cada Área de Actividad	829,634.00						
Acervos de Carbono en Sito Muestreados (toneladas de CO_2e)		**850,344.38**	**871,111.21**				
Incertidumbre de estimación en el año corriente		4.85%	4.82%				
Calculo para la deducción por incertidumbre del proyecto		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Acervos de Carbono en Sitio Muestreados (Ajustados por deducción de confianza) (toneladas de CO_2e)		850,344	871,111	-	-	-	-
Acervos de Carbono en Sitio - Línea de Base (toneladas CO2e)	**829,634**	**829,634**	**829,634**	**829,634**	**829,634**	**829,634**	**829,634**
Remociones de GEI de Acervos de Carbono en Sitio Cuantificadas Verificados (toneladas CO_2e)		20,710	41,477	-	-	-	-
Remociones de GEI de Acervos de Carbono en Sitio Verificados Anuales (toneladas CO2e)		20,710	20,767	-	-	-	-

Figure 67. Entering the Required Dates in the CMW

3. Enter Reporting Period Carbon Stocks

The Project Developer will need to locate the total CO2 for the Activity Area from the end-of-the Reporting Period carbon stocks Report and corresponding sampling error (Figure 68); the end-of-the Reporting Period carbon stocks for the first Reporting Period should be automatized from the "Baseline Tab", however, the sampling error should be entered into the CMW (Figure 69).

3.1 If the [Fecha final del Inventario] entered in the "Baseline Tab" was not equal to the [Fecha de Inicio] for the Activity Area, and the value for the baseline was calculated by back-casting the initial carbon stocks to the Activity Area start date, then the initial carbon stocks value will be used as the end-of-the first Reporting Period carbon stocks value. It is recommended that projects try to link the end of the first Reporting Period date with the final inventory date.

3.2 If the [Fecha final del Inventario] entered in the "Baseline Tab" was equal to the [Fecha de Inicio] for the Activity Area, then the carbon stocks value after one year of growth will automatically be used as the end-of-the first Reporting Period carbon stocks value.

3.3 For each following Reporting Period, the value for growing the carbon stocks one year from the previous year should be inserted for the updated carbon stocks value and the sampling error for each Reporting Period (Figure 69).

Estimacion	2017		
CO2-e/Proyecto	CO2-e/Hectarea		
	Total Promedio	Error @90%CI	Error como % del Promedio
850,344.38	595.18	28.85	4.85%
Hectareas en Areas de Actividad			
1,429			

Figure 68. End-of-the Reporting Period Activity Area CO2 and Sampling Error

Hoja de Cálculo para el Reporte de Monitoreo Anual							
				Información determinada por el Proponente de Proyecto			
				Información que se calcula automáticamente			
	Años >	1	2	3	4	5	6
Fecha de Inicio	10/1/2017	Los proyectos tienen hasta dos años a partir de la Fecha de Inicio del proyecto para someter el Reporte de créditos se distribuirán cada año según la proporción de tiempo. El inventario reportado deberá ser propor					
Fecha de Inicio del Periodo de Reporte		10/1/2017	10/1/2018	10/1/2019	10/1/2020	10/1/2021	10/1/2022
Fecha de Termino del Periodo de Reporte		9/30/2018	9/30/2019	9/30/2020	9/30/2021	9/30/2022	9/30/2023
Fecha de Reporte		10/1/2018	10/1/2019				
Linea de Base (CO2-e) por cada Área de Actividad	829,634.00						
Acervos de Carbono en Sito Muestreados (toneladas de CO_2e)		**850,344.38**	**871,111.21**				
Incertidumbre de estimación en el año corriente		4.85%	4.82%				
Calculo para la deducción por incertidumbre del proyecto		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Acervos de Carbono en Sitio Muestreados (Ajustados por deducción de confianza) (toneladas de CO_2e)		850,344	871,111	-	-	-	-
Acervos de Carbono en Sitio - Línea de Base (toneladas CO2e)	**829,634**	**829,634**	**829,634**	**829,634**	**829,634**	**829,634**	**829,634**
Remociones de GEI de Acervos de Carbono en Sitio Cuantificadas Verificados (toneladas CO_2e)		20,710	41,477	-	-	-	-
Remociones de GEI de Acervos de Carbono en Sitio Verificados Anuales (toneladas CO2e)		20,710	20,767	-	-	-	-

Figure 69. Entering the Updated Reporting Period Carbon Stocks

4. Completing the CMW

The Project Developer will also need to enter in the following information in the CMW rows highlighted in green:

4.1 The percent of volume in wood products for the current Reporting Period as compared to a historical average in order to calculate the Secondary Effects discount factor.

4.2 The percent leakage risk associated with the displacement of agricultural activities due to reforestation activities per Figure 8.1 of the MFP.

4.3 If any reversals have occurred in the current Reporting Period, the total tCO2 reversed and the tCO2 reversed due to intentional reversals.

4.4 The period of time in which the Forest Owner guarantees the maintenance of forest carbon stocks credited as CRTs through the execution of the Project Implementation Agreement (i.e. 30 years).

5. Calculate Number of CRTs

After entering the necessary data, the Project Developer can view the results for the total number of CRTs to be issued for the current Reporting Period as well as the contribution to the buffer account and the number to be issued to the Forest Owner account (Figure 70). Below the totals, the Project Developer can see the number of CRTs issued per vintage.

40	**Créditos Emitidos al Dueño del Proyecto (Antes de contribución al Fondo de Aseguramiento)**									
41	Créditos Emitidos al Titular de la Cuenta del Año Corriente		10,570	-	-	-	-	-	-	-
42	Créditos Adicionales emitidos de años anteriores debido al periodo contractual de largo plazo		-	-	-	-	-	-	-	-
43	**Créditos Totales Emitidos al Titular de la Cuenta en el Año Corriente**		**10,570**	-	-	-	-	-	-	-
44	**Créditos Acumulados Brutos**		**10,570**	**10,570**	**10,570**	**10,570**	**10,570**	**10,570**	**10,570**	**10,57**
45	**Remociones Verificados no Emitidos como Créditos**									
46	Remociones Verificados anuales de CO2 no emitidos como créditos en el mismo periodo de reporte		14,885	-	-	-	-	-	-	-
47	Remociones totales verificados de CO2 no emitidos como créditos hasta la fecha		14,885	14,885	14,885	14,885	14,885	14,885	14,885	14,88
48	**Créditos Emitidos al Dueño Forestal (Después de contribución al Fondo de Aseguramiento)**									
49	Contribución de Créditos del Proyecto al Fondo de Aseguramiento		845	-	-	-	-	-	-	-
50	**Créditos Netos Emitidos al Dueño Forestal**		**9,725**	-	-	-	-	-	-	-
51	**Créditos Acumulados Brutos**		**9,725**	-	-	-	-	-	-	-
52	**Reporte por Vintage**									
53	**Vintage 1**		**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
54	Créditos Netos Emitidos al Dueño Forestal		7340	0	0	0	0	0	0	0
55	Contribución de Créditos de Proyecto al Fondo de Aseguramiento		637	0	0	0	0	0	0	0
56	**Vintage 2**		**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
57	Créditos Netos Emitidos al Dueño Forestal		2384	0	0	0	0	0	0	0
58	Contribución de Créditos de Proyecto al Fondo de Aseguramiento		207	0	0	0	0	0	0	0
59										

Figure 70. CRTs Issued

XIV. Completing an On-Site Verification (Verifiers)

Each Forest Project must under an on-site verification as part of the initial verification and in general at a minimum of every 6 Reporting Periods. See the MFP Verification Guidance for further details on the requirements for on-site verifications. This section will cover the use of the quantification tools to complete the sequential sampling portion of the on-site verification.

1. Select Plot Order:

1.1 Prior to a site visit, the verification body must put the plots in a random order for sequential sampling. The verification body should download the project CALCBOSK submitted for verification from the project's account on the Reserve APX site. Upon downloading the correct version, the verification body can generate the list of plots using the [Seleccionar Parcelas al Azar para Verificación].

