BRITISH COLUMBIA | Ministry of Forests

EForWasteBC
User Guide

Timber Pricing Branch

EForWasteBC – Version 1.5.0
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1. Introduction

This User guide describes the process for using the EForWasteBC application for the purpose of collecting waste assessment information, in accordance with the requirements of the Provincial Logging Residue and Waste Procedures Manual (here on out referred to as the waste manual).

In case of conflict of information between the EForWasteBC User guide and the Waste Manual, the Waste Manual will take precedence.

The EForWasteBC application allows Users to collect field data, generate reports, as well as generate, upload and email survey data files. Survey files generated in the EForWasteBC application are referred to as '.efw' files or '.xml files'. The '.efw' files must be uploaded to the Harvest Residue Compiler (HRC) for compiling, prior to submitting to the Waste System. For information on the general use of the HRC application, reference the HRC User guide. Once compiled data can be submitted to the Waste System through the Electronic Submission Framework (ESF). Within the EForWasteBC application, waste surveyors have the capability to produce '.xml' files for coast region single block populations using the simple random sampling (SRS) method. These files can then be directly uploaded to the waste system via the Electronic Submission Framework (ESF).

EForWasteBC has been designed to collect waste assessment area (WAA) information for interior and coast populations. **In the Interior, survey methods include single block SRS, aggregate SRS, single block ratio and aggregate ratio. For coast populations, only the single block SRS method is permitted for surveying.**

Note: Surveyors must use the most *recent version* of the EForWasteBC application.

2. General EForWasteBC Application Functions

2.1. EForWasteBC System Requirements

EForWasteBC is an application designed specifically for Apple devices such as the fourth generation iPad. Apple devices must use a valid version of IOS (**i**Pad **O**perating **S**ystem), 10.0 or later. The EForWasteBC application is currently not compatible with Android devices.

For general iPad usage including how to review the iPad IOS version, Users can reference Appendix I: iPad Basics at the end of this document.

Important Note: ***The device must be set to 'light' mode, or the application will not function properly.***

2.2. Installing the EForWasteBC Application

Users can download and install the most up-to-date version of EForWasteBC for free from the Apple App Store.

1. Navigate to and select the App Store icon on your device.
2. In the Apple App Store, search for "EForWasteBC" and select 'Get'.
3. The application will download onto your iPad.

Note: *Users unfamiliar with general tools and usage of the iPad can refer to Appendix A: iPad Basics at the end of this document.*

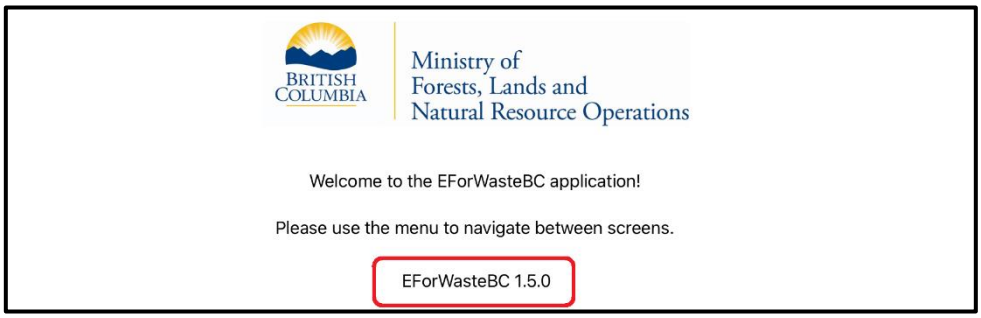
2.3. Updating the EForWasteBC Application

The most recent version of the EForWasteBC application **must** be used when collecting data in the field.

Note: *Before updating the application and to prevent loss of data it is recommended that all data collected in an earlier version of EForWasteBC is saved and backed-up via the email export function.*

To update the EFORWASTE application:

1. Navigate to the Apple App Store and search for EForWasteBC.
2. Find the application and select the 'update' button to initiate the update process.
3. Users can verify the application version, by navigating to the EForWasteBC home screen to review what version number is listed at the bottom of the page.



2.4. Opening the EForWasteBC Application

To open the EForWasteBC application, find and select the EForWasteBC application icon on your iPad.

2.5. EForWasteBC Page Naming

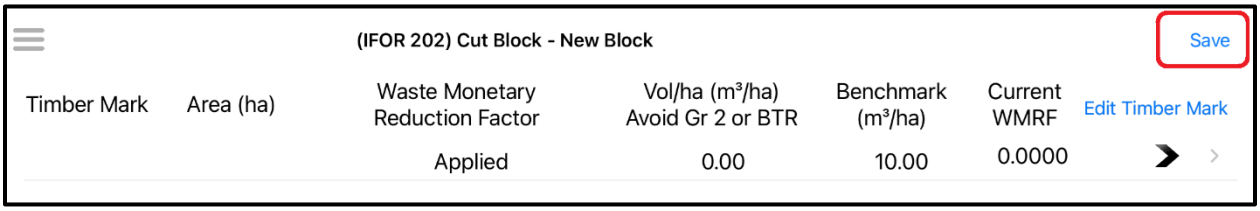
EForWasteBC incorporates page titles to assist in the use of and troubleshooting of the application. Pages are identified by menu topic and then number sequentially as the user progresses through the application, for example:

> '(IFOR 202) Cut block – New Block'
>
> > '(IFOR 203) Stratum'
> >
> > > '(IFOR 204) Plot'

Note: *These screen title names can be referenced to identify at which step a surveyor has progressed in the data collection process when troubleshooting must occur.*

2.6. Save Functionality

To save a new file or any recent changes to a file, select the 'Save' button that is located at the top right corner of each screen. Select the 'Save' button frequently, to reduce the risk of lost data.



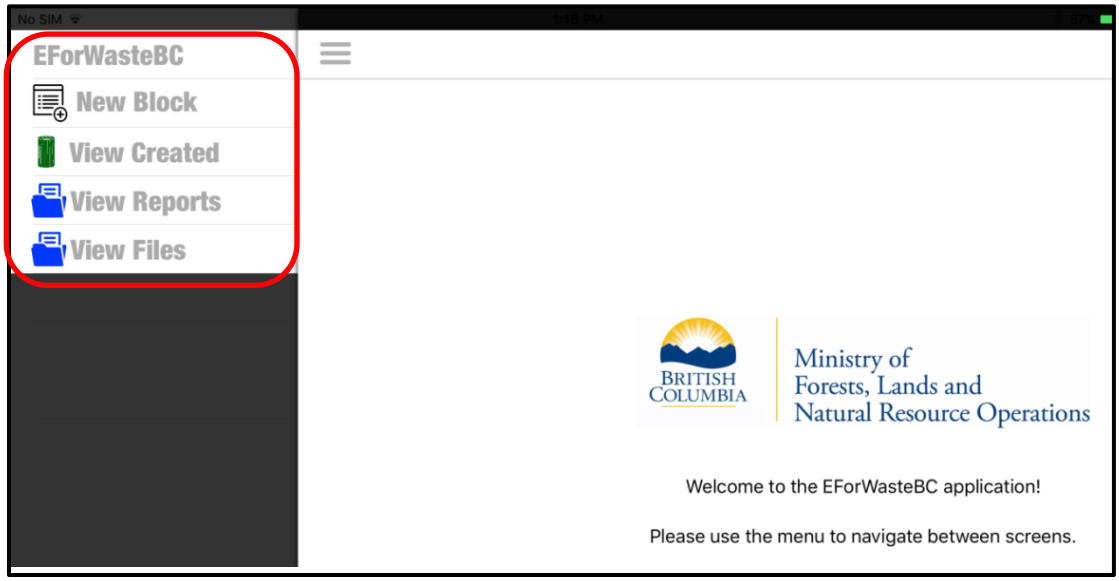
Note: *The EForWasteBC application automatically saves data when a new survey is created or when data fields are populated and changed. However, to minimize the risk of data loss, it is recommended to regularly select the 'save' button throughout the survey process.*

3. Menu Button

The EForWasteBC Menu can be accessed by selecting the EForWasteBC Menu button located in the top left corner of all screens.

From the EForWasteBC menu, Users can select any of the following options:

1. **New Block:** Create a new block to begin entering waste survey data.
2. **View Created:** View and select existing cutblocks.
3. **View Reports:** View and select reports.
4. **View Files:** View and select files for export.



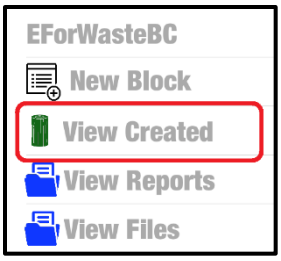
3.1. Opening and Viewing Previously Created files

The 'View Created' button in the EForWasteBC menu allows Users to view and access all existing survey files saved in the iPad application.

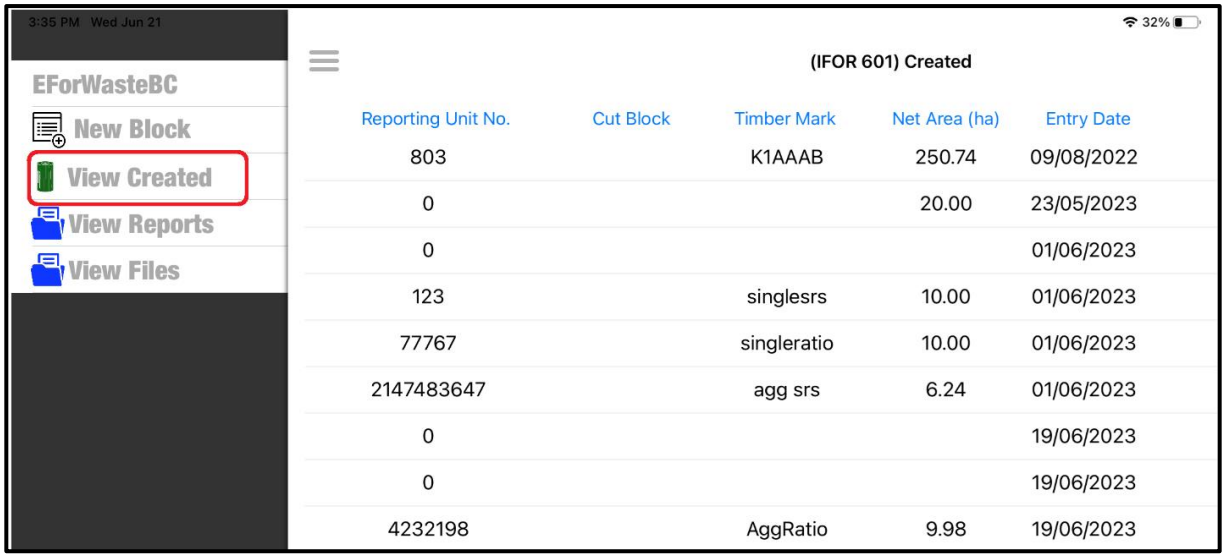
To view and open previously created survey files:

1. Select the EForWasteBC Menu button.

2. Select 'View Created'.



3. All previously created survey files will be listed. Select the desired row to open and view a specific survey file.



Reporting Unit No.	Cut Block	Timber Mark	Net Area (ha)	Entry Date
803		K1AAAB	250.74	09/08/2022
0			20.00	23/05/2023
0				01/06/2023
123		singlesrs	10.00	01/06/2023
77767		singleratio	10.00	01/06/2023
2147483647		agg srs	6.24	01/06/2023
0				19/06/2023
0				19/06/2023
4232198		AggRatio	9.98	19/06/2023

4. Creating a New Survey and Entering Data

When creating a new survey in the interior, Users will have an option to choose between two separate sampling designs: simple random sampling (SRS) or ratio adjustment (Ratio) sampling. The selected sampling method plays a crucial role in establishing the sampling principles used for gathering waste data for the target population, whether the population is a 'single cutblock' or an 'aggregate' of cut blocks.

When creating a new survey on the coast, Users must use simple random sampling as sample method with a target population of ‘single block’. See the Coast Waste Manual for details.

Sampling methods and the target population must be predetermined, prior to commencing field data collection, during the planning stages of the Waste Assessment. It's essential that the survey method employed in EForWasteBC aligns with the chosen survey method and population type for conducting the survey.

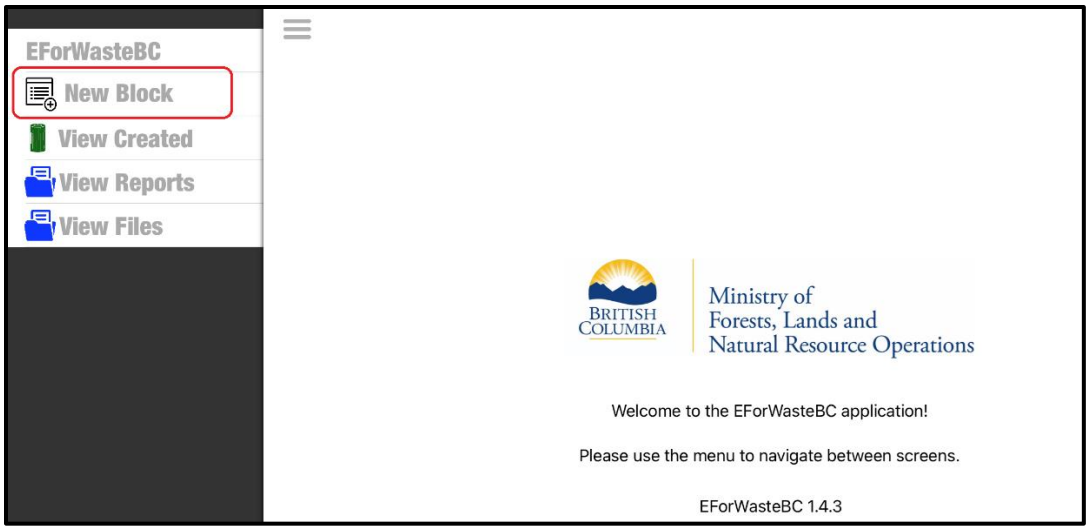
Once field data collection has commenced, survey data cannot be transferred to an alternate survey method or sample design. The system specifically prohibits changes to the survey type once data collection has started. Users can reference the Waste Manual for additional details on Waste Assessment planning, as well as a detailed description of each survey method, sample design and intended use.

The process for creating and entering data varies depending on which sample design is selected and the target sample population.

4.1. Interior — New Survey

To create a new survey and commence residue and waste survey data collection in the interior:

1. Select ‘New Block’ in the dropdown menu located in the top left corner of the EForWasteBC screen.



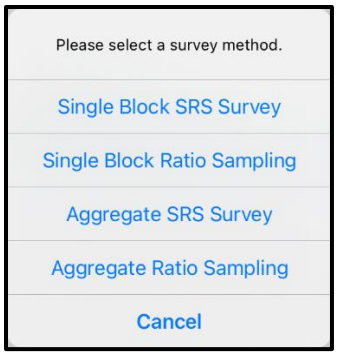
2. When 'New Block' is selected, a pop-up window will appear prompting Users to selected either 'Interior' or 'Coast'. Select 'Interior'.

Note: *See section 4.2 in this guide for specifications on how to create a new survey for coast region populations.*

3. Next, select the applicable survey method:
   a) If the sample population contains only one WAA, the population must be 'single block'. Review which sampling design is planned and select the applicable survey method type:
      - **Single Block SRS Survey** (*Interior and Coast*)
      - **Single Block Ratio Sampling** (*Interior*) or,

   b) If the sample population contains two or more WAA's, the population must be 'aggregate'. Review the Sample Plan created in HRC to ensure the correct sampling method is chosen in EFORWASTE and which sampling design is proposed. Then, select the applicable survey method:
      - **Aggregate SRS Survey** (*Interior*)
      - **Aggregate Ratio Sampling** (*Interior*)

Note: Users must ensure to select the correct sample method. If the selected sample method does not align with the sample method outlined in the aggregate sample plan, the survey will be rejected.



Note: *If the sample population is Aggregate (two or more WAA's) a Sample Plan must be prepared and endorsed by a Forest Professional, prior to commencing field data collection, during the planning stages of the Waste Assessment.*

Once the survey method and target population have been determined and selected, the survey file is created. Users are required to input data into all fields on the 'IFOR202' screen, commonly known as the block header screen.

For Single block populations, the information entered on the 'IFOR202' screen is automatically populated onto the 'iFOR204 Plot screen' (the plot card) whenever a new plot is generated.

In the case of aggregate populations, the details provided on the 'IFOR202' screen are also automatically transferred to the 'iFOR204 Plot screen' when a new plot is created. However, it is important to note that for aggregate populations, users need to manually enter the license CP and block name in each corresponding plot card.

4.1.1. Survey Methods

This section serves to provide a brief description of the survey methods that users may choose based on the sample population and design. For more complete details, Users are encouraged to reference the Waste manual.

- **Single Block SRS Survey** – The Simple Random Selection (SRS) survey method requires the establishment and measurement of all plots within an individual block. (Can be used in Interior or Coast regions).

- **Single Block Ratio Sample survey –** The Ratio Sample Survey method requires the establishment and estimation of plot volumes with measurements of randomly selected plots, within an individual block. (Can be utilized in the Interior).

- **Aggregate SRS Survey** – The Aggregate SRS method requires the establishment and measurement of all predetermined number of plots within an aggregated sample population (group of cutblocks). The sample population is sampled as one unit. (Can be utilized in the

Interior).

- **Aggregate Ratio Sampling –** The Aggregate Ratio method requires the establishment of prediction plots and randomly selected measure plots within an aggregated sample population. (Can be utilized in the Interior).

Note: *The sample design must be predetermined, prior to commencing field data collection, during the planning stages of the Waste Assessment.*

4.1.1.1 Creating a Single Block SRS Survey

Users can create a 'Single Block SRS Survey' where Waste Assessment information can be collected on an individual WAA.

Note: *Simple random sampling uses only measure plots. Within the waste assessment area, a predetermined number of sample plots are established, measured, and averaged to determine an estimate of volume for the population.*

1. Select the 'menu' button at the top left corner of the screen and select 'New Block', select either 'Interior' or 'Coast'.

2. Select 'Single Block SRS Survey'.

3. Populate the Header information on the '(IFOR202) Cut Block – New Block Single Block SRS Survey' screen.

Note: *In Single Block SRS surveys, the license, CP, and block name is entered on the 'IFOR202' screen (the block header screen). The system then automatically populates these details onto the 'iFOR204 Plot screen' (the plot card) when a new plot is created.*

4.1.1.2 Creating a Single Block Ratio Sampling Survey

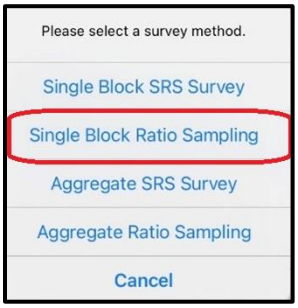
In a 'Single Block Ratio Sampling Survey', Users can collect Waste Assessment information on an individual WAA using prediction and measure plots.