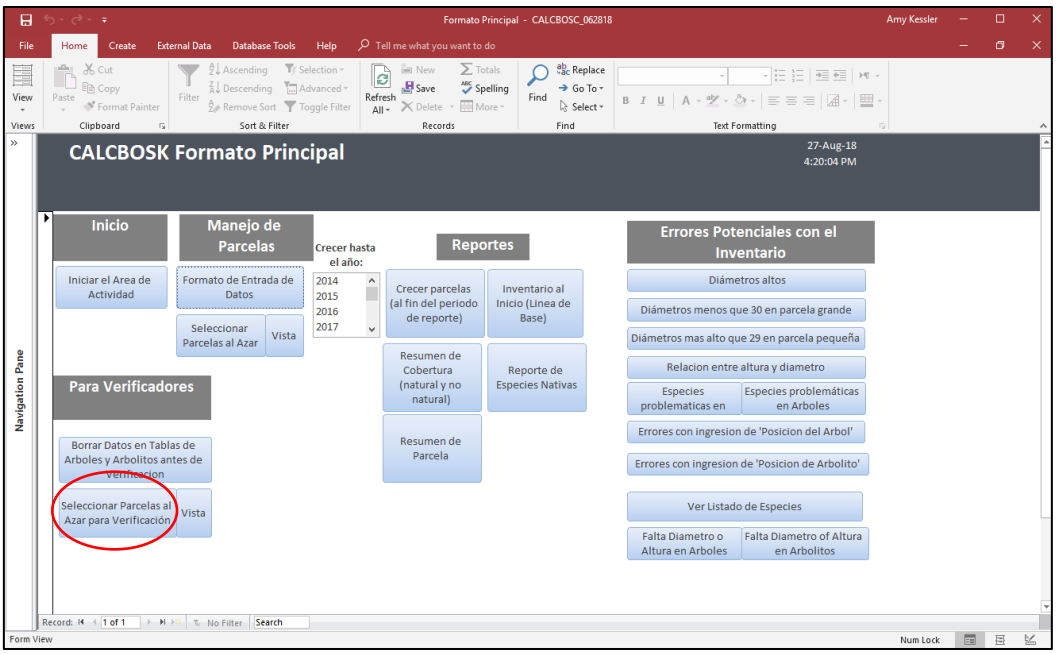


Figure 71. Selecting Plots for Verification

A table should then popup with the all plots listed in a random order. Use this order for completing sequential sampling. Remember that the verifier does not need to sample the plots in the field in this order but does need to enter the data into the sequential sampling tool in this order.

1.2 After producing the table, Export the table into an Excel document to save and send to the Reserve upon completing sequential sampling (Figure 72).

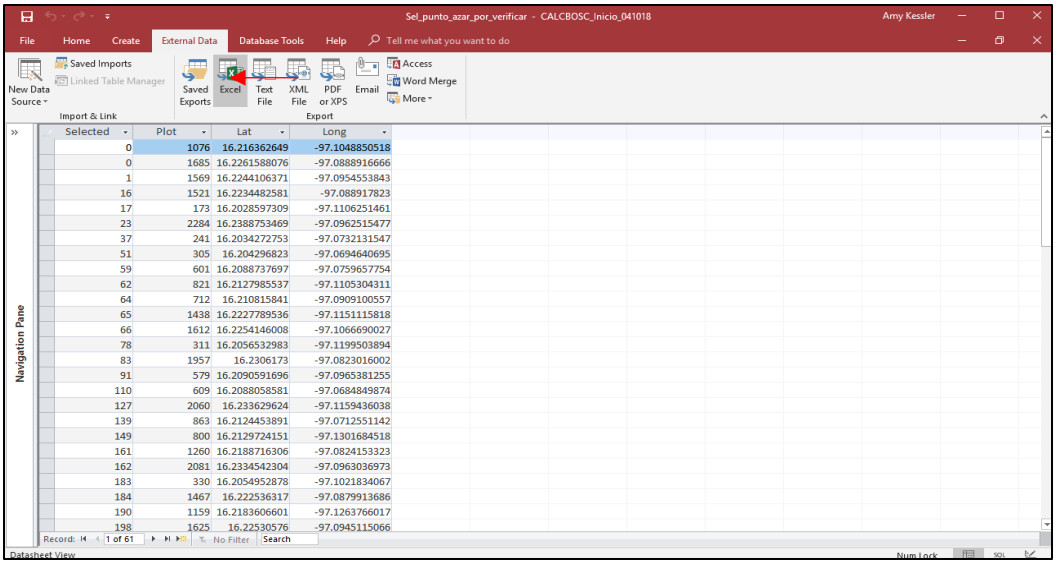


Figure 72. Exporting Plot Order Table

1.3 Next, select where you'd like to save the document and name the file something you'll remember, and click [OK]. You do not need to save the steps.

1.4 After closing the table, to return to the list in the same order, click [Vista]; do not rerun the command by selecting [Seleccionar Parcelas al Azar para Verificación] as that will put the list of plots in a new random order.

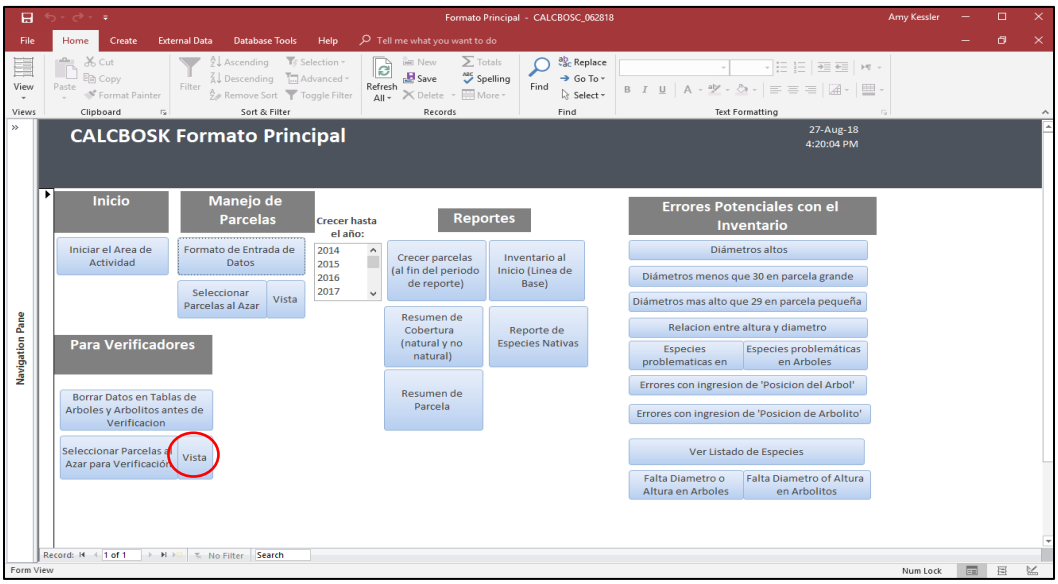


Figure 73. View List of Plots in Random Order

2. Create a Verifier Version

The verifier needs to have two versions of CALCBOSK to complete sequential sampling. The verifier first needs to download the Project Developer database directly from the project's APX website. To create the second version, the verifier should make a copy of the Project Developer version and label it as the Verifier Version.

In the Verifier Version on the [Formato Principal], under [Solo para Verificadores] the verifier should press the button that says [Borrar Datos en Tablas de Arboles y Arbolitos antes de Verificacion]. This will delete the Project Developer data for the trees in each plot but will not delete the entries for the plots. This allows the verifier to enter the verifier data for the trees for each selected plot for sequential sampling.

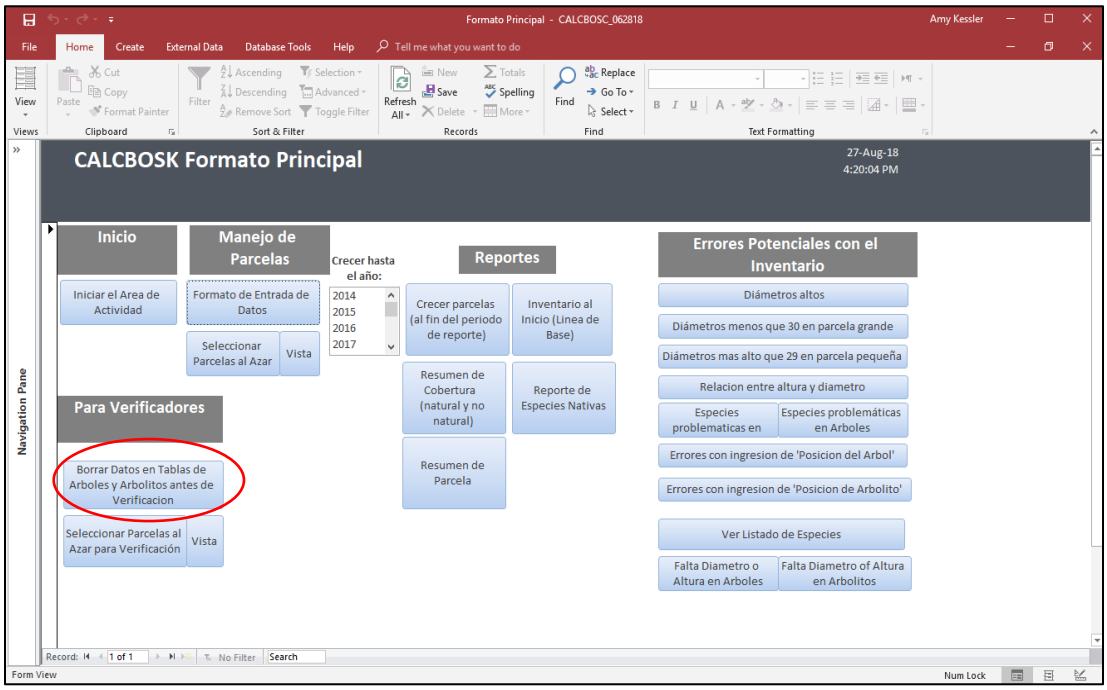


Figure 74. Delete Project Data from Verifier Version

3. Collect data from the field

As noted above, the verifier does not need to measure each plot in the order selected by CALCBOSK in Step 1, but the verifier does need to enter the data into CALCBOSK in that order.

3.1 When in the field, the verifier needs to collect the following data for each tree for each plot selected for sequential sampling:

i. [Número de Arbol] enter the number of the tree (1-X)

ii. [Especie] enter the species code for each tree on the plot (species code found in the Species List found in the dashboard)

iii. [Diametro] enter the Diameter at Breast Height (DBH) to the nearest centimeter, or as appropriate for particular species guidance.

iv. [Altura] enter the total height (from base of tree to top) to the nearest meter

v. [Vigor] enter the vigor rating (1-5) for each tree

vi. [Def Rollizo] enter the defect estimate (0-100%) for the bottom third of the tree. This is the area of biomass missing from the tree.

vii. [Def Superior] enter the defect estimate (0-100%) for the middle third of the tree. This is the area of biomass missing from the tree.

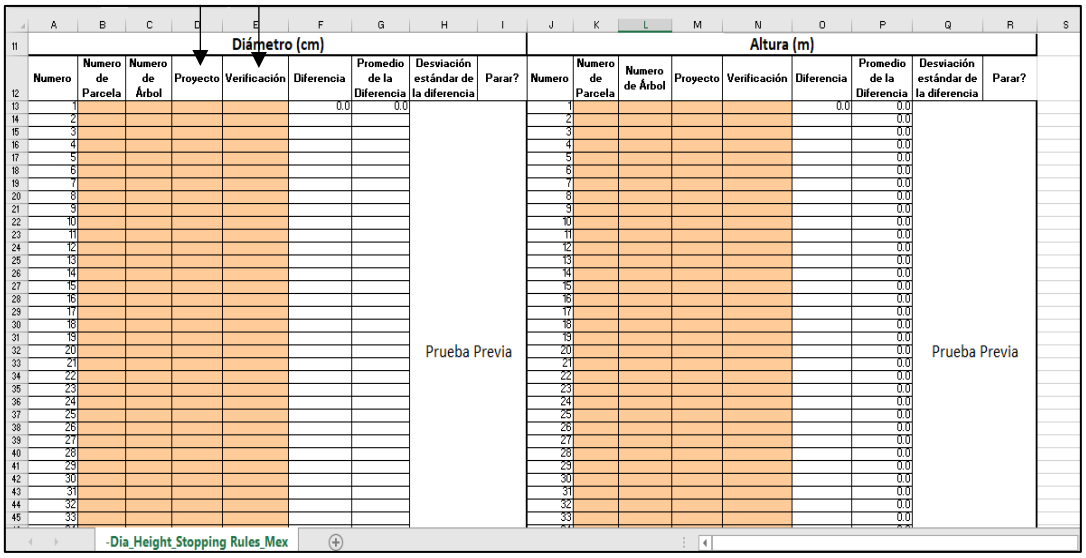
viii. [Def Ramas] enter the defect estimate (0-100%) for the top third of the tree. This is the area of biomass missing from the tree.

3.2 In-and-Out Trees: In addition, the verifier should pay close attention to note that the trees are included in the correct plot (small or large) as this has a large impact on the calculation of CO_2/ha. The MFP Verification Guidance states the considerations for in-and-out trees to account for growth of trees between the time the Project Developer conducting the inventory and the time the verifier is out in the field measuring the trees.

4. Diameter and Height Sequential Sampling

After collecting data from a minimum of 40 trees, the verifier should check if the data meet the stopping point for heights and diameters. The verifier will need the Diameter and Height Sequential Sampling Worksheet to confirm.

4.1 For each of the 40 trees, the verifier will need to enter the diameter (cm) from the Project Developer's CALCBOSK into the column marked [Proyecto] and the verifier diameter (cm) into the column marked [Verificación].



Diámetro (cm)								
Numero	Numero de Parcela	Numero de Árbol	Proyecto	Verificación	Diferencia	Promedio de la Diferencia	Desviación estándar de la diferencia	Parar?
1					0.0	0.0	Prueba Previa	

Altura (m)								
Numero	Numero de Parcela	Numero de Árbol	Proyecto	Verificación	Diferencia	Promedio de la Diferencia	Desviación estándar de la diferencia	Parar?
1					0.0	0.0	Prueba Previa	

-Dia_Height_Stopping Rules_Mex

Figure 75. Diameter Sequential Sampling

4.2 After entering the diameter data for at least 40 trees, the verifier can confirm if the data meets the diameter sequential sampling stopping rule.

11	Diameter (cm)									Height (m)								
12	Number	Plot Number	Tree Number	Project	Verification	Difference	Mean of Difference	Standard Deviation of	Stop?	Number	Plot Number	Tree Number	Project	Verification	Difference	Mean of Difference	Standard Deviation of Differenc	Stop?
13	1	1569	1	63.6	62	1.6	1.6			1					0.0	0.0		
14	2	1569	2	57.2	56	1.2	1.4			2						0.0		
15	3	1569	3	52.0	53.6	-1.6	0.4			3						0.0		
16	4	1569	4	52.8	51.9	0.9	0.5			4						0.0		
17	5	1569	5	61.4	63	-1.6	0.1			5						0.0		
18	6	1569	6	42.8	41.7	1.1	0.3			6						0.0		
19	7	1521	1	50.1	50.2	-0.1	0.2			7						0.0		
20	8	1521	2	85.4	85.3	0.1	0.2			8						0.0		
21	9	1521	3	36.0	35	1.0	0.3			9						0.0		
22	10	173	1	68.6	67	1.6	0.4			10						0.0		
23	11	173	2	100.6	99.4	1.2	0.5			11						0.0		
24	12	173	3	58.1	57.3	0.8	0.5			12						0.0		
25	13	2284	1	73.0	72.5	0.5	0.5			13						0.0		
26	14	2284	2	65.5	66	-0.5	0.4			14						0.0		
27	15	2284	3	69.6	70	-0.4	0.4			15						0.0		
28	16	2284	4	37.6	36.4	1.2	0.4			16						0.0		
29	17	2284	5	38.9	39	-0.1	0.4			17						0.0		
30	18	241	1	47.4	47	0.4	0.4			18						0.0		
31	19	241	2	31.3	32.8	-1.5	0.3			19						0.0		
32	20	241	3	44.6	44	0.6	0.3	Pre-testing		20						0.0	Pre-testing	
33	21	241	4	40.0	39.2	0.8	0.3			21						0.0		
34	22	241	5	84.9	86	-1.1	0.3			22						0.0		
35	23	241	6	30.1	29.5	0.6	0.3			23						0.0		
36	24	305	1	51.5	50	1.5	0.3			24						0.0		
37	25	305	2	36.4	34	2.4	0.4			25						0.0		
38	26	305	3	52.9	52	0.9	0.4			26						0.0		
39	27	305	4	62.4	61.7	0.7	0.4			27						0.0		
40	28	305	5	76.8	74	2.8	0.5			28						0.0		
41	29	305	6	32.8	31	1.8	0.6			29						0.0		
42	30	305	7	32.8	33	-0.2	0.6			30						0.0		
43	31	305	8	59.7	60	-0.3	0.5			31						0.0		
44	32	305	9	66.6	60	6.6	0.7			32						0.0		
45	33	305	10	32.7	31.5	1.2	0.7			33						0.0		
46	34	305	11	55.0	55	0.0	0.7			34						0.0		
47	35	305	12	40.2	41	-0.8	0.7			35						0.0		
48	36	601	1	65.8	63	2.8	0.7			36						0.0		
49	37	601	2	31.1	32	-0.9	0.7			37						0.0		
50	38	601	3	33.6	33	0.6	0.7			38						0.0		
51	39	601	4	44.4	42	2.4	0.7			39						0.0		
52	40	601	5	30.9	32	-1.1	0.7	1.50	Continue	40						0.0		
53	41	601	6	40.6	41	-0.4	0.6	1.49	Continue	41						0.0		
54	42	601	7	52.7	52	0.7	0.7	1.47	Continue	42						0.0		
55	43	601	8	41.6	41.3	0.3	0.6	1.46	Continue	43						0.0		
56	44	601	9	30.6	29.8	0.8	0.646	1.44	Continue	44						0.0		
57	45	601	10	47.6	47.0	0.5	0.644	1.42	Continue	45						0.0		
58	46	601	11	36.7	36.5	0.2	0.635	1.41	Stop	46						0.0		
59	47	601	12	38.6	38.5	0.1	0.624	1.39	Stop	47						0.0		
60	48									48						0.0		
61	49									49						0.0		