The number of prediction plots and measure plots for a Single Block Ratio Sampling Survey must be as per 'Plot Planning Tables for Single Populations' outlined in the Waste Manual.

Note: *In ratio adjustment sampling, a predetermined number of prediction plots are established, and a random selection of these plots are measured. After a prediction is entered into EForWasteBC, the software randomly determines whether the plot will require measurements. This system can increase sampling efficiency, while maintaining a low sampling error.*

1. Select the menu button at the top left corner of the screen and select 'New Block', select either Interior or Coastal.

2. Select Single Block Ratio Survey.



3. Populate the Header information on the '(IFOR202) Cut Block – New Block Single Block Ratio Survey' screen.

Note: *In Single Block SRS surveys, the license, CP, and block name is entered on the 'IFOR202' screen (the block header screen). The system then automatically populates these details onto the 'iFOR204 Plot screen' (the plot card) when a new plot is created.*

4.1.1.3 Creating an Aggregate SRS Survey

Aggregate SRS surveys must only be selected where an Aggregate Sample Plan has been developed and endorsed by a Forest Professional, as per the specifications of the Waste manual.

Users can create an Aggregate SRS Survey where Waste Assessment information can be collected on an

aggregated sample population (group of cutblocks). Measurement of a predetermined number of samples is established. The sample population is sampled as one unit.

Note: *Simple random sampling uses only measure plots. Within the waste assessment area, a predetermined number of sample plots are established, measured, and averaged to determine an estimate of volume for the population.*

To create an aggregate population, all blocks and plots are entered as one block.

1. Select the menu button at the top left corner of the screen and select 'New Block', select 'Interior'.

2. Select 'Aggregate SRS Survey'.

3. Populate the Header information on the '(IFOR202) Cut Block – New Block Aggregate SRS Survey' screen.

Note: *The Aggregate SRS survey requires the licence, CP (if applicable) and block name associated with each plot to be recorded when entering plot data on the 'iFOR204 Plot screen' (the plot card).*

4.1.1.4 Creating an Aggregate Ratio Sampling Survey

Aggregate Ratio Sampling surveys must only be selected where an Aggregate Sample Plan has been developed and endorsed by a Forest Professional, as per the specifications of the Waste manual.

Users can create an Aggregate Ratio survey where Waste Assessment information can be collected on an aggregated sample population (group of cutblocks). Measurement of a predetermined number of samples is established as per 'Plot Planning Tables for aggregate Populations' outlined in the Waste Manual and as per the Aggregate Sample Plan.

Note: *In ratio adjustment sampling, a predetermined number of prediction plots are established, and a random selection of these plots are measured. After a prediction is entered into EForWasteBC, the software randomly determines whether the plot will require measurements. This system can increase sampling efficiency, while maintaining a low sampling error.*

To create an aggregate ratio population, all blocks and plots are entered as one EForWasteBC block in the application.

1. Select the menu button at the top left corner of the screen and select 'New Block', select either Interior.

2. Select Aggregate Ratio Survey.

3. Populate the Header information on the Cut Block Screen (IFOR202).

Note: *The Aggregate Ratio survey requires the licence, CP and block name associated with each plot to be entered when entering plot data on the 'iFOR204 Plot screen' (the plot card).*

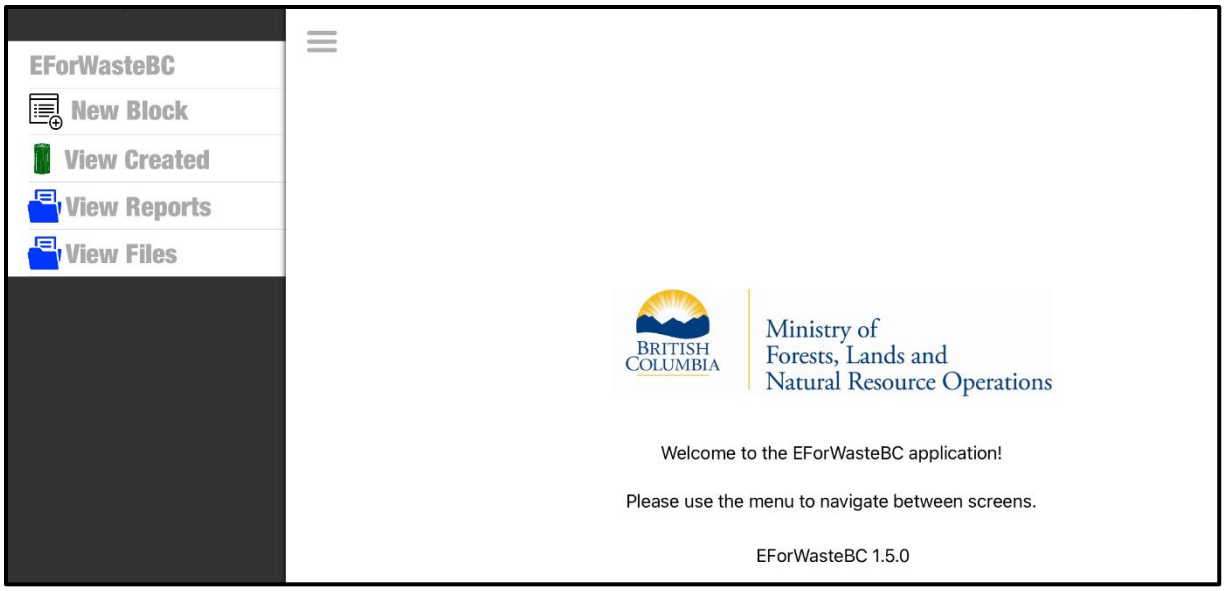
4.2. Coast — New Survey

The coastal sampling system utilizes the Simple Random Selection (SRS) survey method. This approach involves establishing and measuring a predetermined number of sample plots to determine volume estimates. Reference the coast waste manual to determine how many plots are required.

4.2.1. Creating a Single Block SRS Survey

To create a new survey for coast populations and to commence residue and waste survey data collection:

1. Select 'New Block' in the dropdown menu located in the top left corner of the EForWasteBC screen.



2. When 'New Block' is selected, a pop-up window will appear prompting Users to selected 'Coast'.

3. Select **Single Block SRS Survey**:

4. Populate the header information on the '(IFOR202) Cut Block' screen.

4.3. Data Description and Requirements

This section is included to provide Users a description of each field, required throughout each stage of the data collection process. This section is organized by data collection screen names to address the distinction between each stage of the data collection process. While required information remains largely consistent across both the Interior and Coast, specific variations in fields between the Interior and Coast will be indicated within the 'field name' column. Users are encouraged to reference the following sections when entering data, for data description and data requirements.

Where the 'Required for Single Block' and/or the 'Required for Aggregate' columns have an asterisk (indicated as: Yes*, No*, or N/A*), additional notes can be found in the description column. These notes offer further clarification or specific instructions regarding the field's relevance or usage and serves to ensure accurate understanding and application of the required information for each data collection scenario.

4.3.1. Cut Block Screen Details (iFOR202)

The cutblock screen is typically the first screen Users will encounter when creating a new survey or when opening an existing survey. It displays the block identifier details, essential for the survey and sample population. Additionally, the cut block screen depicts necessary information that is required for upload into HRC and/or for merging .efw files.

Field Name	Required for Single Block?	Required for Aggregate?	Description of Data and Validation Rules
Reporting Unit No.	Yes	Yes*	Waste system Reporting Unit, up to twelve numbers.
			** For Interior aggregate populations containing multiple Reporting Unit numbers, enter only one.*
Cutting Permit	Yes *[1]	N/A *[2]	Cutting Permit number, up to three characters. Must match FTA.
			**1: Required unless no CP exists in FTA.* **2: For aggregate populations, the CP may be entered in the Plot card — Unless no CP exists.*
Cut block	Yes	N/A *	Block name, up to ten characters. Must match FTA.
			** For aggregate populations, the cutblock ID must be entered in the Plot card.*
Licence	Yes	N/A *	Tenure number, up to ten characters. Must match FTA.
			** For aggregate populations Licence must be entered in the Plot card.*
Location	Optional	N/A	See Waste manual for description.

Logged From	Yes	N/A	The year harvest commenced required for single block populations. For Aggregate Populations data must be accurately input in the aggregate sample plan in HRC.
Logged To	Yes	N/A	The year harvest completed. Must be on or after "Year Logged From". For Aggregate Populations data must be accurately input in the aggregate sample plan in HRC.
Logging Completion Date	Yes	N/A	Refer to Waste Manual for definition. For Aggregate Populations data must be accurately input in the aggregate sample plan in HRC.
Survey Date	Yes	Yes	The date at which the field survey started on a population.
Net Area	Yes	Yes	Area, in hectares, of the total net area of all stratums available for sampling. The net area for the whole population. The total net area of all the WAA's for aggregate populations .
NP/NF area	Optional	Optional	Area, in hectares of the total area of road surface or non-productive area for the population.
Site Code (Interior)	Yes	Yes*	Quantifies, in m3/ha avoidable waste thresholds. Enter the correct site code for the cutblock: DB - Dry Belt (4 m3/ha) TZ - Transition (10m3/ha) WB - Wet Belt (20m3/ha)
			**For aggregates populations containing WAA's in multiple Site Codes, enter the site code from the first WAA in the Aggregate Sample Plan.*
Return Number	Yes	Yes	Identifies the annual survey number of the waste surveyor.
Surveyor Licence	Yes*	Yes*	Identifies the certificate number of the waste surveyor responsible for the establishment of the plot.
			*Surveyors without a certificate number use: Northern Forest Region = WANI Southern Forest Region = WASI Coast Forest Region = WACO
Waste surveyor- Name	Yes*	Yes*	Identifies the name of the waste surveyor responsible for the establishment of the plot. The waste surveyor name indicated on the cutblock screen will auto populate on the plot card.

			**Where multiple surveyors or multiple iPads are on a block, ensure to include each corresponding waste surveyors name on each respective plot card.*
Waste surveyor- Professional Designation	Yes*	Yes*	Identifies the waste surveyors professional designation. **If registered. If the waste surveyor is not a registered forest professional this field can remain blank.*
Waste surveyor- Registration Number	Yes*	Yes*	Identifies the waste surveyors registration number. **If registered. If the waste surveyor is not a registered forest professional this field can remain blank.*
Waste surveyor- Position	Optional	Optional	Position of the Waste Surveyor.
Notes	Optional	Optional	General notes regarding the Waste Survey.
Interior Cedar Maturity (Interior)	Yes	Yes	For interior surveys. Auto populated to "L- Less than 141 years". Editable based on the cedar maturity. Change to "G- Greater than 141 years", if required.
Maturity Code (Coast)	Yes	Yes	For coast surveys. Identifies coast cutblock maturity. Immature: 10cm top DIB Mature: 15cm top DIB
Benchmark (Coast)	Yes	Yes	Relates to coast surveys. Identifies coast waste benchmarks in cubic meters per hectare used for monetary billing of avoidable waste based on harvesting system and maturity. See applicable Waste Manual for details.

4.3.2. Timber Mark Screen Details (IFOR401)

The Timber Mark data screen is accessed by selecting the 'Edit Timber Mark' button, located on the top right corner of the 'Cut Block' screen. Users can enter Timber Mark information. If there is more than one timber mark within the cutblock, the Waste Surveyor can add or edit both the Primary Timber Mark and Secondary Timber Mark.

On the Timber Mark screen Users can edit fields that are either blank or white with text or numerical values, while grey filled boxes cannot be edited as they contain information from other screens and are locked.

Field Name	Required for Single Block?	Required for Aggregate?	Description of Data and Validation Rules
Timber Mark	Yes	Optional*	Enter the applicable timber mark for the cutblock. ** For aggregate populations containing multiple Timber Marks, enter only one.*
Timber Mark Area	Yes	Optional*	Enter the applicable timber mark Net Area in hectares. ** For aggregate populations enter the timber mark Net Area in hectares for the desired timber mark.*
Waste Monetary Reduction Factor (block)	Optional	Optional	This field can be toggled between**:** **Benchmark applied –** Applies the applicable WMRF factor to the Waste Billing rate. **Benchmark Not applied –** Does not apply the WMRF to the applicable waste billing rate. The Billing rate used in the application will be the unadjusted stumpage rate. Only required when populating the Timber Mark details.
Conifer Sawlog	Optional	Optional	The 12-month average stumpage Rate ($/m3) for Coniferous sawlog grades. Enter the sawlog rate applicable to the timber mark. This information can be obtained from the HBS 'rating' tab. It is calculated in accordance with the waste manual.
Deciduous Sawlog	Optional	Optional	Avoidable deciduous rate ($/m3) for Deciduous species.
Grade 4(5)	Optional	Optional	See Waste Manual for details.
Hembal U	Optional	Optional	Relates to coast surveys. Hembal U Grade rate ($/m3). Reference the coast Waste Manual for details.
X Grade	Optional	Optional	Relates to coast surveys. X Grade rate ($/m3). Reference the coast Waste Manual for details.
Y Grade	Optional	Optional	Relates to coast surveys. Y Grade rate ($/m3). Reference the coast Waste Manual for details.

Note: *Where required and the survey is interior aggregate, Users can populate the timber mark on the timber mark screen with data from the first WAA in Sample Plan.*

4.3.3. Stratum Screen Details (IFOR203)

The Stratum screen enables users to input and modify stratum data as needed.

Users have the option to select either 'standard stratums' or 'standing tree' stratums. With standard stratums, Users can gather data using plot-based methods or percentage estimates plots, while standing tree stratums allow for the collection of data using the 100% scale or percentage estimate method.

The Stratum screens (IFOR 203) provide essential details about each stratum, including the stratum code and size, stratum area in hectares, the required amount of 'measure' and 'prediction' plots for Ratio surveys, and a list of currently existing plots within each stratum.

When creating stratums, reference the Waste manual for specific stratum codes.

Field Name	Required for Single Block?	Required for Aggregate?	Description of Data and Validation Rules
Waste Type	Yes*	Yes*	The FIRST character in the Waste Stratum code starting from the left. Identifies a unique waste type or stratum type. Refer to Waste manual for specific stratum codes.
			**Not required when standing tree stratums are created. When standing tree stratums are created the stratum code is auto populated for the User.*
Harvest Method	Yes*	Yes*	The SECOND character in the Waste Stratum code identifies the method used to harvest the waste type being sampled. This is a descriptive label only and will not cause a separate stratum to be created.
			**Not required when standing tree stratums are created. When standing tree stratums are created the stratum code is populated for the User.*
Assessment/ Size:	Yes*	Yes*	For standard stratums, the assessment size is the THIRD character in the Waste Stratum code identifies the assessment method used.
			**For 'Standing Tree' stratums the Estimate Percent or 100% Scale method must be selected at time of stratum creation. The assessment size field will auto populate on the (IFOR 203) Stratum screen.*
Waste Level	Yes*	Yes*	The FOURTH character in the Waste Stratum code identifies any sub stratification of waste types within a predefined stratum within the waste assessment area.

			**Not required when standing tree stratums are created. When standing tree stratums are created the stratum code is auto populated for the User.*
Area (ha)	Yes	Yes*	The area in hectares of the stratum. A stratum area (ha) cannot be less than 0.01ha. **For aggregate populations, this area must match the final stratum area for the sample blocks in the population.*
# Plots	N/A	N/A	Auto populated from the # of plots created in the stratum.
Prediction Plots	Yes*	Yes*	Identifies the number of prediction plots required in the stratum for Interior Ratio surveys. The number of plots that must be entered. As identified in the 'Sample Plan' for Aggregate populations (under the 'Total Plots for Stratum' field) or, as identified in the 'Plot Planning Tables' in the Waste Manual for Single populations. **Not required for SRS surveys.*
Measure Plots	Yes*	Yes*	Identifies the number of measure plots required in the stratum for Interior Ratio survey. As identified in the 'Sample Plan' for Aggregate populations (under the 'Measure Plots for Stratum' field) or, as identified in the 'Plot Planning Tables' in the Waste Manual for single populations. **Not required for SRS surveys.*
Notes	Optional	Optional	Enter any general notes regarding this Stratum (256 character maximum).

4.3.4. Plot Screen Details (IFOR204)

The plot header information contains all the information required to identify the plot location, size, surveyor, and survey date. The required information varies depending on the type of survey and stratum created. All plot header data entry fields and entry types are indicated below:

Field Name	Required for Single Block?	Required for Aggregate?	Description of Data and Validation Rules
Plot Number	Yes*	Yes*	Identifies the plot number as identified on the waste survey plan. The plot number must match the survey plan.

			**For SRS surveys the plot number is auto populated sequentially and increase each time a new plot is entered. Edit the plot number as required to match the sample plan.* *For Ratio Surveys the plot number is auto populated based off data input on the 'Ratio Sampling Stratum' — Plot prediction popup window.*
Measure %	Yes*	Yes*	Quantifies the percentage of volume within the plot boundaries that has been measured and recorded. See manual for more details.
			For Ratio Surveys – prediction plots (not requiring measurements) the measure % field cannot be edited as the total plot volume is estimated. *For Estimate percent or 100% scale stratum plots the measure % field cannot be estimated.*
Baseline	Optional	Optional	See manual for details.
Shape	Yes	Yes*	Identifies the plot shape. See manual for plot shape codes.
Strip	Optional	Optional	See manual for details.
Size	Yes	Yes	Auto populated. Identifies the plot size in m2 when a plot-based stratum method is used.
Return #	Yes	Yes	Identifies the return number of the waste surveyor responsible for the establishment of the plot. Auto populated from Return number input on the cutblock screen.
Surveyor Licence	Yes*	Yes*	Identifies the certificate number of the waste surveyor responsible for the establishment of the plot. Auto populated based off of data entered on the cutblock screen. Must be changed to reflect the current surveyor on a plot, if multiple surveyors on a block.
			*Those without a certificate number use: Northern Forest Region =WANI Southern Forest Region =WASI Coast Forest Region = WACO
Licence	N/A	Yes	Tenure number, up to ten characters. Must match FTA. For aggregate populations, the licence must be entered as per the waste survey plan.

CP	N/A*[1]	Yes*[2]	Cutting Permit number, up to three characters. Must match FTA. *1: Not applicable for single block surveys plot cards as the CP must be input on the cutblock screen details. *2: Required unless no CP exists in FTA.
Block	N/A*[1]	Yes	Block name, up to ten characters. Must match FTA. Must be entered as per the waste survey plan. *1: Not applicable for single block surveys plot cards as the Block ID must be input on the cutblock screen details.
Residue Surveyor	Yes	Yes*	Identifies the name of the waste surveyor responsible for the establishment of the plot. The waste surveyor name indicated on the cutblock screen will auto be populated on the plot card. *Where multiple surveyors or multiple iPads are on a block, ensure to include each corresponding waste surveyors name that completed each plot on the respective plot card.*
Weather	Optional	Optional	Enter the weather condition at time of survey (example: Rain, Sunny, Windy, Snowy).
Assistant	Yes*	Yes*	Identifies the name of the waste surveyor assistant. *Required unless no assistant present.
Survey Date	Yes	Yes	The date the plot was created and surveyed. Plots must only be created in the field hence at the plot.
Predicted Volume	Yes*	Yes*	This filed is not editable and is relevant only to Ratio surveys. The predicted volume on the plot screen is auto populated from data input on the 'Ratio Sampling Stratum' — Plot prediction popup window. *Not applicable to SRS surveys.*
Measure Plot	N/A*	N/A*	Relevant only to Ratio surveys. Indicates the measure status of a plot. **NO** — Plot does not need measurement. **YES** — Plot requires measurement of Waste pieces. *Not applicable to SRS surveys. All plots in SRS surveys are measure plots.*
Notes	Yes	Yes	Enter any notes relevant to the plot.