Figure 76. Confirming the Diameter Sequential Sampling Stopping Rule

4.3 The verifier will need to repeat steps a & b for the height measurements, entering the Project Developer and verifier height (m) data into the appropriate columns under Height, to confirm if the height data meets the sequential sampling stopping rule after a minimum of 40 trees.

4.4 If either the diameter and/or height measurements meet the stopping rule, the verifier can stop measuring the diameters and/or heights of additional trees. Instead, the verifier can use the Project Developer data for the diameters and/heights when entering the data for the CO_2/Ha Sequential Sampling. The verifier will need to continue collecting the other data points for each tree as listed above in Step 3.

5. CO_2/Ha Sequential Sampling

After collecting data from the field, the verification body should enter the data for the selected plots in the Verifier Version of CALCBOSK.

5.1 The verifier will need to use the [Formato de Entrada de Datos], select the desired plot, and then enter the data for the large trees and small trees following the guidance in the Developing an Inventory section. The general plot data does not need to be updated by the verifier.

At the end of each day in the field, the verification body should update the [Formato de Entrada de Datos] with the data for plots measured that day, and

then update the sequential sampling workbooks accordingly. The verifier will need to check the [Resumen de Parcela] Report to locate the tonnes of CO_2 per hectare calculated for each plot.

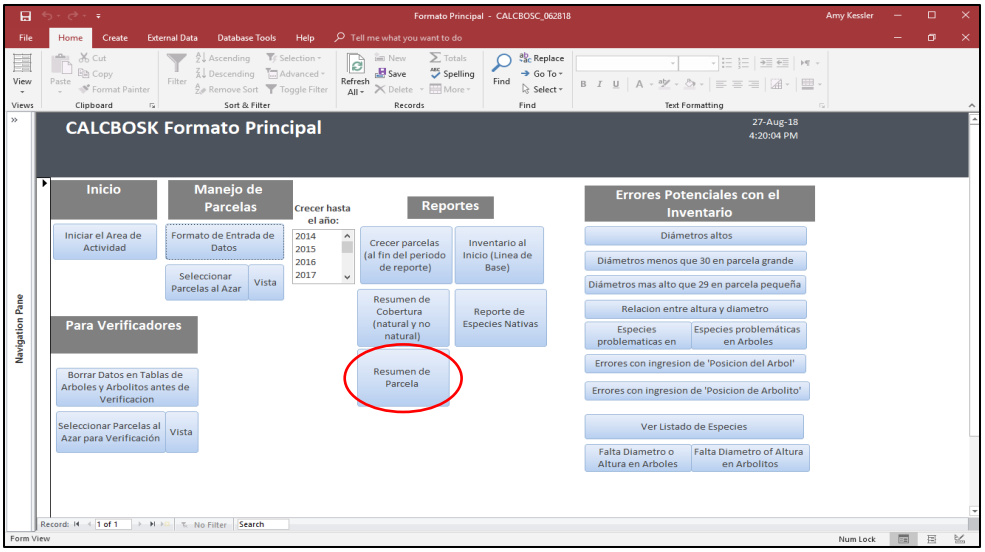


Figure 77. Selecting the Plot Summary

5.2 To navigate to a certain plot, select the plot number in the [Numero de Parcela] (Figure 78).

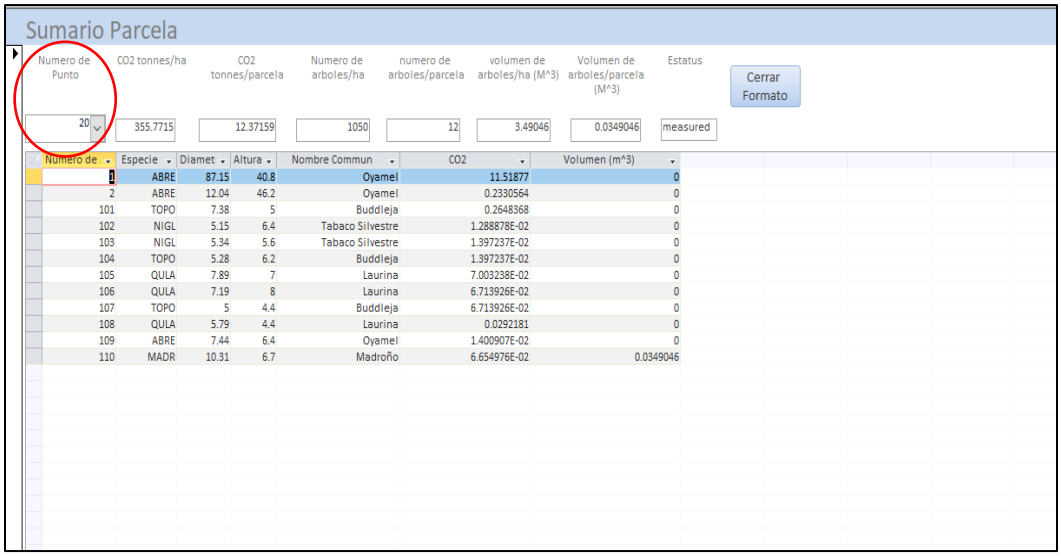


Figure 78. Selecting the Plot Number

5.3 The verifier should then enter the tCO_2/ha (Figure 79) from the Verifier Version and the Project Developer data for each plot selected for sequential sampling into the sequential sampling tool (Figure 80).

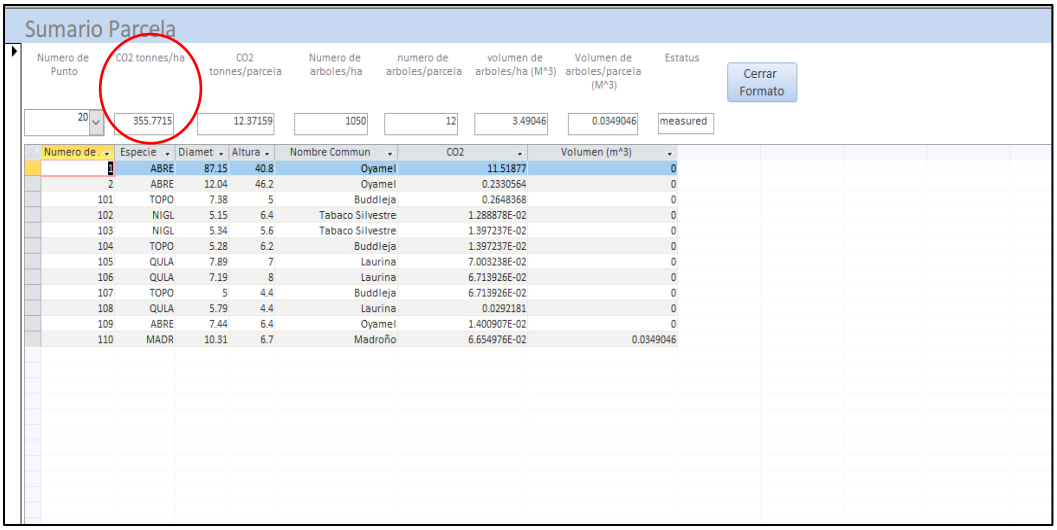


Figure 79. Plot Summary tCO_2 per Hectare

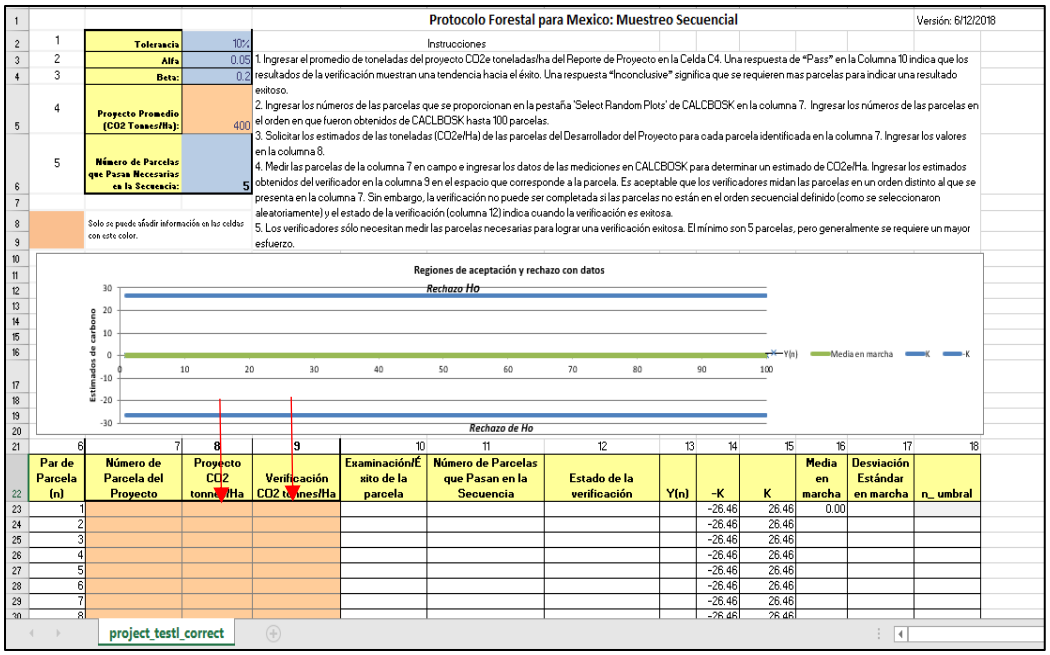


Figure 80. Entering the tCO2/Ha into the Sequential Sampling Worksheet

5.4 The verifier should also modify the average tCO_2/Ha for the Activity Area based on the number found in the end-of-the Reporting Period carbon stocks Report (Figure 81) and enter that value in the CO2/Ha Sequential Sampling Worksheet (Figure 82).

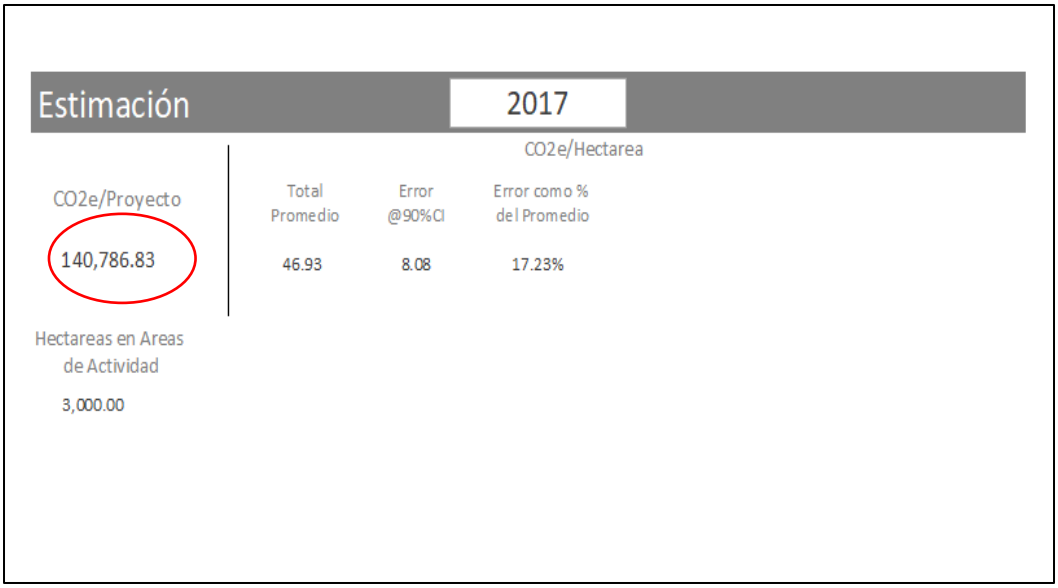


Figure 81. Locating the Average tCO2/Ha for the Activity Area

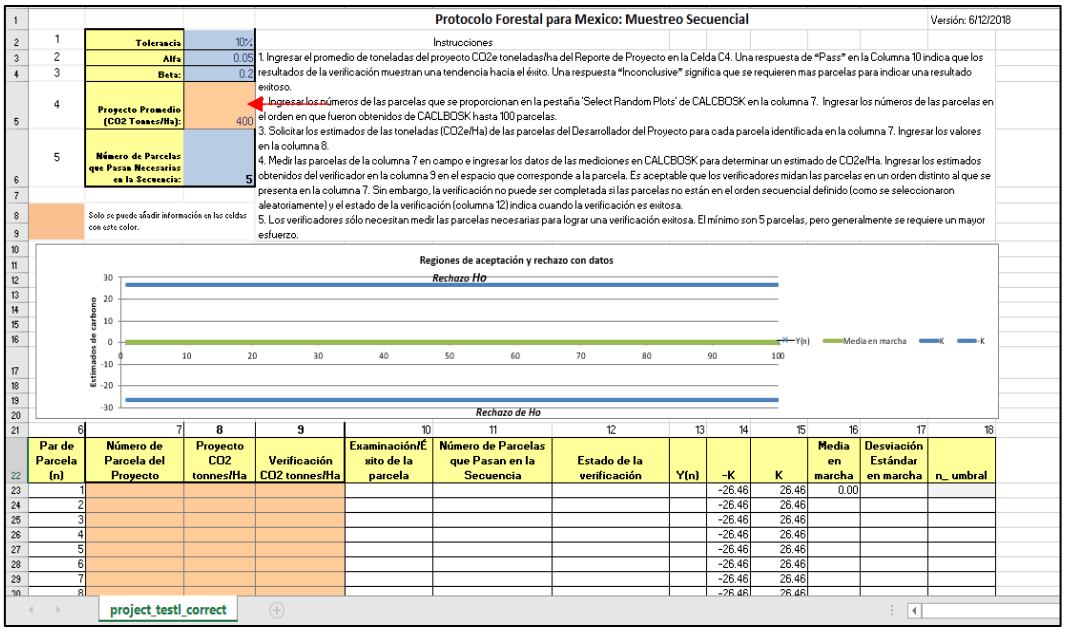
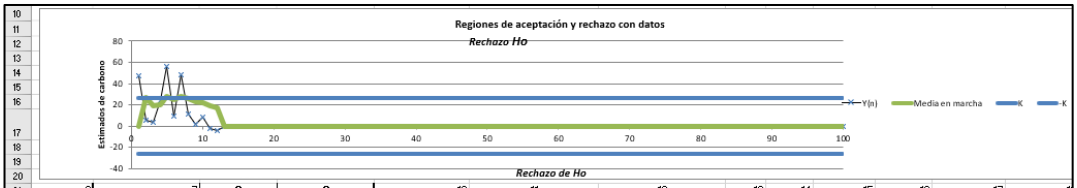


Figure 82. Entering the Average tCO2/Ha into the Sequential Sampling Workbook

5.5 After entering at least 5 plots, the verifier may check to see if the data meets the stopping rules for the tCO2/Ha Sequential Sampling (Figure 83).