Checked	N/A	N/A	The 'Checked; field allows Users to modify the Waste piece. When selected the user can 'Delete' or duplicate the piece.
Piece No.	N/A	N/A	Auto populated sequentially as a User inputs additional pieces. For pieces that are pencil bucked, use a different piece number for each segment and record MP in the comment column to indicate multiple pieces. Piece numbers on the plot card must match piece numbers in the field.
Borderline	Yes	Yes	Identifies pieces that lay across the plot boundary. See Waste Manual for more information.
Species	Yes	Yes	Identifies the species of the piece. See Waste Manual for Acceptable codes.
Kind	Yes	Yes	Quantifies the kind of waste. See waste manual for details.
Class	Yes*	Yes*	A - Avoidable U – Unavoidable See Waste Manual for more information. ** If "U – Unavoidable" a comment must be selected/recorded for that piece, in the "comment code" and/or "note" fields.*
Length (dm)	Yes	Yes	Quantifies the length (in decimeters) the "in plot" length of the piece.
Top (R)	Yes	Yes	Quantifies in rads the gross diameter, inside bark, of the top (small) end.
Top End	Yes	Yes	Describes the top end code value. See waste manual for details.
Butt (R)	Yes	Yes	Quantifies in rads the gross diameter, inside bark, of the butt (large) end.
Butt End	Yes	Yes	Describes the butt end code value. See waste manual for details.

Grade	Yes	Yes	Identifies the grade of the piece regardless of the kind of wood or waste class. See waste manual for details.
Deductions for Rot/Holes: Length (dm)	Yes*	Yes*	Used to input a length deduction (in Decimeters) for rot, defects, or missing wood. *Mandatory unless no rot deductions are required.
Deductions for Rot/Holes: Top (R)	Yes*	Yes*	Used to quantifies the diameter deduction (in rads) for the top end for rot, defects, or missing wood. *Mandatory only when required.
Deductions for Rot/Holes: Butt (R)	Yes*	Yes*	Used to quantifies the diameter deduction (in rads) for the butt end for rot, defects, or missing wood. *Mandatory only when required.
Deductions for Rot/Holes: Decay	Yes*	Yes*	Select one of the following Decay values: *Mandatory unless no rot deduction required.
Outside Measures fields: Far End	Optional	Optional	Enter the diameter (in Radians) of the actual end of the piece when it is outside the plot boundary. This value can be estimated.
Outside Measures fields: Add Length	Optional	Optional	Enter the length (in metres) the additional length of the piece that is outside the plot boundary. This value can be estimated.
Comment Code	Yes*	Yes*	Comment code used to help explain a waste piece. *Required for all unavoidable waste pieces. See waste manual for details.
Note	Yes	Yes	A field is available to edit or enter text about the piece (256 characters maximum).
Piece Vol Survey (m3)	N/A	N/A	The piece net volume calculated based on the survey input values for the Piece.

4.4. Creating and Deleting Stratums in EForWasteBC

After generating a new survey in the EForWasteBC application, users are required to create and input stratum information before they can proceed to add new plots and record waste data.

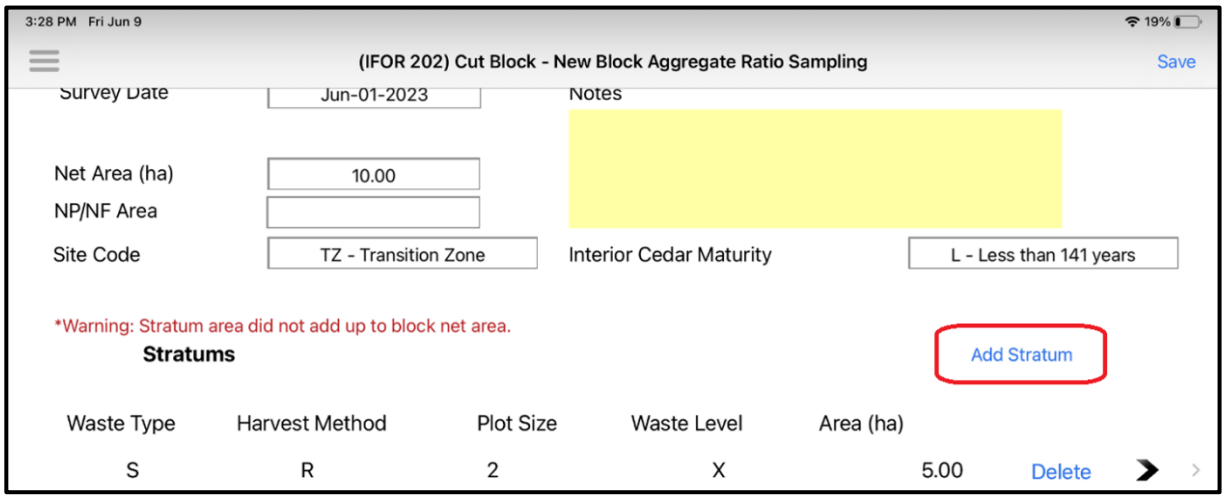
Stratum creation will include much of the same processes depending on which survey method or population type is selected.

4.4.1. Creating new or adding additional Standard Stratums

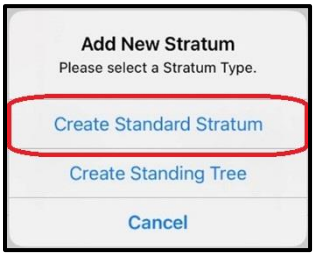
Standard Stratums can be created for input of plot-based data collection, Estimate percent and/or 100% scale sampling methods.

To create a standard stratum:

1. select the 'Add stratum' button.



2. A pop-up window will appear. Select 'Create Standard Stratum'.



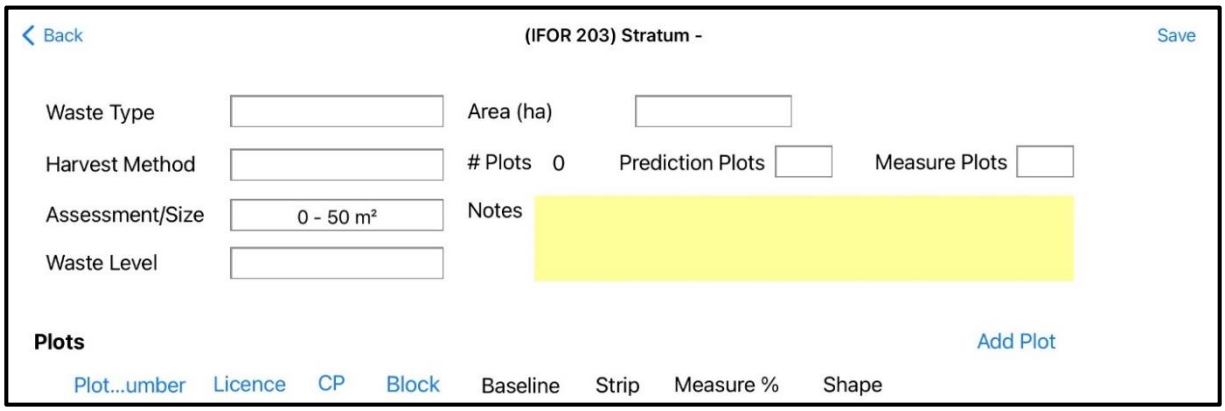
3. When the 'Create Standard Stratum' button is selected, a blank stratum screen with blank header information is generated.

4. Review the sample plan (if applicable) and ensure to populate the stratum header information.

   a. <u>New **Ratio** survey stratum (Interior):</u>

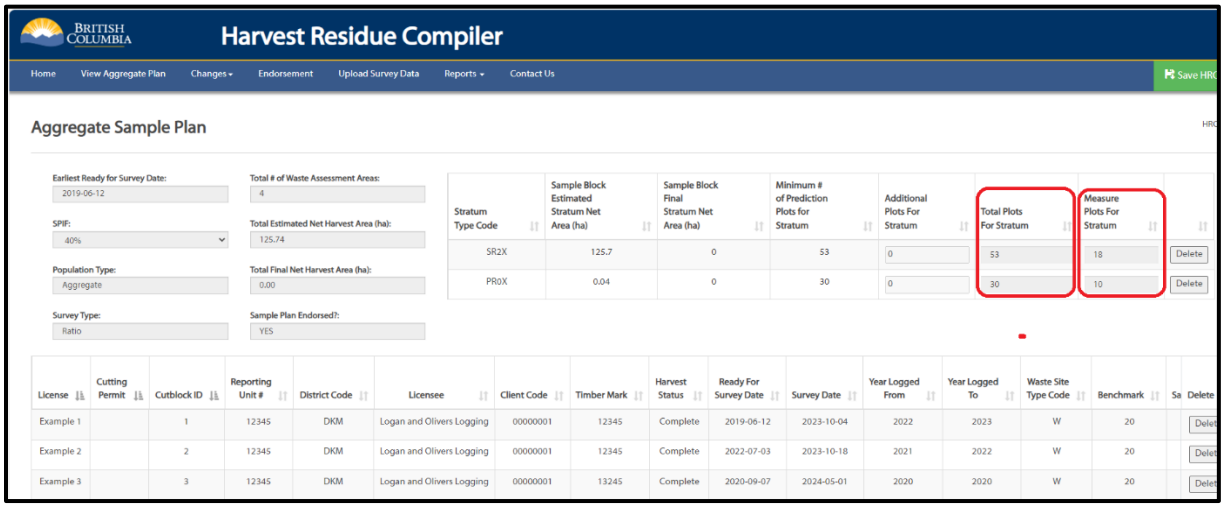
If the survey method is Ratio Users must ensure to populate the number of 'Prediction Plot' and 'Measure Plots' in the stratum header. Review the sample plan (if applicable) or the 'Plot Planning Tables' in the Waste Manual for single block populations to ensue the correct number of prediction/measure plots.

Note: ***The number of 'Prediction Plot' and 'Measure Plots' field cannot be changed once a new plot is added to the stratum. Users must ensure these fields are populated correctly as per the sample plan (if aggregate) or the 'Plot Planning Tables' (if single block).***

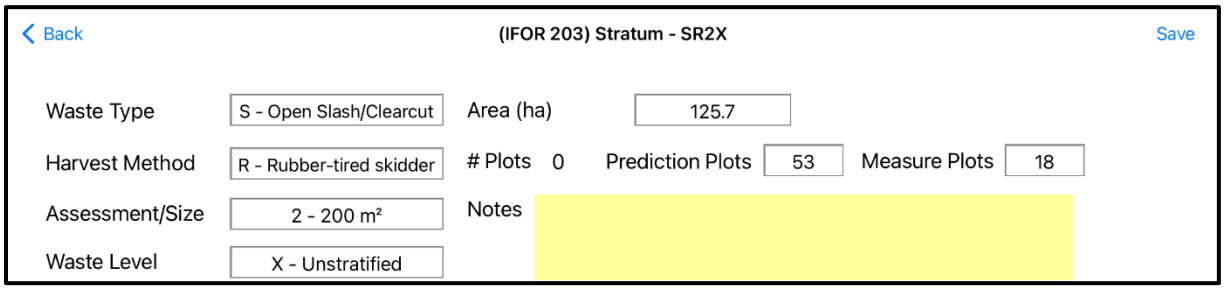


The total number of 'Prediction Plots' entered for each stratum is listed under the 'Total Plots for Stratum' section, within the sample plan in HRC. Similarly, the total 'Measure Plots' entered for each stratum can be located under the 'Measure Plots for Stratums' column in the sample plan in HRC.

In the example below, the Sample Plan, created and endorsed in HRC, indicates that the dispersed stratum (coded as SR2X) requires a total of 53 'Prediction Plots' and a total of 18 'Measure Plots' for the stratum.

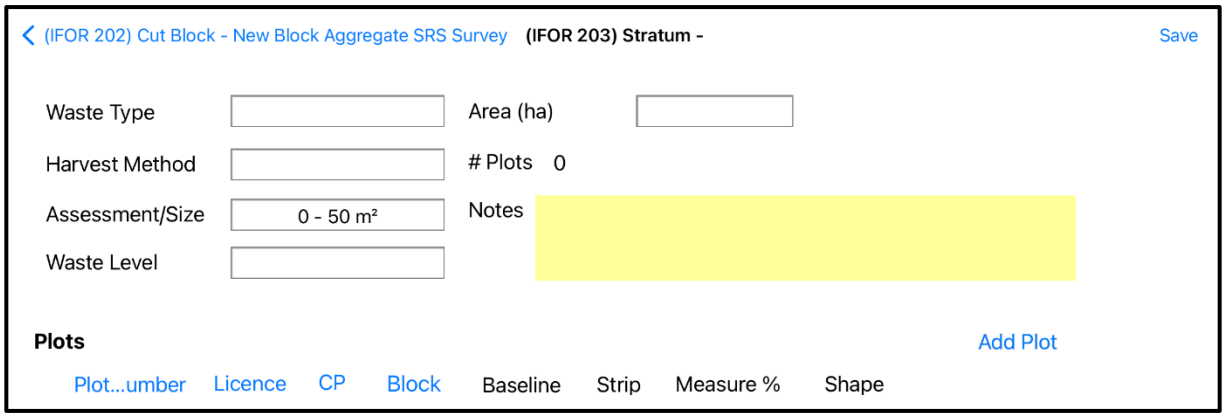


This would be entered in the stratum header as follows:



b. New **SRS** survey stratum (Interior and Coast):

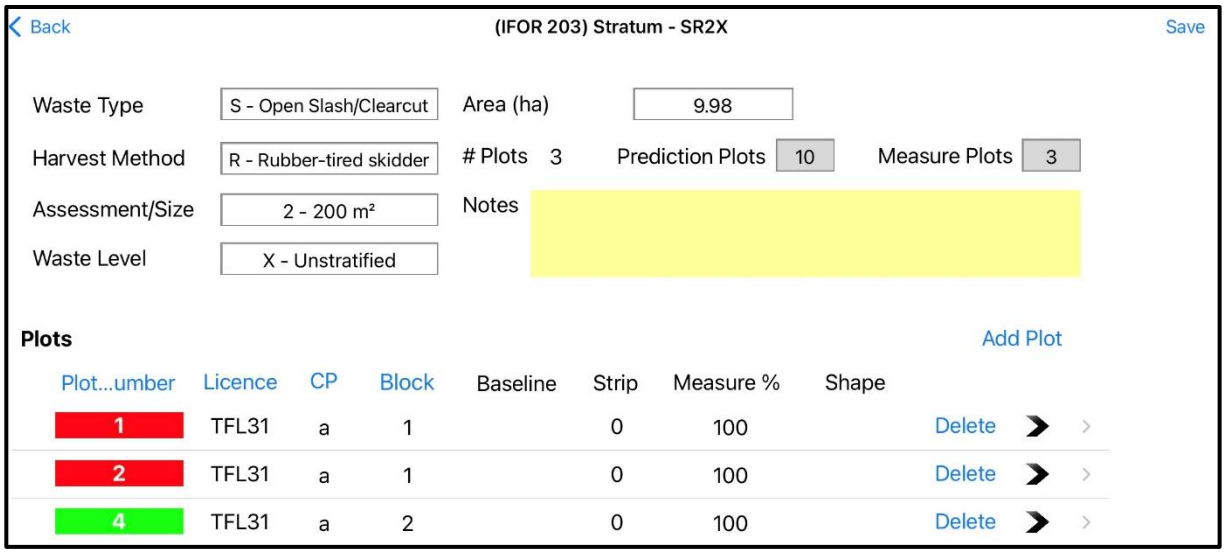
If the survey method is SRS, prediction plots will not apply and all plots will be measured.



Important Reminder: *Users must ensure to fill out the stratum header fields correctly based on accurate stratification of the population. Ensure that stratum type codes are input. Refer to the survey plan to ensure appropriate Waste Type, Harvest Method, Plot Size, Waste Levels, and number of Prediction/ Measure plots for Ratio surveys.*

4.4.1.1 Plot-based sampling method stratum creation

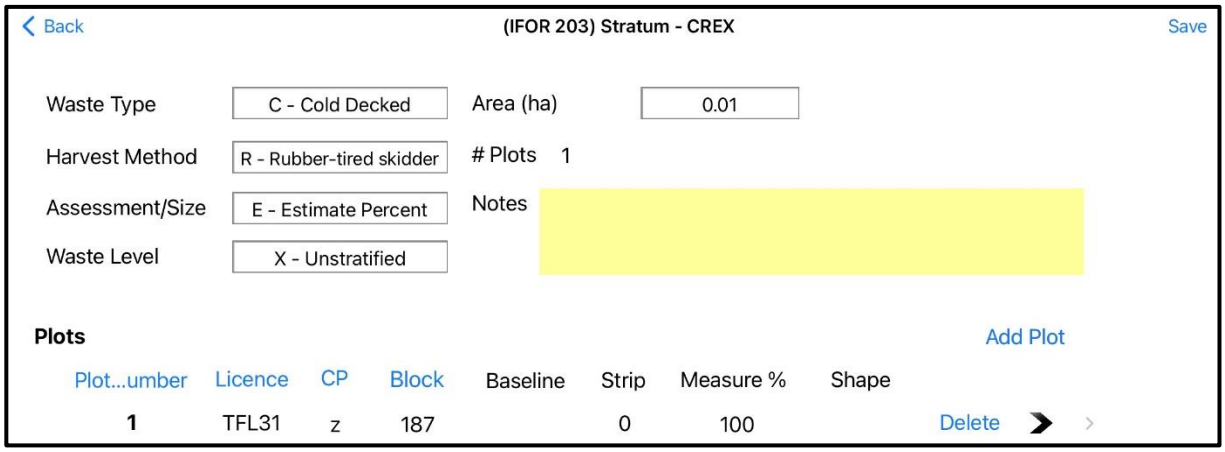
Plot-based stratums are used for data collection of dispersed and accumulated waste types. See waste manual for details.



Example showing a 'plot-based' stratum, created for an Aggregate Ratio Survey.

4.4.1.2 Percent Estimate

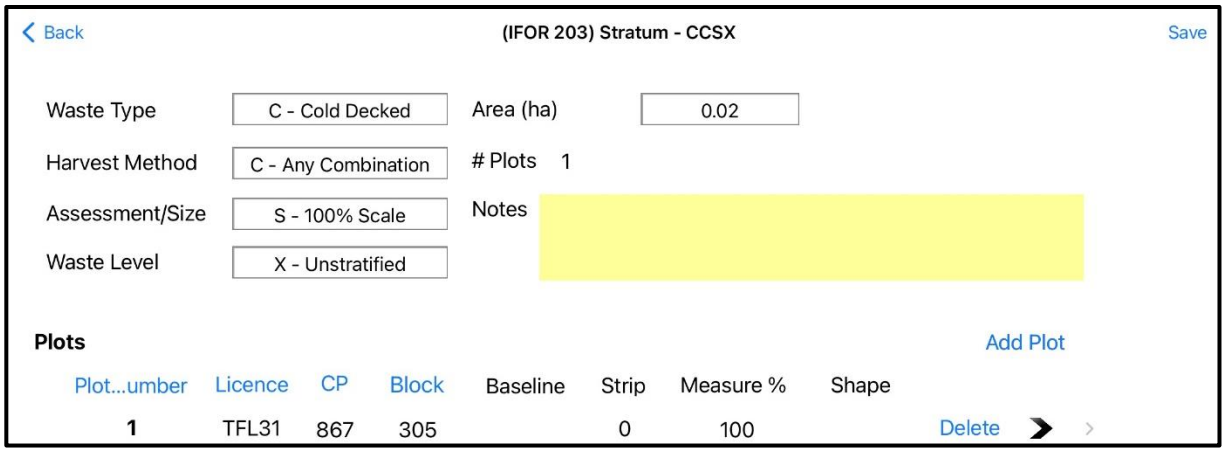
'Percent Estimate' standard stratums can be selected for data collection of stratums such as cold decks, or road deactivation material where waste volumes are estimated.



Example showing a 'percent estimate' stratum, created for an Aggregate Ratio Survey.

4.4.1.3 100% Scale Stratums

The 100% scale stratum can be selected to create a stratum and collect data for stratums such as cold decks, or road deactivation material where waste volumes are 100% measured.



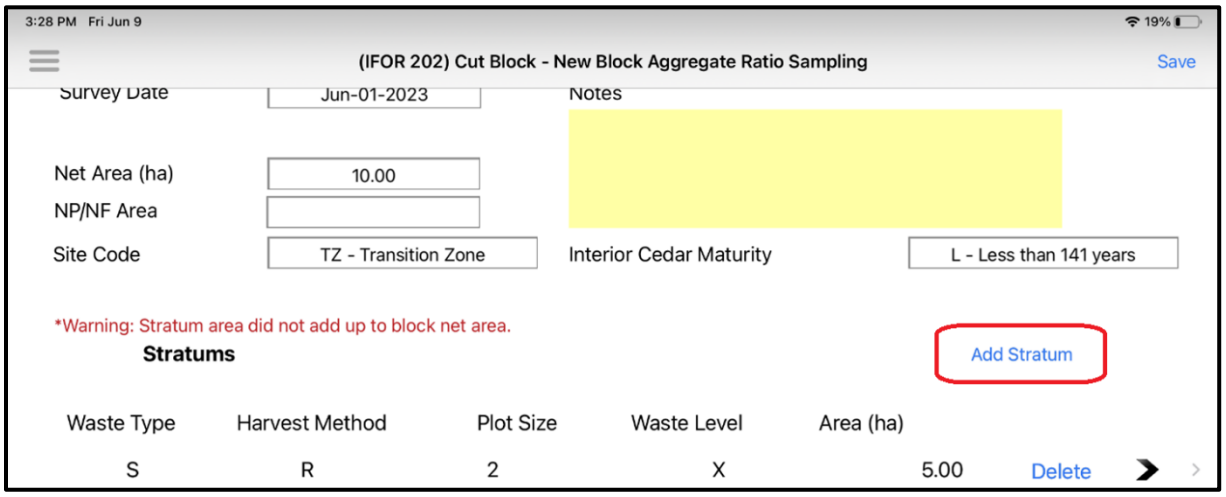
Example showing a '100% scale' stratum, created for an Aggregate Ratio Survey.

4.4.2. Standing Tree Stratums

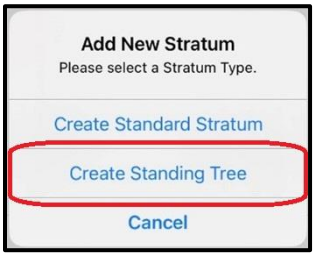
Where standing waste occurs in a population either in patches or single/ scattered trees surveyors must stratify, into unique subpopulations, separate from dispersed subpopulations.

To create a Standing Tree stratum:

1. select the 'Add stratum' button.

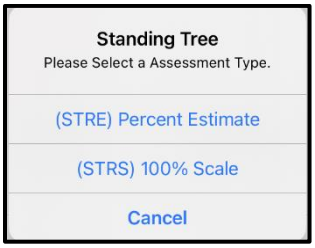


2. A pop-up window will appear. Select 'Create Standing Tree' stratum.



3. A pop-up window will appear where Users will have the option to select either:

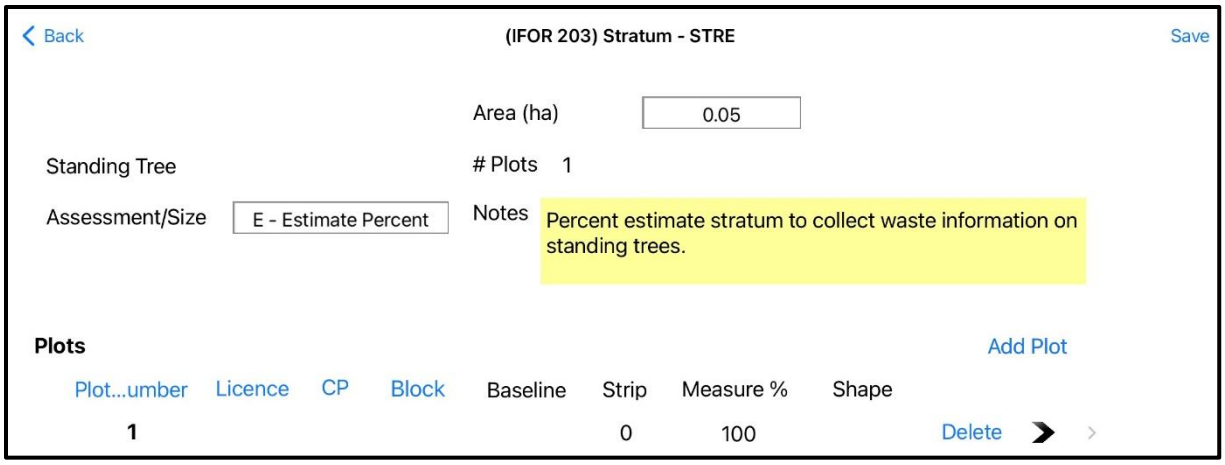
    a. (STRE) Percent Estimate: Where standing tree volumes are estimated.
    b. (STRS) 100% Scale: Where 100% of standing trees are measured.



4. When a selection is made, a blank stratum header will be generated. Review the sample plan (if applicable) and ensure to fill out the Stratum header information.

4.4.2.1 Percent Estimate

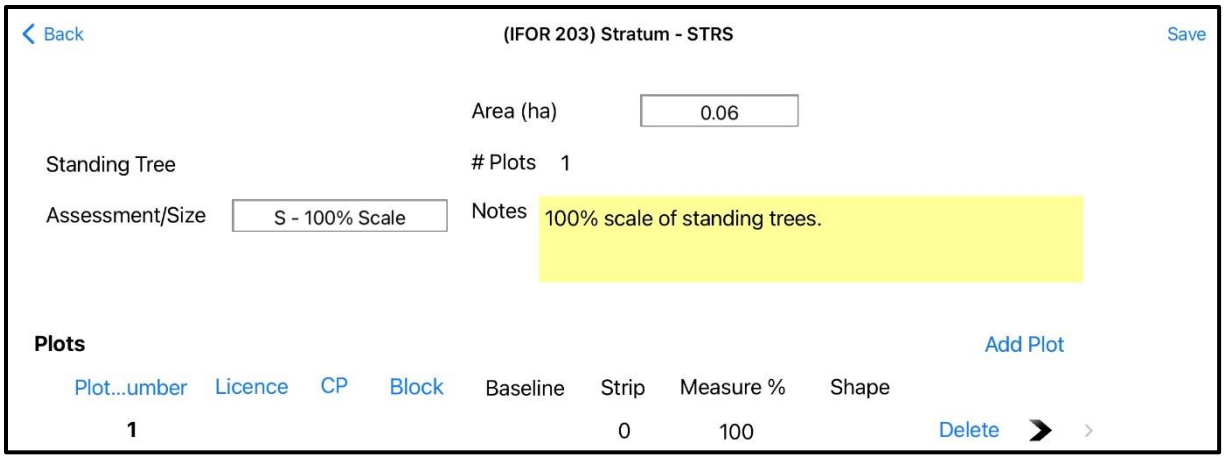
The Percent Estimate stratum can be selected to create a standing tree stratum where standing tree volumes are estimated.



Example showing a 'estimate percent' standing tree stratum, created for an Aggregate Ratio Survey.

4.4.2.2 100% Scale

The (STRS) 100% Scale stratum can be selected to create a standing tree stratum where 100% of standing trees must be measured.

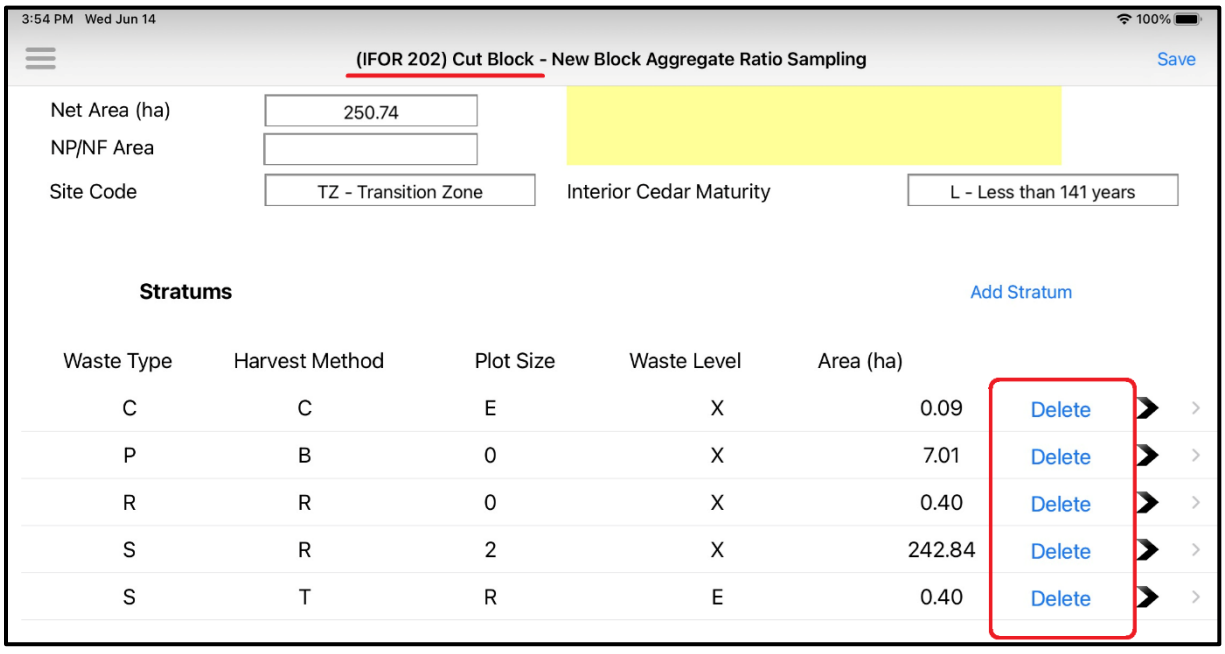


Example showing a '100% scale' standing tree stratum, created for an Aggregate Ratio Survey.

4.4.3. Deleting Stratums

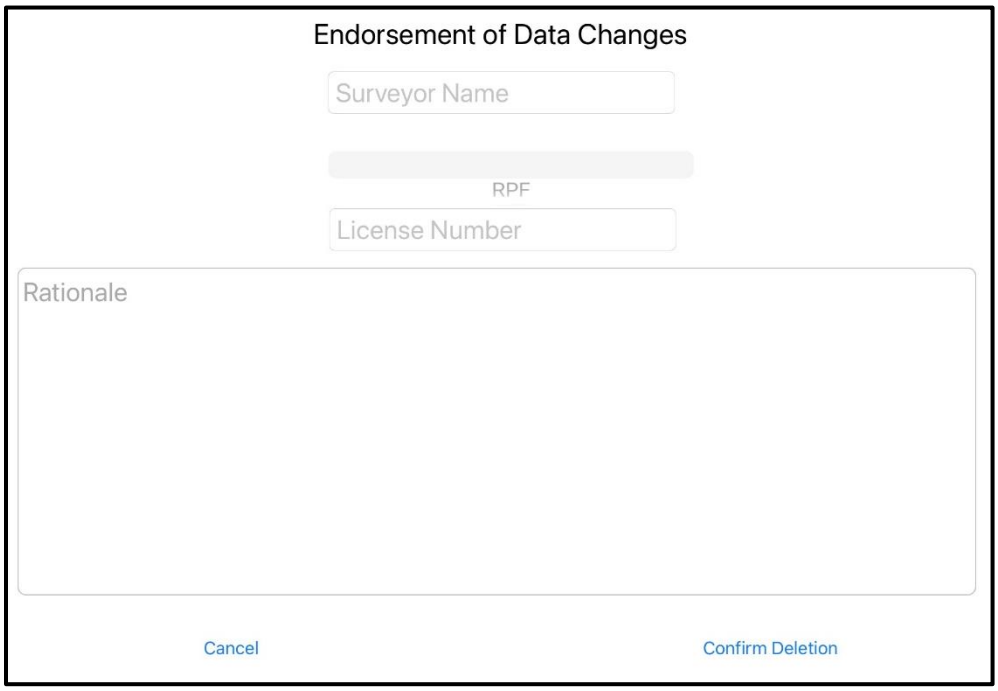
If a stratum was created in error, Users can delete the stratum from the survey file. Stratum deletions must be supported by a professional rationale, see waste manual for more information

1. On the '(IFOR 202) Cut Block' screen, navigate to the stratums, located below the cutblock header information. Find the stratum of note and select the 'Delete' button, which is located on the right side of the screen.



2. Once the 'Delete' button is selected, the Endorsement of Data Changes pop-up window will appear. Populate the Endorsement of Data Changes pop-up window.
   i. Fill out the Surveyors Name.
   ii. Select the Professional designation (if applicable).

iii. Enter the registration number (if applicable)
iv. Then include a Professional rationale. See waste manual for more information.



Note: ***Once a stratum is deleted it cannot be recovered and all data recorded for that stratum will be lost.***

4.5. Adding and Deleting Plots

To commence plot data collection, Users must ensure that stratums have been created in the application and reflect accurate stratum subpopulations in the WAA and/or sample plan. Then, Users can navigate within each respective stratum, add plots then enter piece data, as required.

The process for adding plots will vary depending on the sample design and sample population.

Ratio surveys require the estimation of plot volumes for every newly created plot. While SRS surveys require the establishment and measurement of all waste pieces in the plot.

Users can create new plots by selecting the 'Add Plot' button located to the right side of the '(IFOR 203) Stratum' Screen.

Note: *Before adding a new plot, it is important to verify the survey plan and map to ascertain which plot number must be input and which stratum the plot must be created in.* Additionally, if the survey is Ratio, it is important *to enter an accurate predicted plot volume (m3) that reflects the waste volume on the plot (in field) into the 'Ratio Sampling Stratum' prediction pop-up window.*

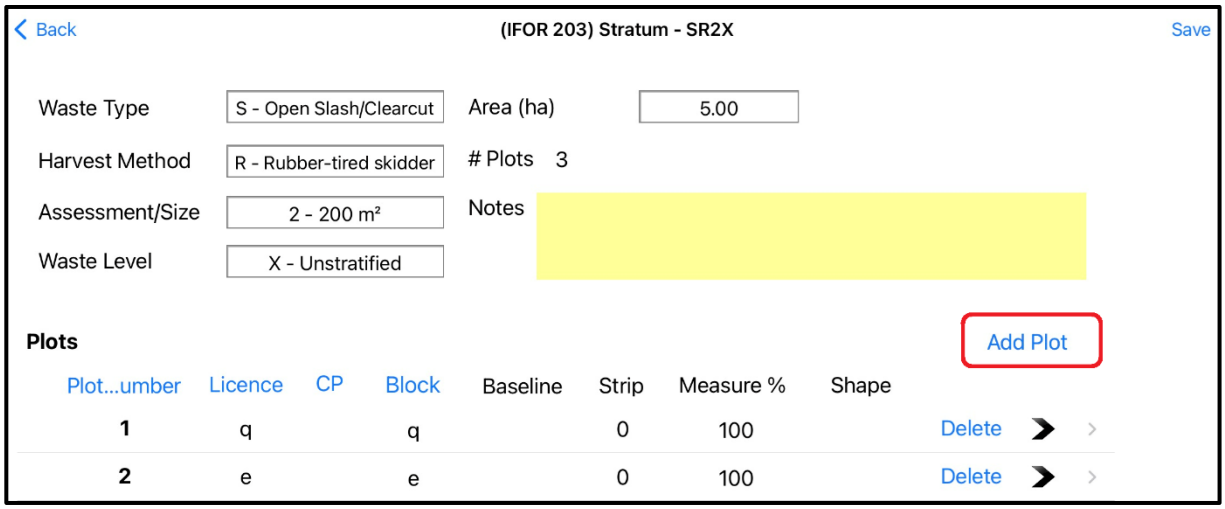
4.5.1. Adding Plots for SRS populations

When a new plot is created for Interior or Coast Single Block SRS surveys, the newly created plot will be generated with most of the plot header information fields populated. The plot number, plot size, measure %, surveyor name, survey date is auto filled. While User entry of the baseline, shape, strip, weather, assistant, and notes are required. Ensure to review the plot header information and populate as required.

When a new plot is created for Interior Aggregate SRS surveys, the plot header information must be populated by the User.