	6	7	8	9	10	11	12	13	14	15	16	17	1
22	Par de Parcela (n)	Número de Parcela del Proyecto	Proyecto CO2 tonnes/Ha	Verificación CO2 tonnes/Ha	Examinación/Éxito de la parcela	Número de Parcelas que Pasan en la Secuencia	Estado de la verificación	Y(n)	-K	K	Media en marcha	Desviación Estándar en marcha	n_ umbral
23	1	1569	532.43	545	Pass(H0)	1	Verification not Satisfied	47.43	-26.46	26.46	0.00		
24	2	1521	326.67	320.76	Inconclusive	0	Verification not Satisfied	5.91	-26.46	26.46	26.67	29.36	3.3
25	3	173	780.16	776.45	Pass(H0)	1	Verification not Satisfied	3.71	-26.46	26.46	19.02	24.63	2.3
26	4	2284	602.7692	578.32	Pass(H0)	2	Verification not Satisfied	24.45	-26.46	26.46	20.37	20.29	1.5
27	5	241	586.6357	530.22	Inconclusive(H1)	0	Verification not Satisfied	56.42	-26.46	26.46	27.58	23.85	2.2
28	6	305	933.77	924	Pass(H0)	1	Verification not Satisfied	9.77	-26.46	26.46	24.61	22.53	1.9
29	7	601	382.63	334	Inconclusive(H1)	0	Verification not Satisfied	48.63	-26.46	26.46	28.04	22.49	1.9
30	8	821	600.9979	589.34	Pass(H0)	1	Verification not Satisfied	11.66	-26.46	26.46	26.00	21.61	1.8
31	9	712	724.2626	723	Pass(H0)	2	Verification not Satisfied	1.263	-26.46	26.46	23.25	21.83	1.8
32	10	1438	448.3335	440	Pass(H0)	3	Verification not Satisfied	8.334	-26.46	26.46	21.76	21.11	1.7
33	11	1612	749.4362	752	Pass(H0)	4	Verification not Satisfied	-2.56	-26.46	26.46	19.55	21.33	1.7
34	12	311	169.706	174	Pass(H0)	5	Verification Successful	-4.29	-26.46	26.46	17.56	21.47	1.7
35	13	1957							-26.46	26.46			
36	14	579							-26.46	26.46			
37	15	609							-26.46	26.46			
38	16	2060							-26.46	26.46			
39	17	863							-26.46	26.46			

Figure 83. Meeting the Stopping Rule for the tCO2/Ha Sequential Sampling

5.6 If after 5 plots, the data does not meet the stopping rule, the verifier must continue sampling additional plots and entering the plot information according to the random order selected by CALCBOSK or determine that the inventory is not sufficient to pass sequential sampling.

XV. Verifying the Project Developer's CALCBOSK

For all verifications (on-site or desk), the verifier must import the project data from the Project Developer version of CALCBOSK into a clean version of CALCBOSK. The verifier should request a separate clean version of CALCBOSK from the Reserve in order to complete this step. This allows the verifier to confirm that the outputs are the same as the Project Developer's and thus that the Project Developer did not tamper with CALCBOSK's coding.

The verifier should always first confirm with the Reserve to receive the correct clean version of CALCBOSK. The verifier will then import the following tables from the Project Developer version into the clean version:

1. [Arboles]
2. [Arbolitos]
3. [Cabecera]

1. Check for Tables Arboles, Arbolitos y Cabecera:

First check that there are no existing tables for [Arboles], [Arbolitos] and [Cabecera] in the clean version of CALCBOSK. If there are, delete the existing three tables from the clean version of CALCBOSK (not the Project Developer version) by right clicking on the table and clicking [Delete].

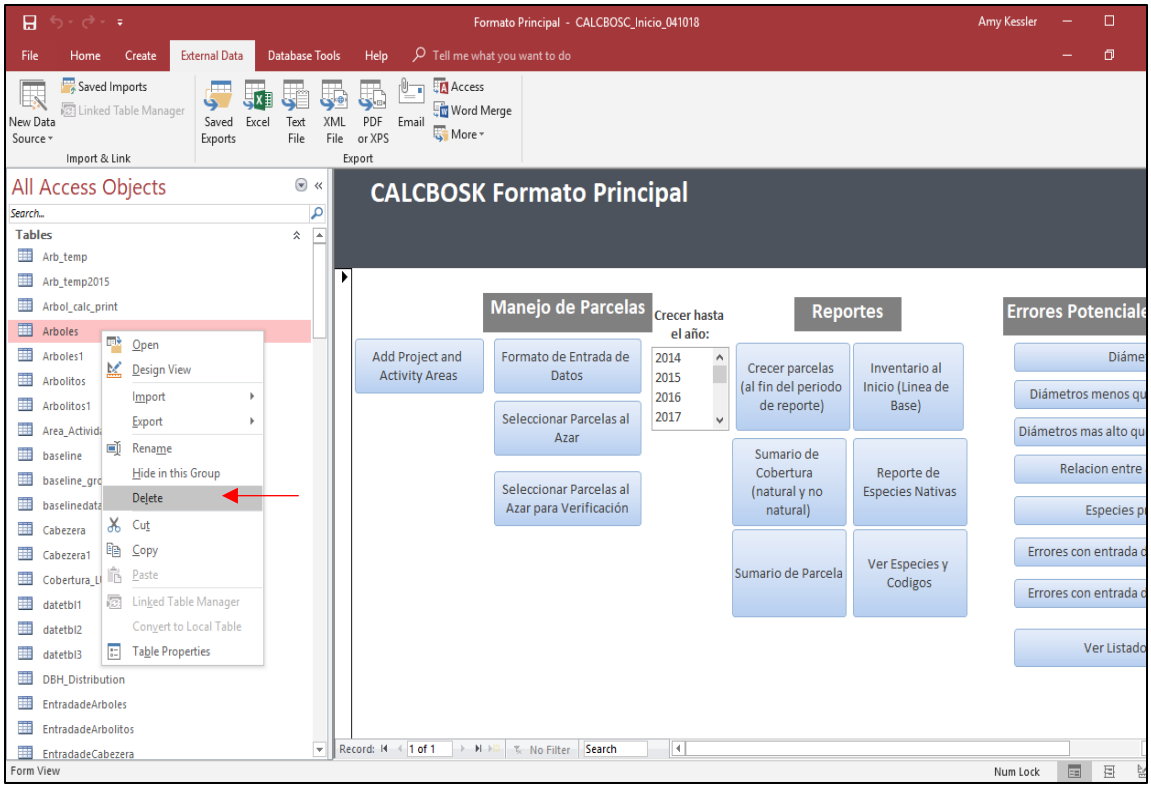


Figure 84. Deleting Existing Tables

2. Import Tables

In order to import the tables from the Project Developer version, the verifier will need to go to [New Data Source] → [From Database], → [Access].

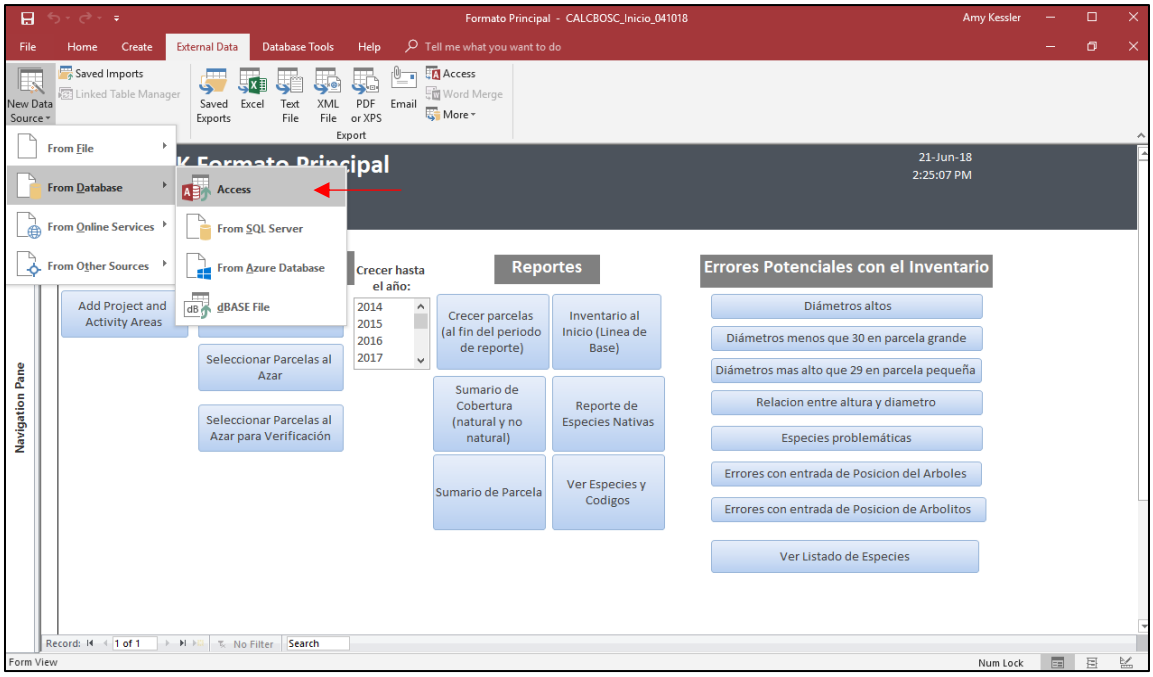


Figure 85. Importing a Table from another Access Database

3. Locate Tables

Another screen will then pop up to allow the verifier to locate the correct tables from the Project Developer version of CALCBOSK.