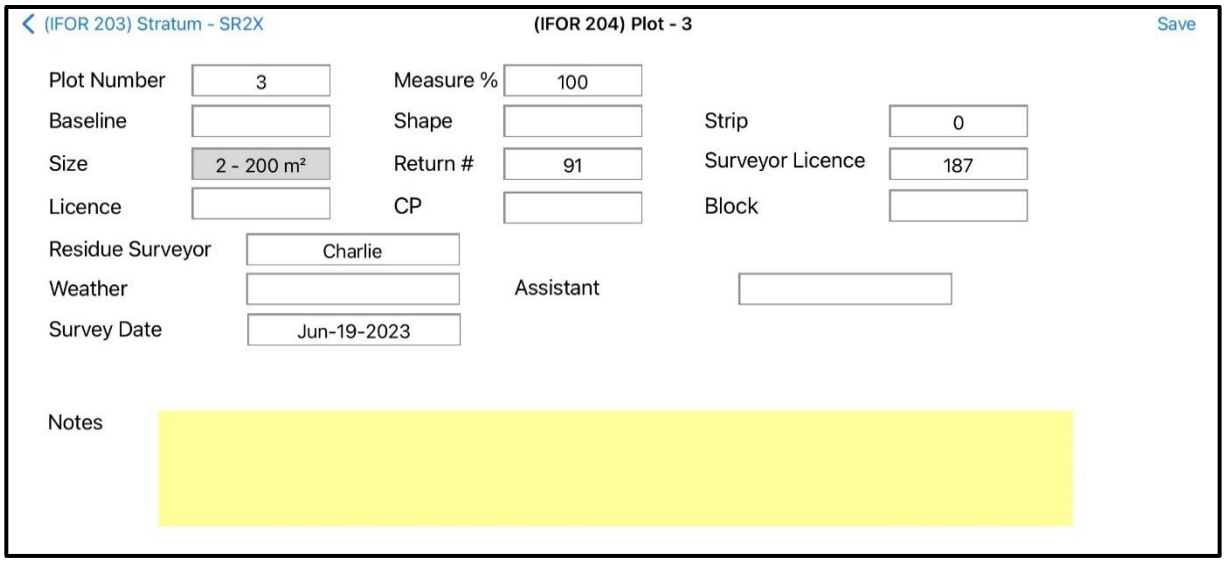
To create a new plot for single block or aggregate SRS populations:

1. Navigate to the 'Plots' details located below the stratum header information on the (IFOR203) Stratum' screen. Select the 'Add Plot' button.



2. A plot card will be generated. Review and populate the plot header details.

Note: *The plot numbers will increase sequentially with every newly created plot card. Make sure the plot number is correct and corresponds with the correct plot number on the survey map and/or on the Aggregate Sample Plan.*



Note: *If the population is single block SRS the licence, CP and block information will not be required. If the population is Aggregate the licence, CP and block information must be* populated by the User.

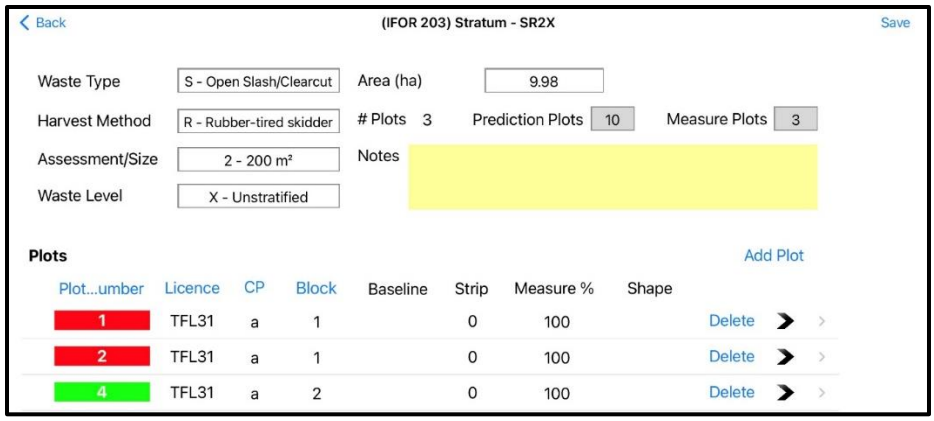
4.5.2. Adding Plots for Ratio Surveys

The Interior Ratio sampling survey method differs from Simple Random Sampling (SRS) surveys by incorporating the use of prediction plots, where plot volumes are estimated upon initial entry. Approximately one-third of the prediction plots are randomly selected for measurement.

When adding a new plot to a Ratio survey, the 'Ratio Sampling Stratum' prediction pop-up window appears, prompting the User to input the plot number and the predicted plot cut control volume in cubic meters (m^3).

The application will determine whether a given plot requires measurements and will indicate a plots ‘measure’ status on the plot card. A 'NO' status indicates that the plot is based on the predicted volume and, therefore, does not require physical measurements. A 'YES' status signifies that measurements are required for the specific plot.

On the stratum screen (IFOR203), a plot’s ‘measure status’ is indicated by the colour of the plot number box icon. Where the plot number box icon is red, the plot is a prediction (not requiring measurements) and where the plot number box icon is green, the plot is a measure and requires plot/piece measurements, as seen below.



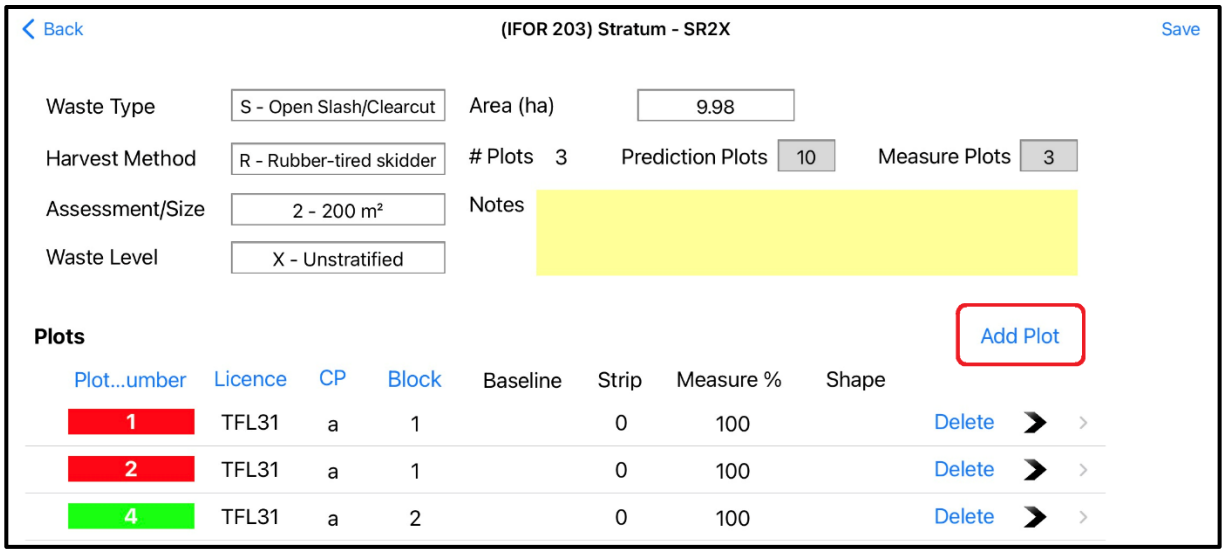
When a new plot is created for Interior Single Block Ratio surveys, the newly created plot will be generated with most of the plot header information auto populated. The plot number (from estimation window), plot size, measure %, surveyor name, survey date is auto filled. User entry of the baseline, shape, strip, weather, assistant, and notes is required. Ensure to review the plot header information and populate as required.

When a new plot is created for Interior Aggregate Ratio surveys the plot header information must be populated by the User.

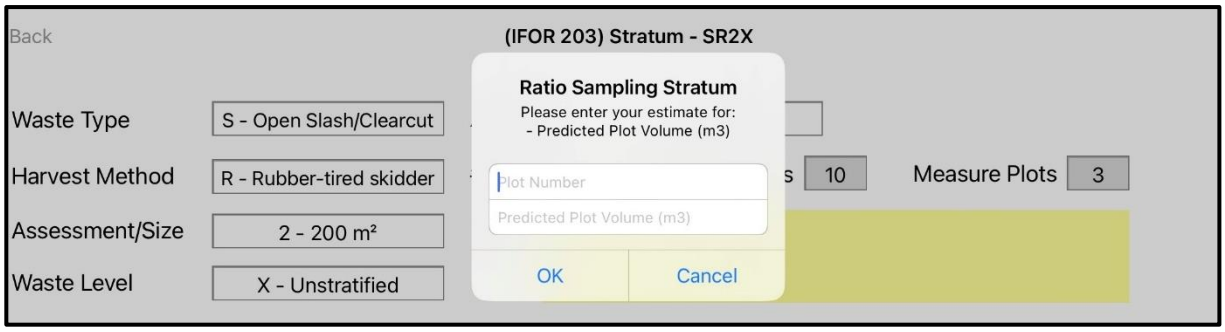
Note: *Before adding a new plot, it is important to verify the survey plan and map as to ascertain which plot number must be input and which stratum the plot must be created in. It is equally important that when the 'Ratio Sampling Stratum' prediction pop-up window appears, to enter an accurate predicted plot volume (m3) that reflects the waste volume on the plot. —* ***It Is not an acceptable practice to delete a plot to adjust the prediction volume****. Doing so is bias and may result in submission rejection.*

To create a new Ratio plot for single block or aggregate **Ratio** populations (Interior):

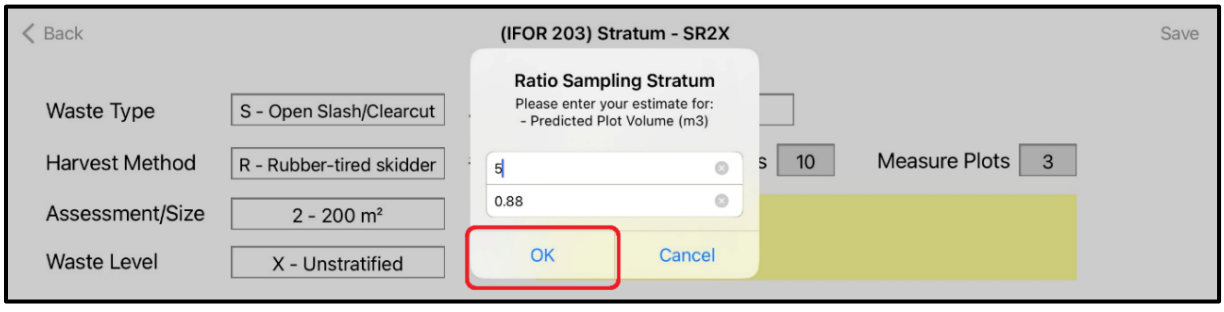
1. Select the 'Add Plot' button located below the stratums notes on the '(IFOR203) Stratum' screen.



2. The 'Ratio Sampling Stratum' prediction pop-up window will appear. Enter The plot number and predicted volume for the plot. **Make sure to enter the correct plot number and accurate prediction volume** as this information cannot be changed after it is confirmed.

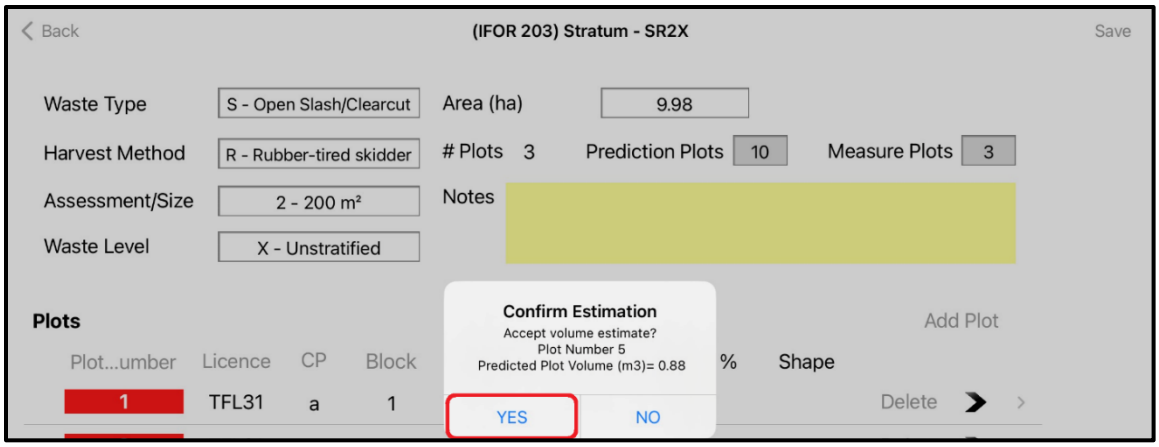


3. Select 'OK' to proceed or, select 'Cancel' to exit the 'Ratio Sampling Stratum' prediction pop-up window.

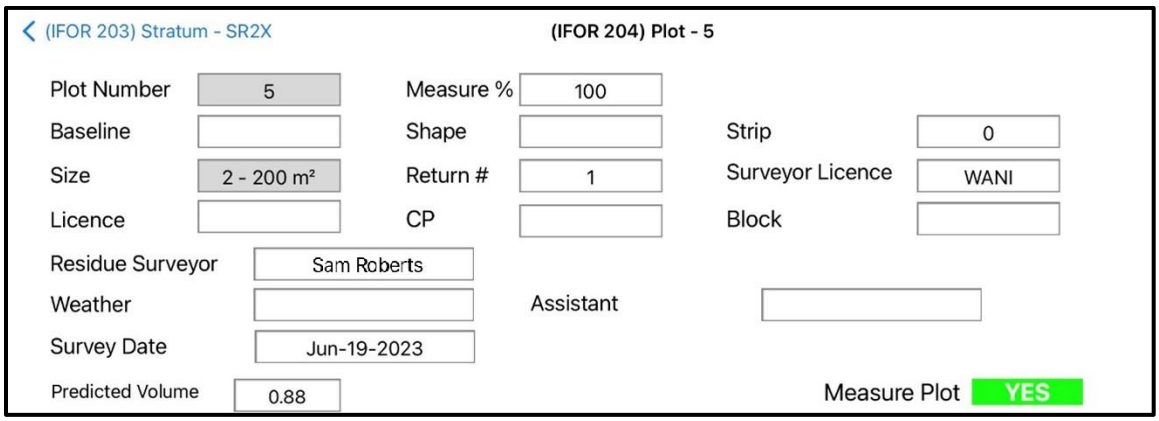


4. A confirmation pop-up window will appear.
   a. Select 'YES' to confirm the estimation.
   b. Select 'NO' to cancel or re-input prediction.

Note: *It is important that the prediction and plot number is reviewed and correct prior to selecting 'YES'.*



5. Once the predicted volume is input and 'YES' is selected, a plot card will be generated. Review and populate the plot card header information.



Note: For *single block Ratio populations, the licence, CP, and block information will not be required. If the population is Aggregate the licence, CP and block information must be* populated by the User.

4.5.3. Deleting Plots

The deletion of plots in a Waste survey must be rare. Users are encouraged to reference the Waste Manual for details on plot deletions. Once deleted User must endorse the plot deletion and provide a written rationale.

To reduce the need for plot deletions it is important to verify the survey plan and map, before adding new plots, to ensure which plot number must be input and which stratum the plot must be created in.

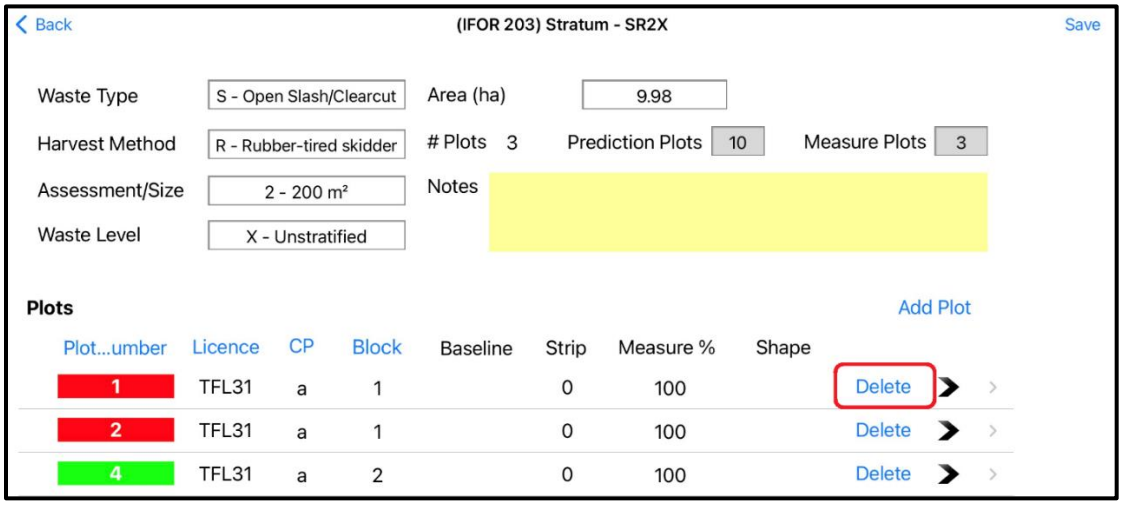
Note: ***Once a plot is deleted it cannot be recovered and all data recorded on the plot card will be lost.***

If a plot must be deleted Users can follow the steps outlined below:

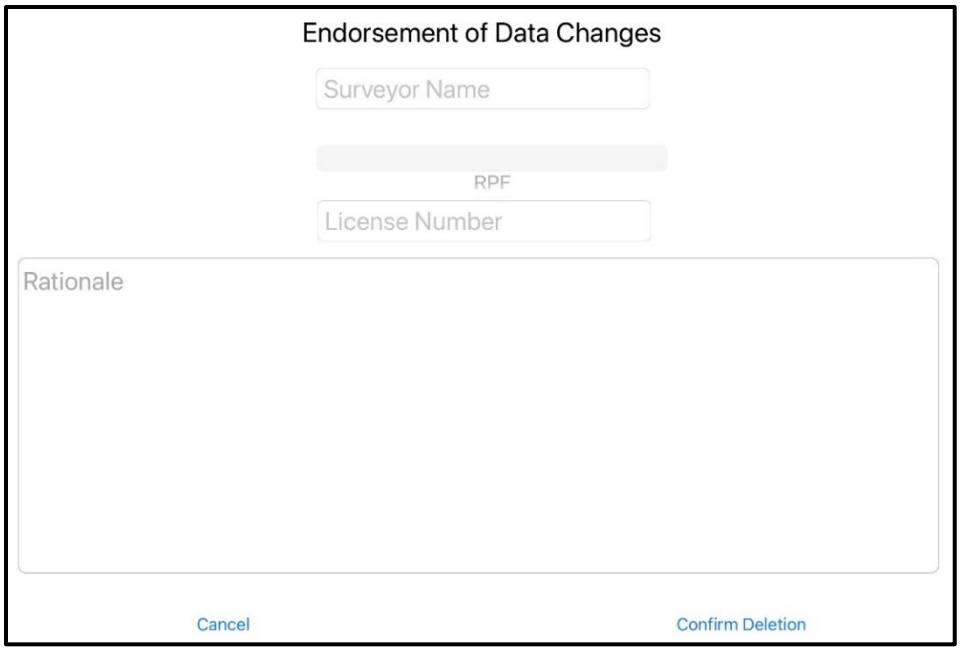
1. From the '(IFOR202) Cut Block' screen, navigate to and select the specific stratum that is housing the plot to be deleted.