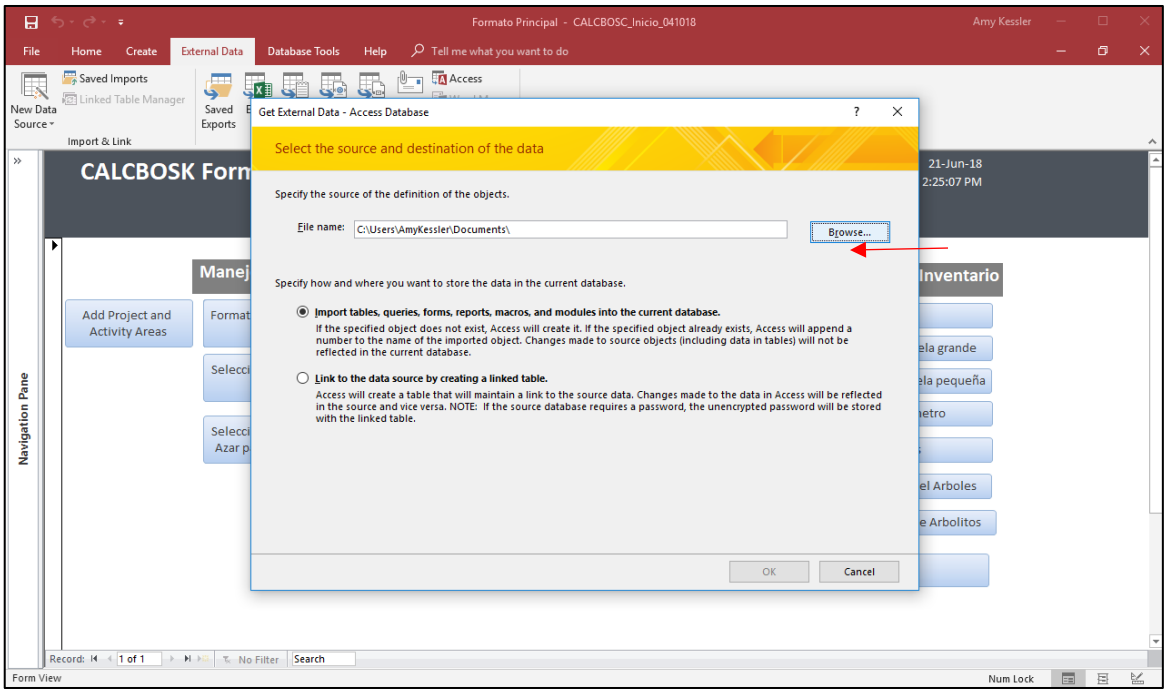


Figure 86. Locate Table to Import

4. Select Tables

After locating the correct CALCBOSK, a screen will popup asking the verifier to select the desired tables to import. Select: [Arboles], [Arbolitos] and [Cabecera], then select [OK].

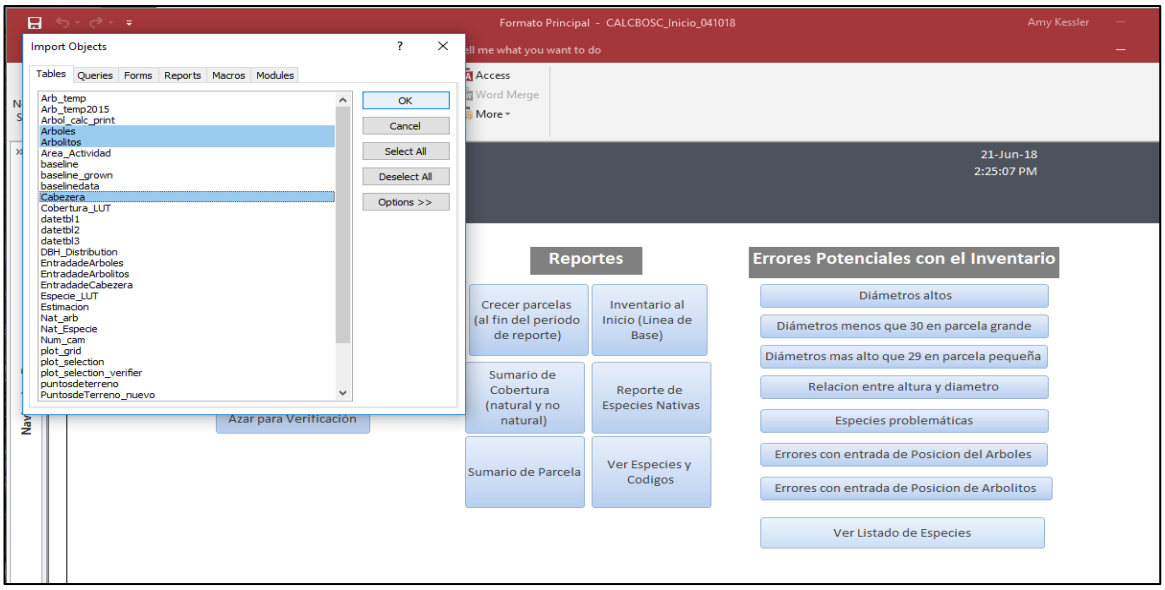


Figure 87. Selecting Tables to Import

The following popup will ask if you'd like to save the steps; you can leave the box unchecked (do not save steps) and click [Close].

The verifier should now see the three newly imported tables listed in the clean version of CALCBOSK; check to make sure the tables match those from the Project Developer version and that the names of the tables match exactly.

5. Add Activity Area

The verifier will then need to [Add Project and Activity Areas] to the clean version of CALCBOSK.

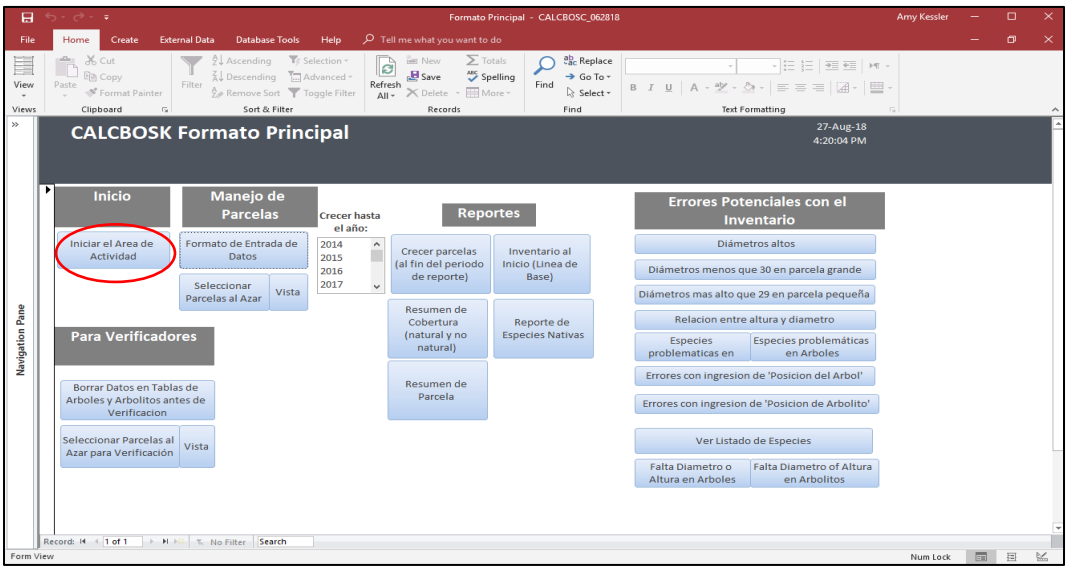


Figure 88. Add Project and Activity Areas

6. Add Project Information

In the following form, enter the project information for the number of hectares and start date for the Activity Area.