2. In the '(IFOR203) Stratum screen', find the specific plot.

3. Find and select the 'Delete' button which is located below the 'Add Plot' button, in the same row and adjacent to the plot number to be deleted. **Ensure to select the correct plot in the correct stratum**. Once a plot is deleted it cannot be recovered hence the plot data will be lost.



4. Once the 'Delete' button is selected, the Endorsement of Data Changes pop-up window will appear. Populate the Endorsement of Data Changes pop-up window.
   i. Fill out the Surveyors Name.
   ii. Select the Professional designation (if applicable).
   iii. Enter the registration number (if applicable)
   iv. Then include a Rational. — Rational must be acceptable and will be reviewed by the district.



5. Select 'Confirm Deletion' to proceed with the deletion.

Note: *If a plot deletion is not approved by a Forest Professional at the time of deletion, the data change must be review by the Forest Professional responsible for the submission. The data change is then endorsed by the submitting or endorsing professional, when the Plot Prediction Report is included in the submission attachments.*

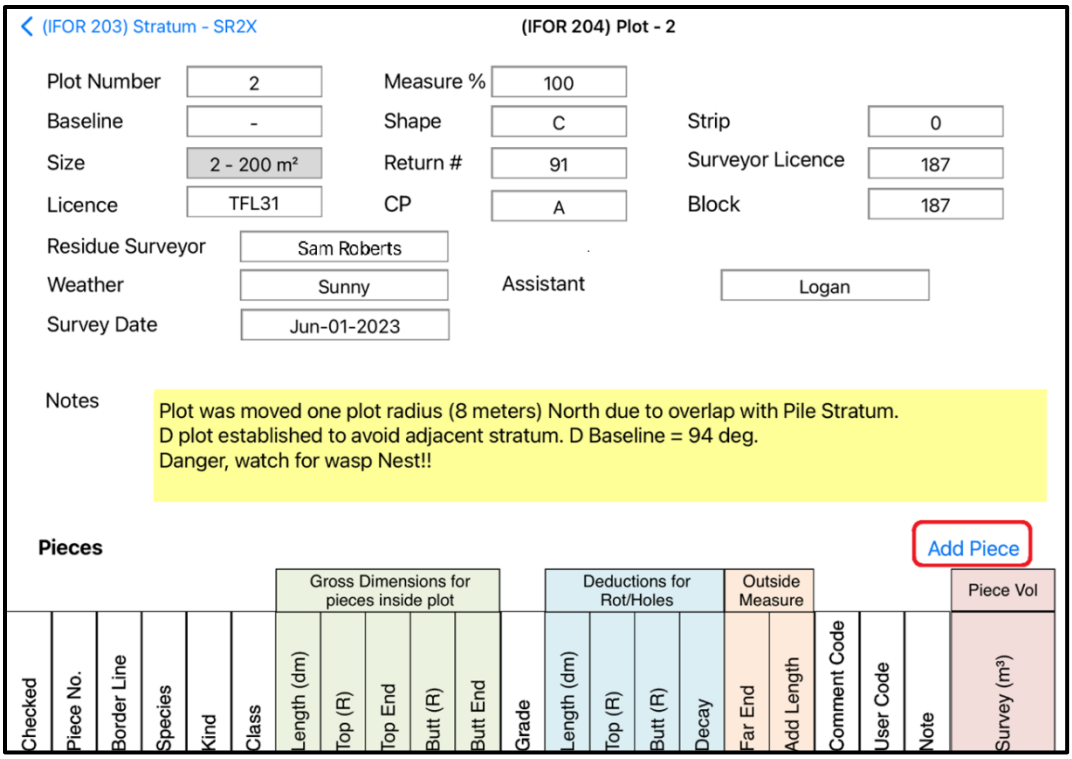
4.6. Entering Plot Piece Data

Before entering and documenting plot details in the EForWasteBC application, Users must first create a survey. Stratums must be created appropriately, with all header information populated correctly. Plots must be created in the field (**AKA: at the plot**). After the plot has been created within the designated stratum, the surveyor can proceed with the waste material/piece measurement and recording.

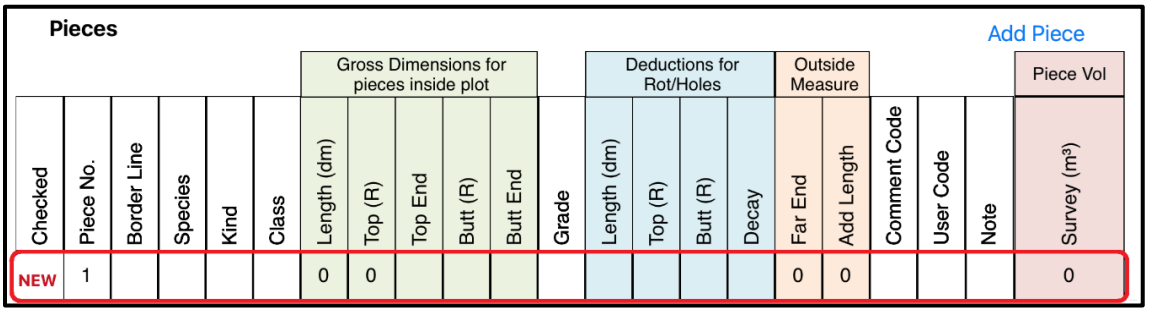
Note: *Users are encouraged to reference the Waste Manual regularly to review the specifications for Waste material measurements and recording standards.*

4.6.1. Entering Piece Data for Standard Stratums

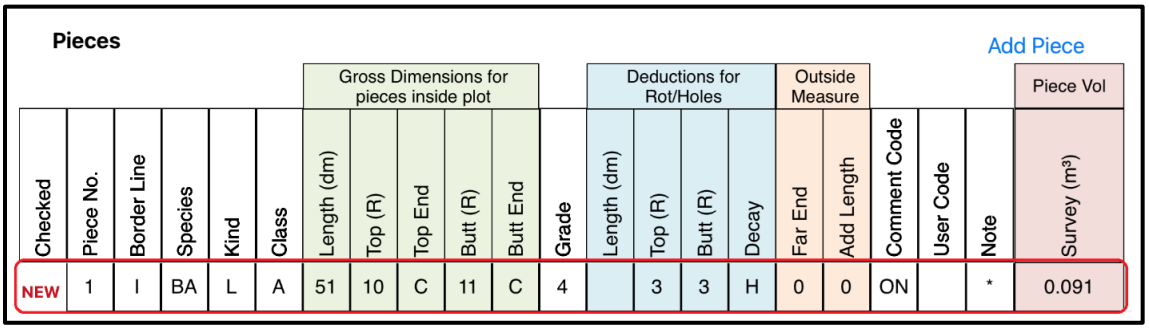
1. On the '(IFOR 204) plot' screen, select the 'Add Piece' button.



2. A new row of data will be inserted to the plot card, where waste piece details can be recorded.



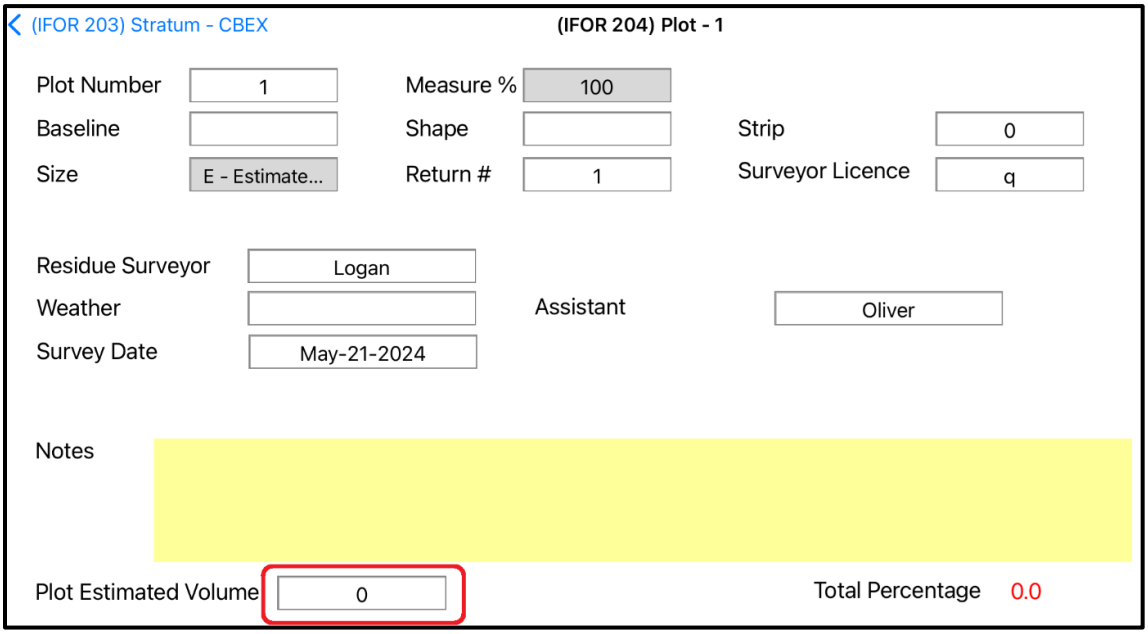
3. Populate piece details accurately and as per the measurement and recording standards specified in the Waste Manual.



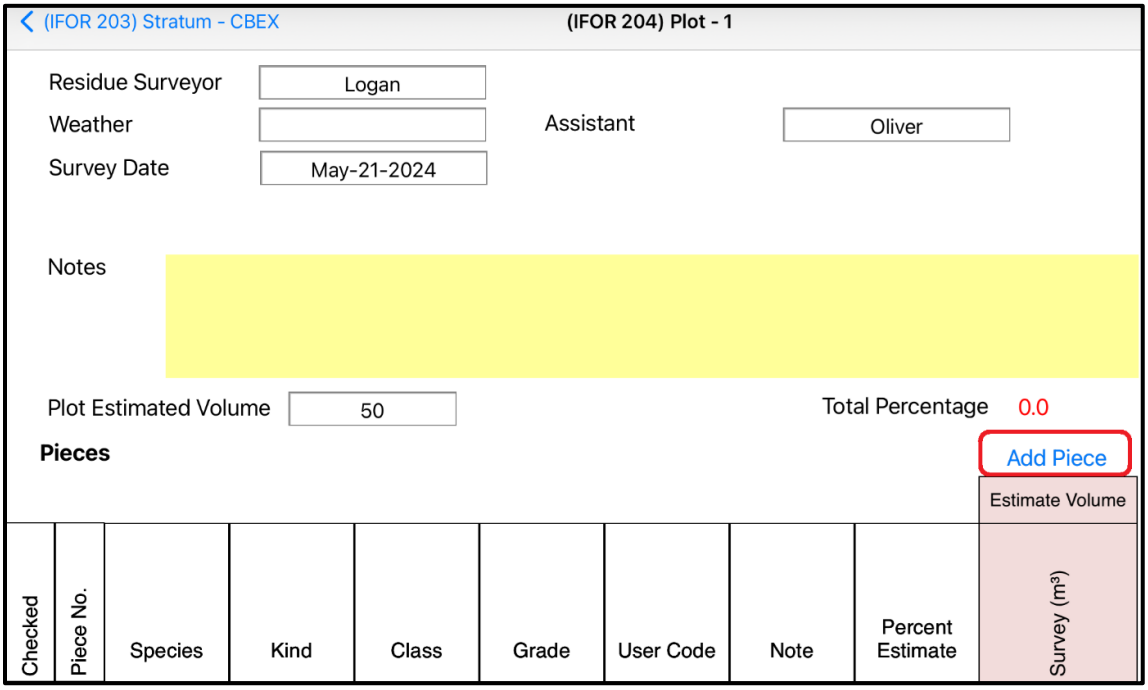
4. Select the 'Add Piece' button to add additional pieces as required.

4.6.2. Entering Piece Data for Percent Estimate Stratums

1. On the '(IFOR 204) plot' screen, populate the 'Plot Estimated Volume'.



2. Select the 'Add Piece' button.



3. A new row of data will be inserted to the plot card, where waste piece details can be recorded.

Pieces Add Piece

									Estimate Volume
Checked	Piece No.	Species	Kind	Class	Grade	User Code	Note	Percent Estimate	Survey (m³)
NEW	1							0.0	0

4. Populate piece details accurately and as per the measurement and recording standards specified in the Waste Manual.

Plot Estimated Volume 50 Total Percentage 100.0

Pieces Add Piece

									Estimate Volume
Checked	Piece No.	Species	Kind	Class	Grade	User Code	Note	Percent Estimate	Survey (m³)
NEW	1	CE	L	A	2			100.0	50

Note: *The 'Total Percentage' is auto populated based off of the combined 'Percent Estimate' recorded for each piece. The 'Total Percentage must add up to 100%.*

Plot Estimated Volume 50 Total Percentage 100.0

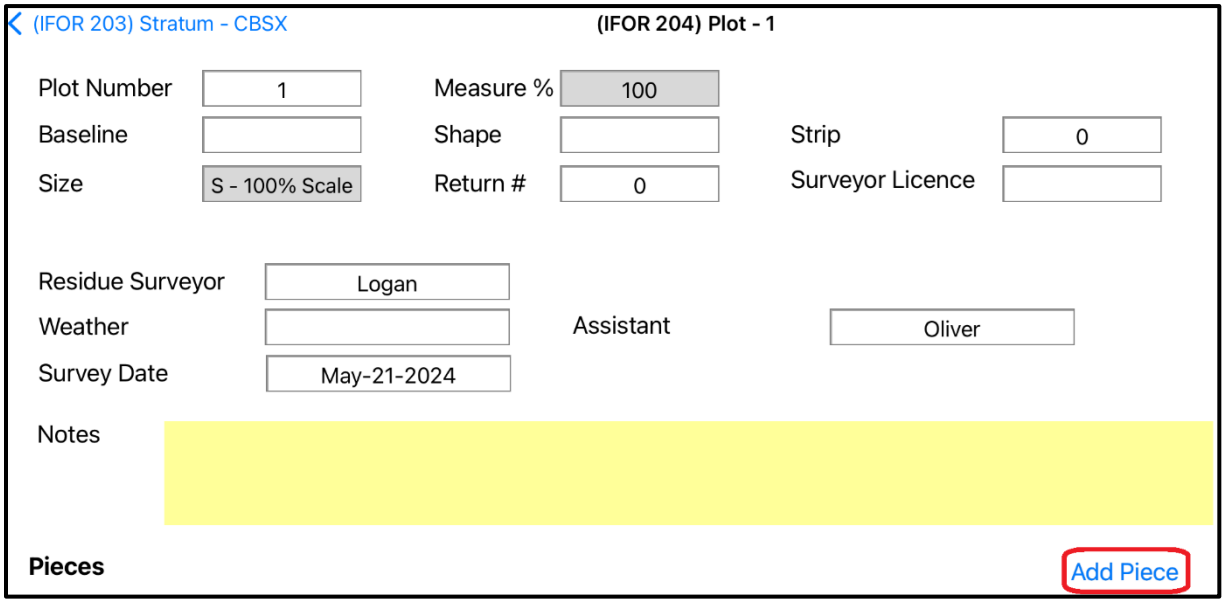
Pieces Add Piece

									Estimate Volume
Checked	Piece No.	Species	Kind	Class	Grade	User Code	Note	Percent Estimate	Survey (m³)
NEW	1	CE	T	A	2			25.0	12.5
NEW	2	CE	T	A	4			25.0	12.5
NEW	3	BA	T	A	2			25.0	12.5
NEW	4	BA	T	A	4			25.0	12.5

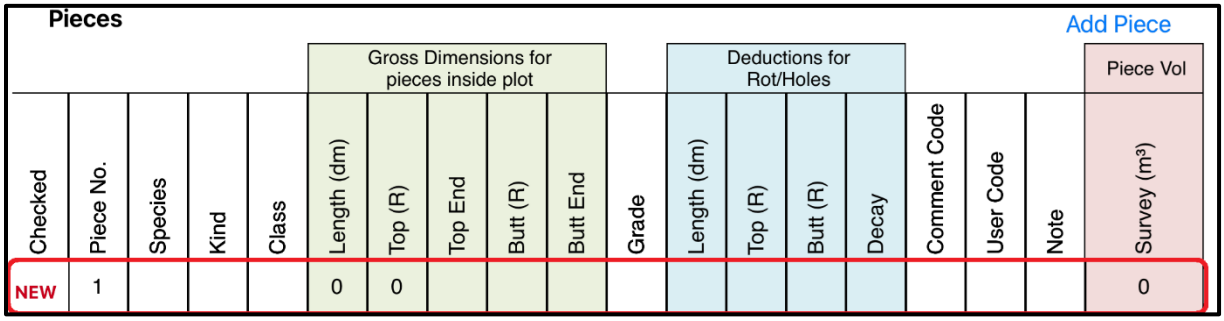
5. Select the 'Add Piece' button to add additional pieces as required.

4.6.3. Entering Piece Data for 100% Scale Stratums

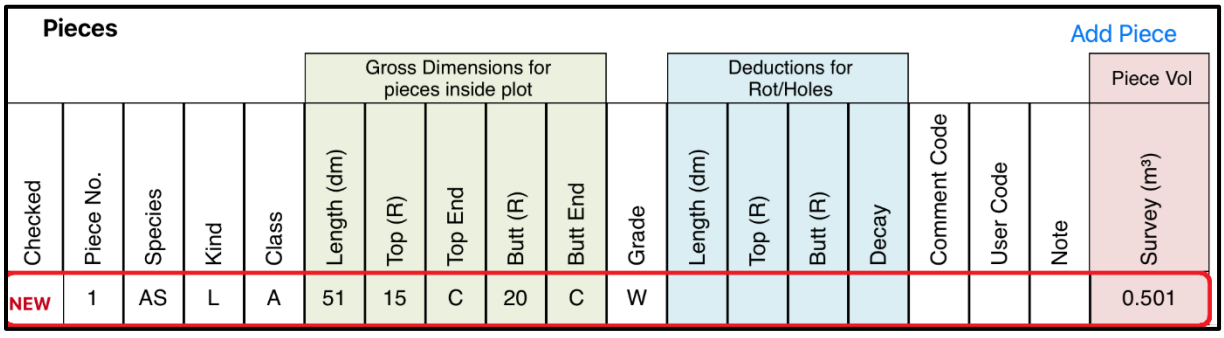
1. On the '(IFOR 204) plot' screen, select the 'Add Piece' button.



2. A new row of data will be inserted to the plot card, where waste piece details can be recorded.



5. Populate piece details accurately and as per the measurement and recording standards specified in the Waste Manual.

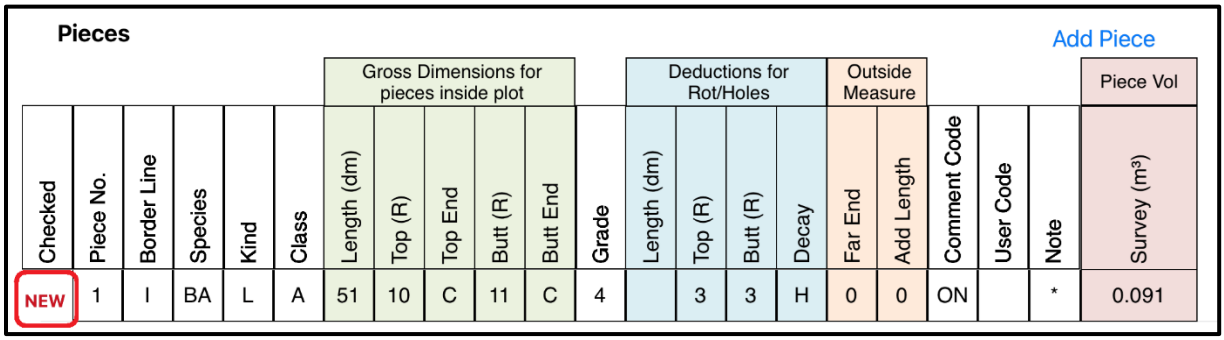


6. Select the 'Add Piece' button to add additional pieces as required.

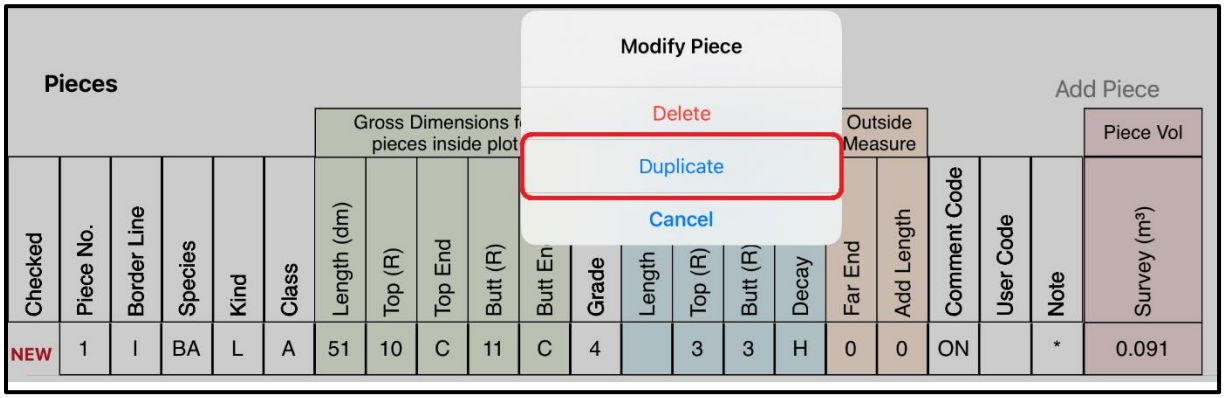
4.6.4. Duplicating pieces

The application allows Users the ability to duplicate waste pieces that have the same characteristics. Piece duplication can be entered using the following procedure:

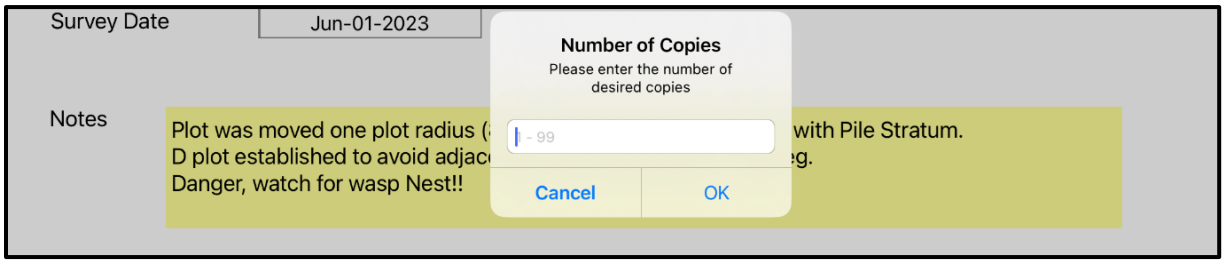
1. Find the piece to be duplicated, select the 'NEW' button on the left of the screen.



2. On the 'Modify Piece' pop up window, select 'Duplicate'.



3. In the 'Number of Copies' pop-up window, enter the number of pieces required, up to ninety-nine.



4. Select 'OK' to proceed or, Cancel to exit the duplication process.

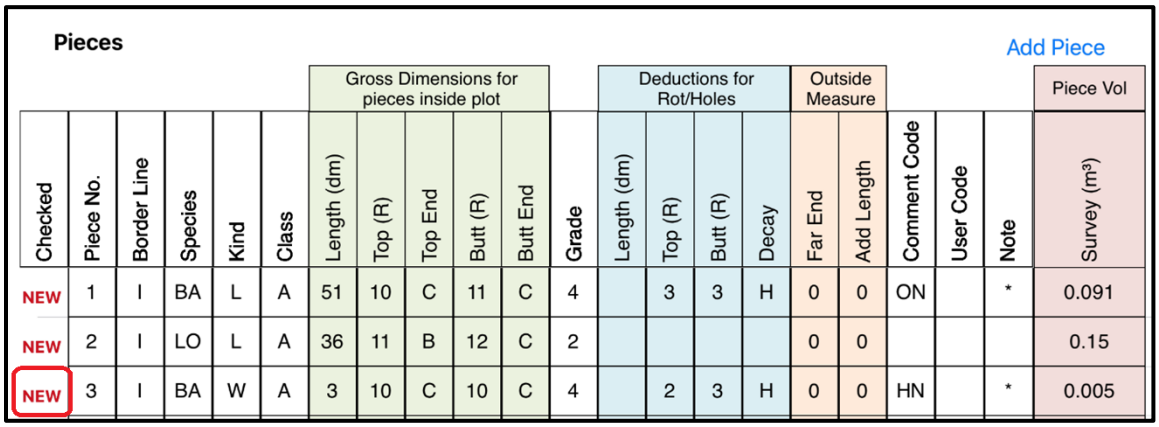
5. When the 'OK' button is selected, the application will add the indicated number of pieces to the plot card, numbered sequentially.

Note: *When multiple pieces have been recorded and Users want to duplicate a piece that was previously recorded at the beginning of the plot, all duplicate pieces will be numbered sequentially and located at the end of the plot card.*

4.6.5. Deleting Pieces

If a piece was entered in error, Users can delete the piece from the plot card:

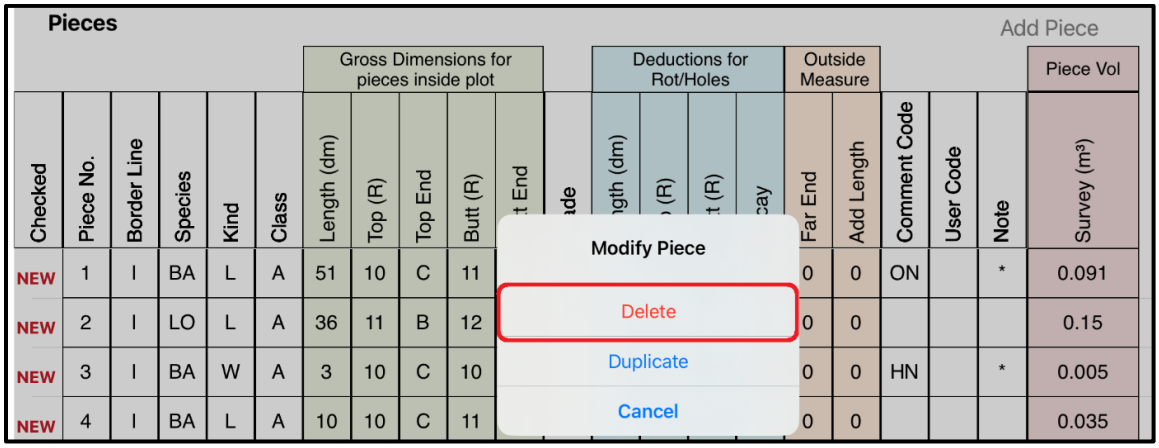
1. Find the piece to be deleted, select the 'NEW' button at the left of the screen.



Pieces — Add Piece

						Gross Dimensions for pieces inside plot						Deductions for Rot/Holes				Outside Measure					Piece Vol
Checked	Piece No.	Border Line	Species	Kind	Class	Length (dm)	Top (R)	Top End	Butt (R)	Butt End	Grade	Length (dm)	Top (R)	Butt (R)	Decay	Far End	Add Length	Comment Code	User Code	Note	Survey (m³)
NEW	1	I	BA	L	A	51	10	C	11	C	4		3	3	H	0	0	ON		*	0.091
NEW	2	I	LO	L	A	36	11	B	12	C	2					0	0				0.15
NEW	3	I	BA	W	A	3	10	C	10	C	4		2	3	H	0	0	HN		*	0.005

2. On the 'Modify Piece' pop up window, select 'Delete'.

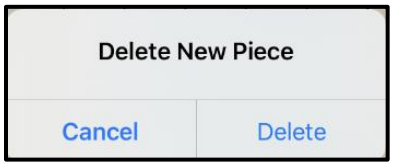


Pieces — Add Piece

						Gross Dimensions for pieces inside plot						Deductions for Rot/Holes				Outside Measure					Piece Vol
Checked	Piece No.	Border Line	Species	Kind	Class	Length (dm)	Top (R)	Top End	Butt (R)	t End	ade	gth (dm)	(R)	t (R)	cay	Far End	Add Length	Comment Code	User Code	Note	Survey (m³)
NEW	1	I	BA	L	A	51	10	C	11							0	0	ON		*	0.091
NEW	2	I	LO	L	A	36	11	B	12							0	0				0.15
NEW	3	I	BA	W	A	3	10	C	10							0	0	HN		*	0.005
NEW	4	I	BA	L	A	10	10	C	11							0	0				0.035

Modify Piece
Delete
Duplicate
Cancel

3. A 'Modify Piece' pop up window will appear. Select 'Delete' to proceed or 'Cancel' to exit the deletion pop up window.



4.6.6. Data Errors and Warnings

When entering data into the application it is possible that the plot and/or piece details are entered incorrectly, with incorrect value combinations and/or can be missing crucial details. These issues can result in either an "**Error**", where Users will not be able to continue until the values have been corrected, or a "**Warning**", where Users can continue to the next screen without correction.

Whether error or warning Users will be presented with a popup window indicating the potential issue that must either be corrected and/or reviewed before proceeding.

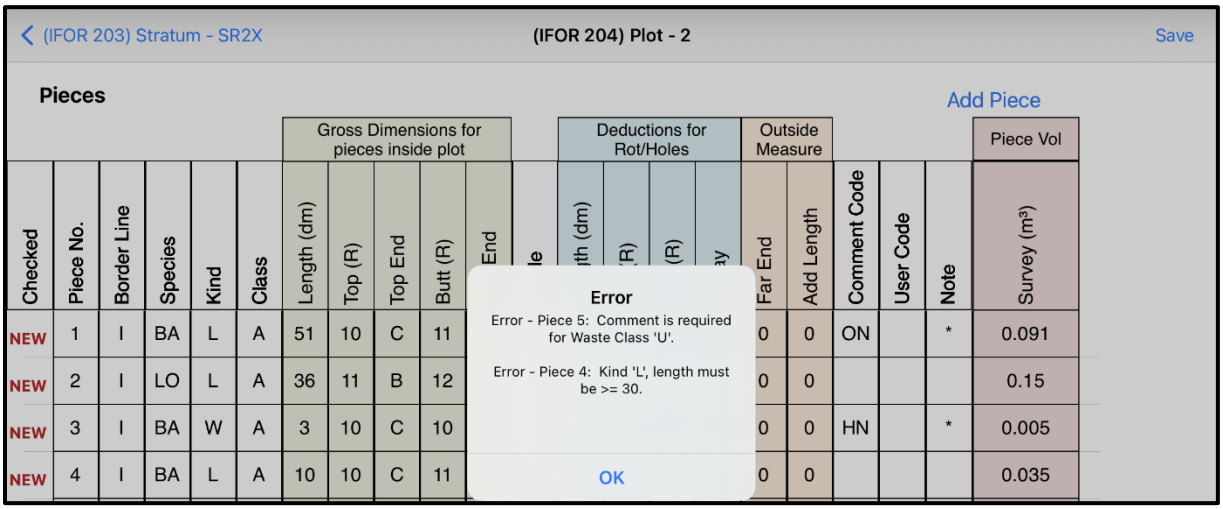
To correct an inaccurate code or numeric value, select the field and edit appropriately.

4.6.6.1 Errors

The following is a list of "Errors" that will **not** allow the user to continue until the values have been corrected. A popup window will appear describing the issue and showing the location of the missing or incorrect data.

- If **Class** = **U – Unavoidable,** then the **Comment Code** must be populated.
- If **Kind** = **L**, the Length (in Pieces section) must be greater than or equal to 3.0 m unless **Border Line** = **B**.
- If **Waste Type** = **D - Dispersed** and **Kind** = **W – Bucking / trimming waste**, then **Butt End** cannot be **B – Broken**.
- **Measure factor required**.
- **Measure factor cannot exceed 100%.**
- **Deduction length** cannot exceed piece **Length**.
- **Top deduction** cannot exceed piece **Top dimension**.
- **Butt deduction** cannot exceed piece **Butt dimension**.
- If **Maturity** = **Immature,** the Top must meet or exceed 5 Rads.
- If **Kind = S** (Stump) then Butt field should not be entered.
- Missing **Surveyors Name**.
- Missing **Licence**.
- Missing **Block** field.
- Missing **piece details**: Kind code, Grade Code, Species Code, Class Code, Borderline Code, Top End Code, Top Length, Butt, End Code Missing, Top cannot be less than 5r. Deduction Length>= to Piece length. Top deduction >= Top dimension. Butt >= Butt dimensions. Net volume <=0.

Example ‘Error’ below:



Example showing plot data ‘errors’.

These errors must be reviewed and corrected otherwise the User will **not** be able to proceed to the next screen.

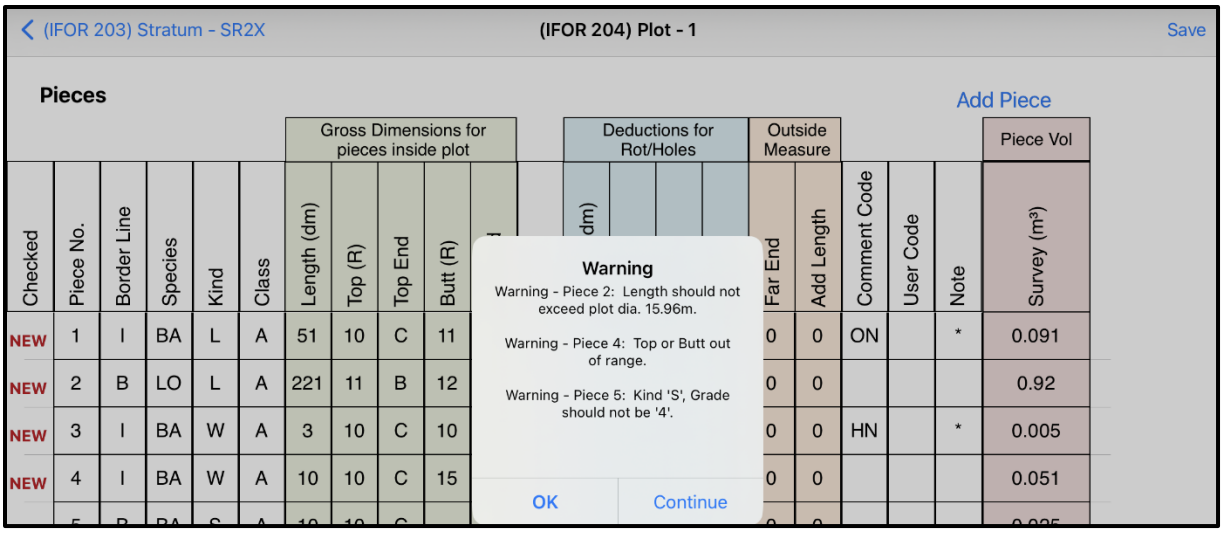
Note: *If Users encounter any error anomalies in the application, contact the district or area waste representatives. Be prepared with the survey file and screenshots to solve and/or replicate the issue.*

4.6.6.2 Warnings

The following is a list of “Warnings” that Users may encounter that will generate a warning popup window prompting Users to review the data before continuing to the next screen. These warnings are not considered errors hence the User may proceed without any corrections.

- **Top or Butt out of Range**
  - If the top is greater than the butt a warning is generated.
  - If the Top and Butt differ by more than 4 rads a warning is generated.
  - A simple taper equation (length X 1.25r) is used to estimate the top or butt diameter. If the dimension is outside of the calculation an error is generated
- **Length** should not exceed plot diameter.
- If **Kind = S** (Stump), Grade should not be ‘4’.

Example ‘warning’ below:



Example showing plot data 'warning'.

When a warning popup window appears Users can remain on the current screen to review and/or correct the potential issue by select the 'OK' button.

Otherwise, to continue navigating to the next screen and allow the item listed in the warning, without adjustment, select the 'Continue' button.

Note: *If Users encounter any* warning *anomalies in the application, contact the district or area waste representatives. Be prepared with the survey file and screenshots to solve and/or replicate the issue.*

4.7. Measure Factor

Where piling or deep accumulation exists or where pieces in a plot are unsafe to measure, obstructed, or inaccessible, a measure factor can be applied.

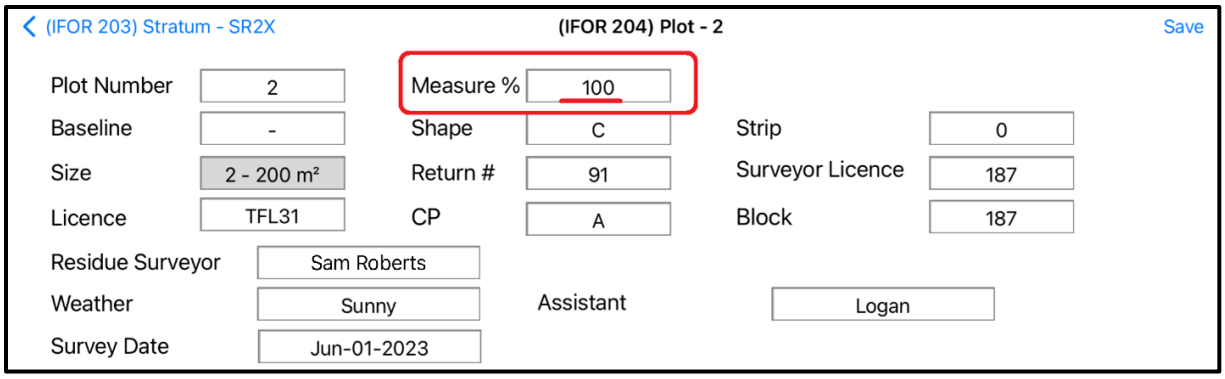
The measure factor is expressed as a percentage (%) and is used to adjust the volume of a plot to account for pieces that were not recorded by the surveyor within the plot. It must only be changed in the field (AKA: at the plot) and cannot be changed after the fact, in the office, or after the survey was submitted.