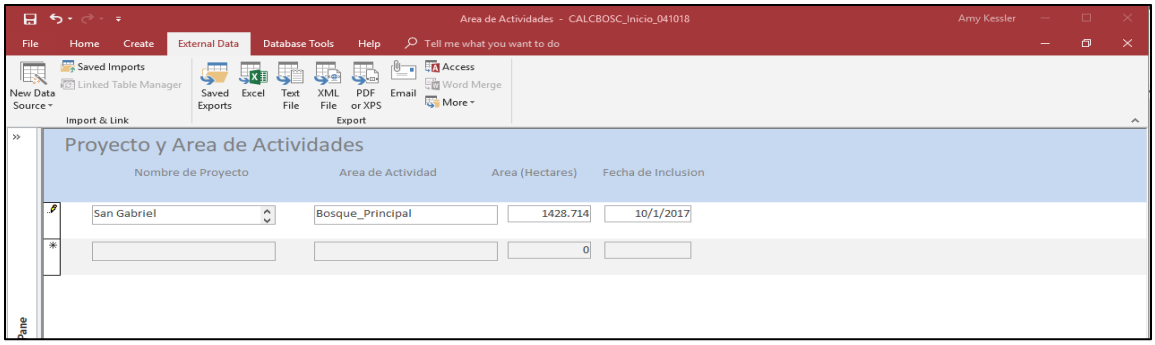


Figure 89. Add Project and Activity Area Information

Then close the form by selecting the [X] in the upper right corner (the bottom "X", not the top "X").

The verifier can then run the reports for Baseline, end-of-the Reporting Period carbon stocks, and the Native Species Report to confirm that the outputs are equal to the Project Developer version. This confirms that the Project Developer did not alter the CALCBOSK code.

XVI. Printing and Exporting Reports

After generating a report, the user may print reports to a printer or as a PDF, or export reports an excel document.

1. Print reports to printer or PDF:
Select [Print] in the upper left corner, then select the printer or select [Adobe PDF] to create a PDF document and select [Ok] (Figure 90).

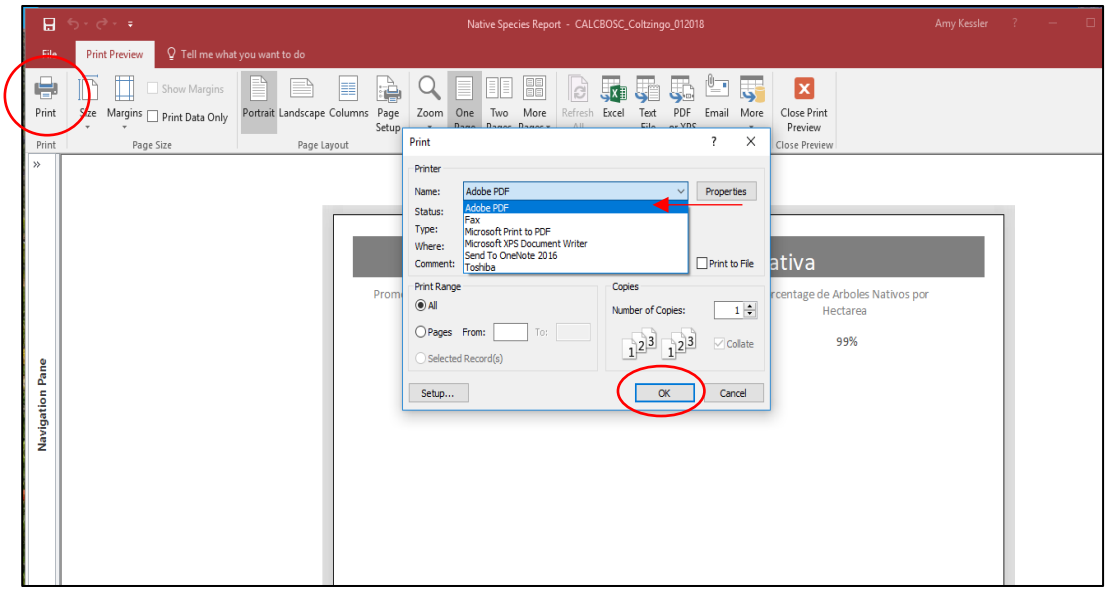


Figure 90. Print Report

2. Export Report:
In the control panel for the report, select [Excel] (Figure 91). The following screen will prompt you to specify the destination of the excel document once exported, then click [Ok].

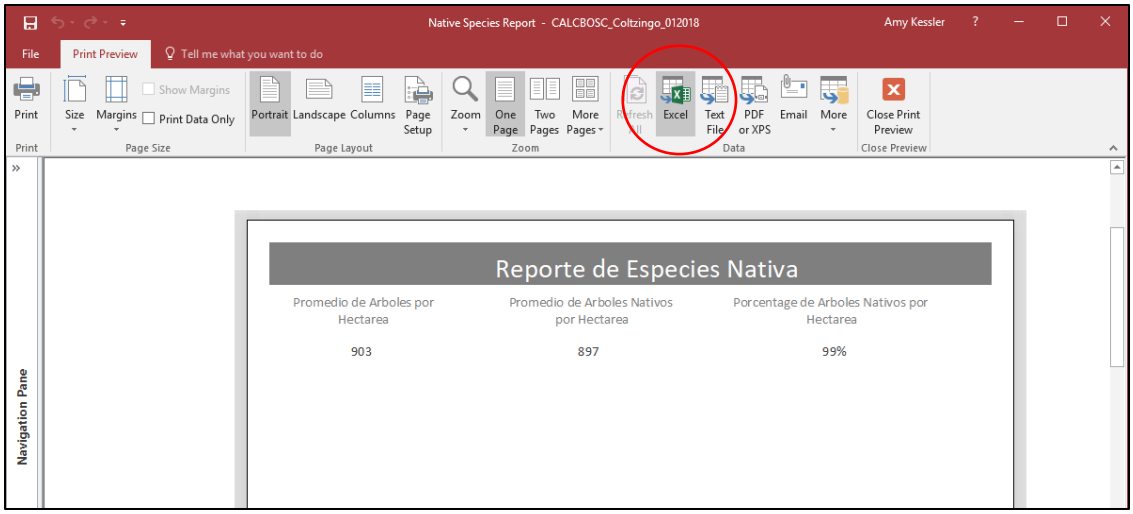


Figure 91. Export Report as an Excel

Appendix 1. Selection of Allometric Equations

For each species included in CALCBOSK, the Reserve identifies the appropriate allometric equation. The following steps outline the selection process.

1. The Forest Owner/Project Developer identifies the species by its common and scientific name. The Forest Owner/Project Developer is responsible for the accuracy of the species identification.
2. Once the scientific name is identified, the Forest Owner/Project Developer should send a list of the species located in the Forest Project. The Reserve then searches for the appropriate allometric equations on the following website developed by CONAFOR: AloMéxico – Modelos Alométricos de México (http://mrv.cnf.gob.mx/modelosalometricos/). The page includes species for all of Mexico.
3. If the Reserve cannot locate the species in that database, the Reserve searches the following website: GlobAllomeTree (http://www.globallometree.org). This site includes species from all over the world.
4. Species equations are then selected following the below process:
   - 4.1 Equation that includes the same species and genus.
   - 4.2 If none are found that meets that criteria, then an equation that includes the same genus but from a distinct species.
   - 4.3 If none are found that meets that criteria, then an equation that is of the same family, but from a different genus and species.
   - 4.4 If none are found that meets that criteria, then a general IPCC equation is used.

5 If a species has multiple equations then, the following criteria are applied:
   - 5.1 The equation with both diameter and height is selected.
   - 5.2 If only equations with diameter are available, then the equation that is from the corresponding ecosystem is selected.

6 Once the equation is identified, the Reserve runs a model with the diameters and heights to check that the outcome of the equation follows a logical trajectory.