Note: *The measure factor % is an estimation however, it must accurately reflect and account for pieces that were not measured. Surveyors must record the measure factor % to the best of there ability.*

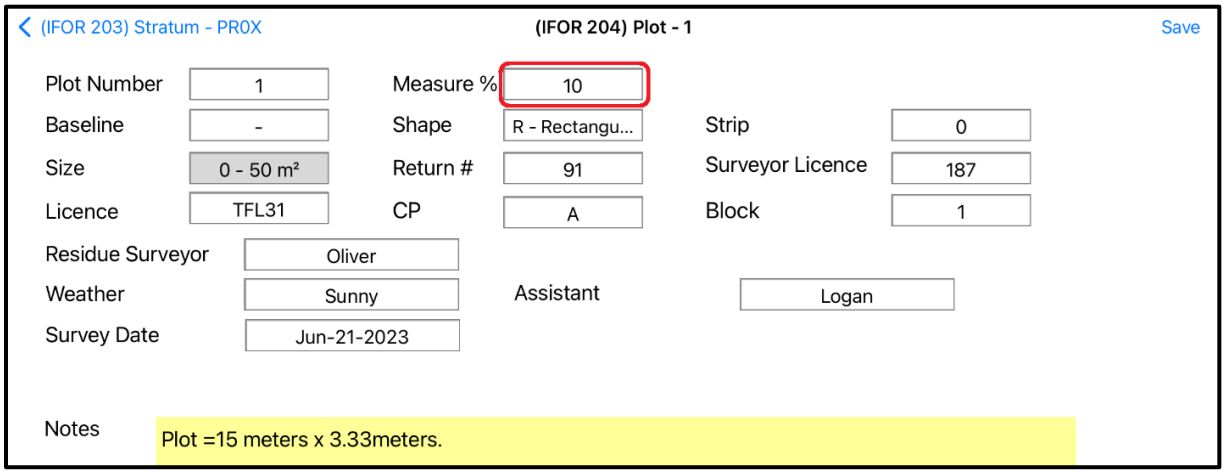
If the measure factor % is changed more than once it will trigger the endorsement of data changes pop-up window, where the User must endorse the measure % change and provide a rationale.

To adjust the measure factor in a plot:

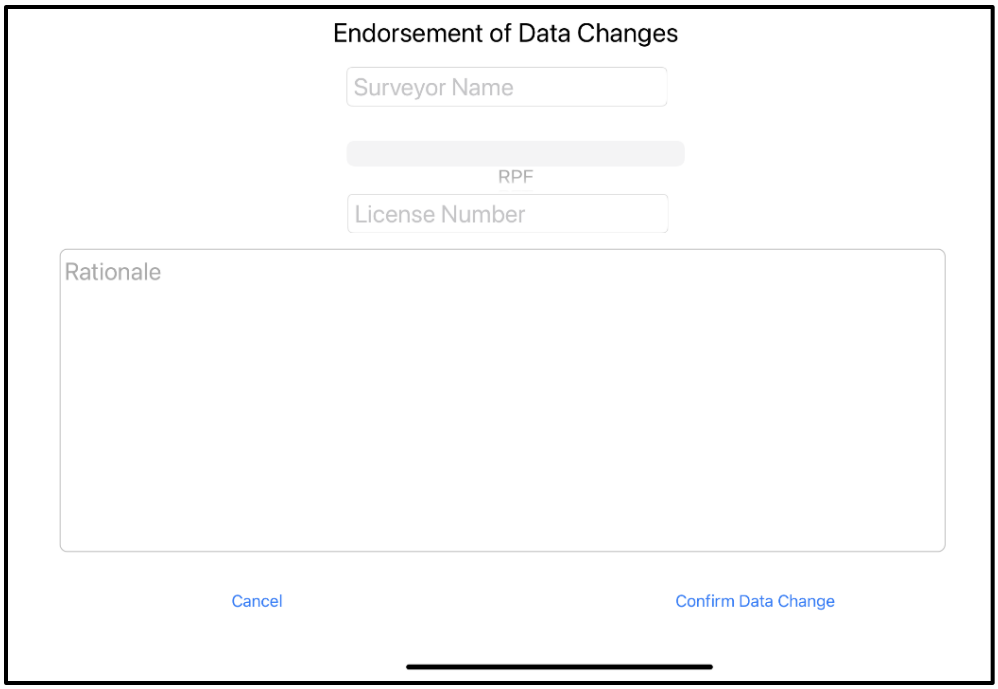
1. Select the measure % field on the '(IFOR 204) Plot' screen.



2. Populate the field with a correct measure factor %.



3. If necessary, Users may select and adjust the measure % field again, triggering the 'Endorsement of changes' pop-up window, where Users must endorse the measure % change:
    i. Fill out the Surveyors Name.
    ii. Select the Professional designation (if applicable).
    iii. Enter the registration number (if applicable)
    iv. Then include a Rational.



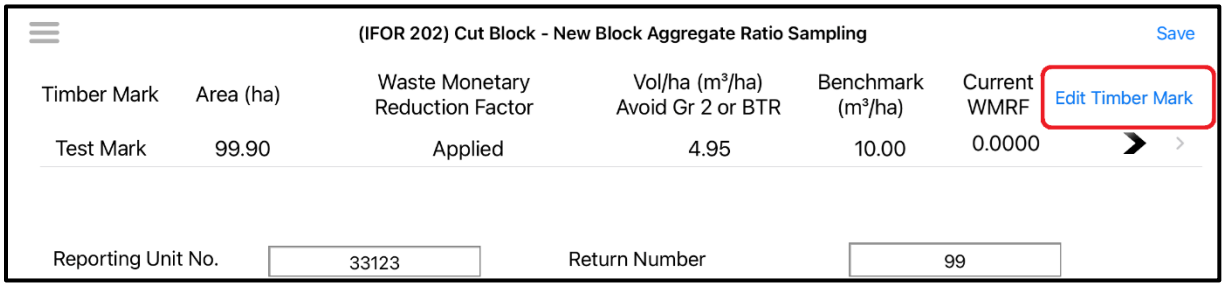
Note: *In a plot where the surveyor measured half of the plots volume, the measure % should be changed from 100% to 50%. A measure factor of 50% will double the plots volume.*

If the measure % change is not endorsed by a Forest Professional, the data change must be review by the Forest Professional responsible for the submission. The data change is then endorsed by the submitting or endorsing professional, when the Plot Prediction Report is included in the submission attachments.

5. Timber Mark

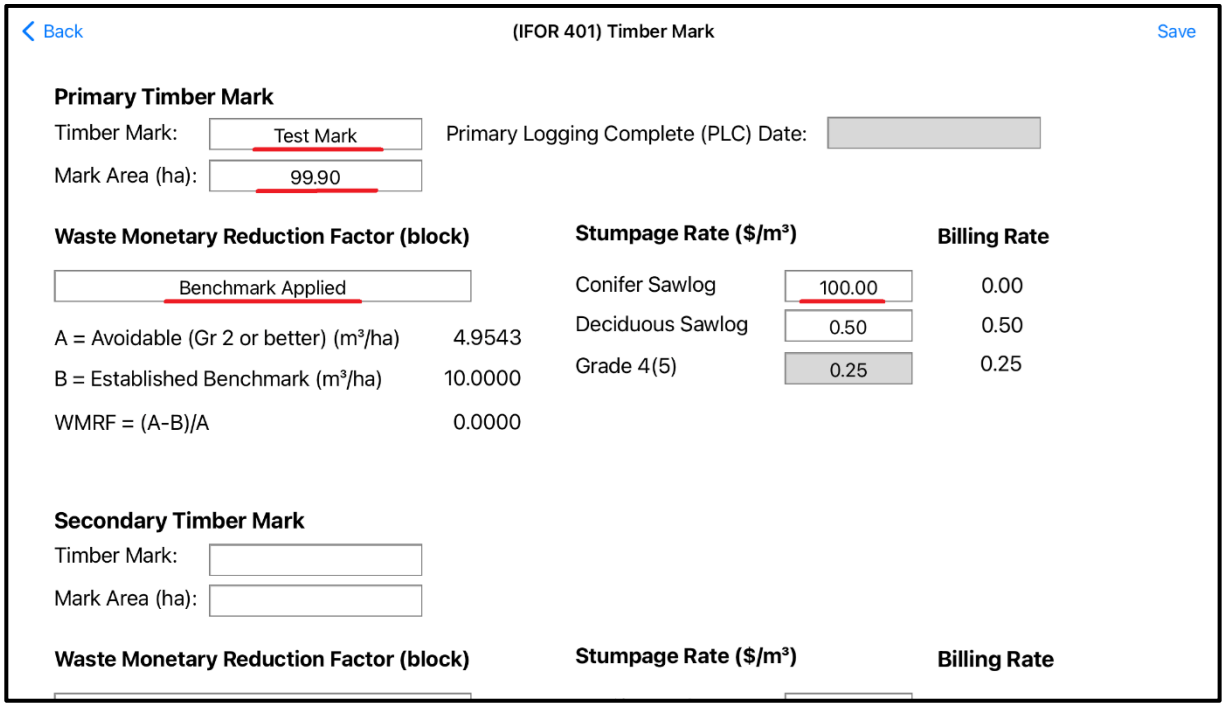
The (IFOR 401) Timber Mark screen contains all information pertaining to the Timber Mark for the cut block.

The Timber Mark data screen is accessed by selecting the 'Edit Timber Mark' button located in the top right corner of the 'IFOR 202 Cut Block' screen.



If more than one timber mark exists within the cutblock/aggregate, Users can add or edit both the Primary Timber Mark and Secondary Timber Mark.

Note: *The system only uses the primary mark information for calculating the value in the summaries.*



To Populate the 'Timber Mark' field:

1. Select the blank field and enter the applicable timber mark for the cut block.

2. Populate the ‘Mark Area’ by select the blank field. Enter the Net Area from the Cut Block Screen.

3. The Waste Monetary Reduction Factor (block) can be toggled between:
   - Benchmark applied – Applies the applicable WMRF factor to the Waste Billing rate. Or,
   - Benchmark Not applied – Does not apply the WMRF to the applicable waste billing rate. The Billing rate used in the application will be the unadjusted stumpage rate.
4. Enter the applicable stumpage rates.

The conifer sawlog stumpage rate can be obtained from the HBS ‘rating’ tab. It is calculated in accordance with the waste manual. The waste billing rate will be the applicable stumpage rate multiplied by the WMRF.

The Billing Rate is the stumpage rate (sawlog, deciduous, Coast HB U, X and Y grade, Interior 1 and 2) multiplied by the WMRF. The waste billing rate will be the applicable stumpage rate multiplier (I.E. Sawlog Rate $10.25 = Waste Billing rate $10.25).

6. Deleting a Survey file

Where survey data is no longer needed on the iPad, Users can remove previously created survey file via the 'view created' screen or from the cutblock screen. Either method will result in permanent deletion of the survey file where data cannot be recovered. Users are encouraged to save survey data on their PC before initiating deletion.

Note: ***Once a survey or cutblock is deleted all data (the entire file) will be deleted. Once deleted the data cannot be recovered.***

6.1. Deleting Survey Files

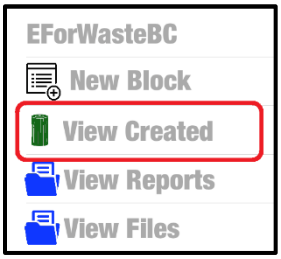
Users can delete a previously created survey file that is no longer needed on the iPad application. Use the view created screen to view created blocks and access block data on the iPad from current or previous surveys.

Note: **Once a survey is deleted it cannot be recovered hence all data will be lost.**

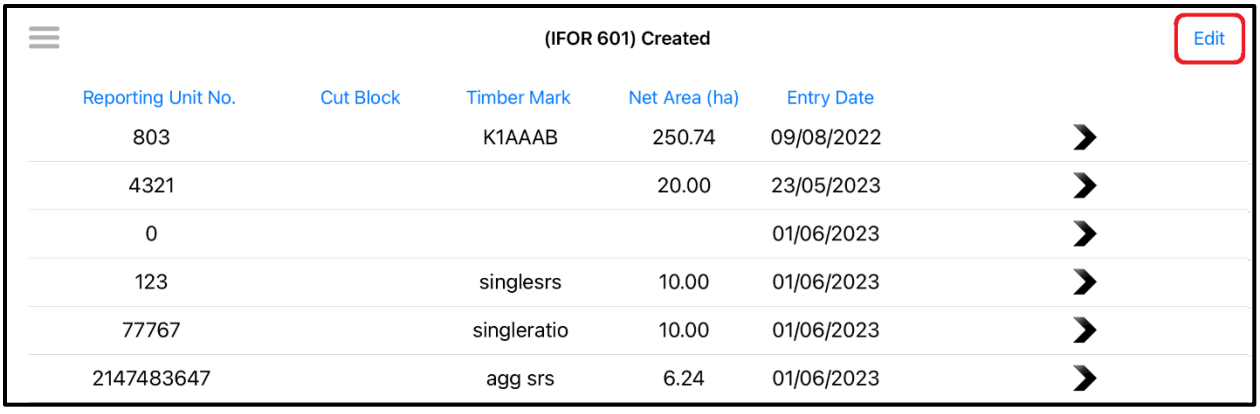
To delete previously created survey files:

1. Select the EForWasteBC Menu button.

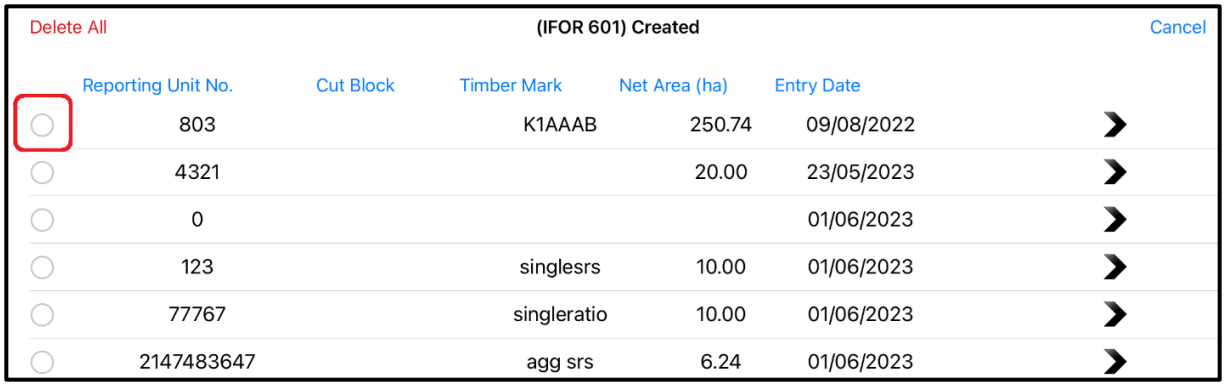
2. Select 'View Created'.



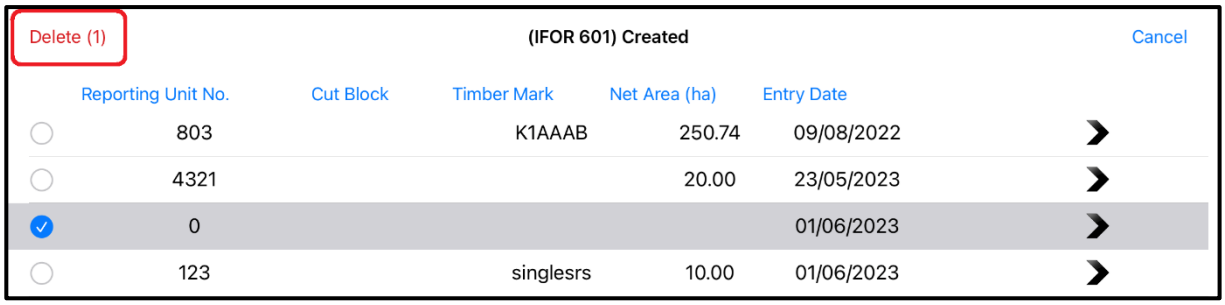
3. All previously created survey files will be listed. Select the 'edit' button.



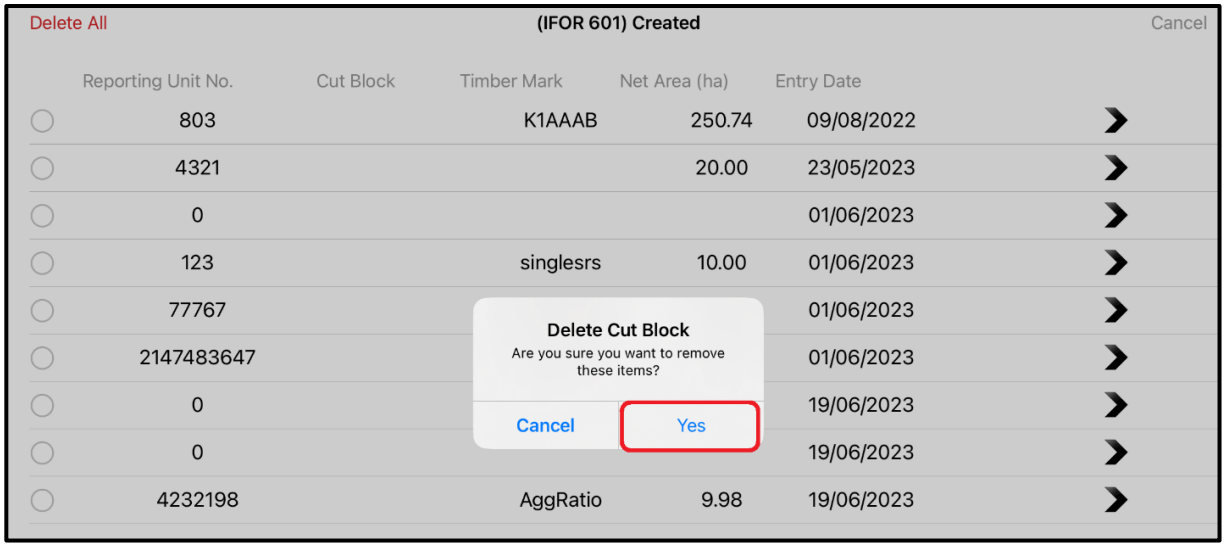
4. Users can delete all blocks by selecting ‘Delete All’ or, can delete a particular survey by selecting the circle, located under the ‘Delete All’ button, on the specific row of the survey to be deleted.



5. Once the specified survey file is chosen, select the ‘Delete ( )’ button to proceed.



6. A pop-up window will appear, select ‘Yes’ to proceed or, select ‘cancel’ to exit the deletion confirmation.

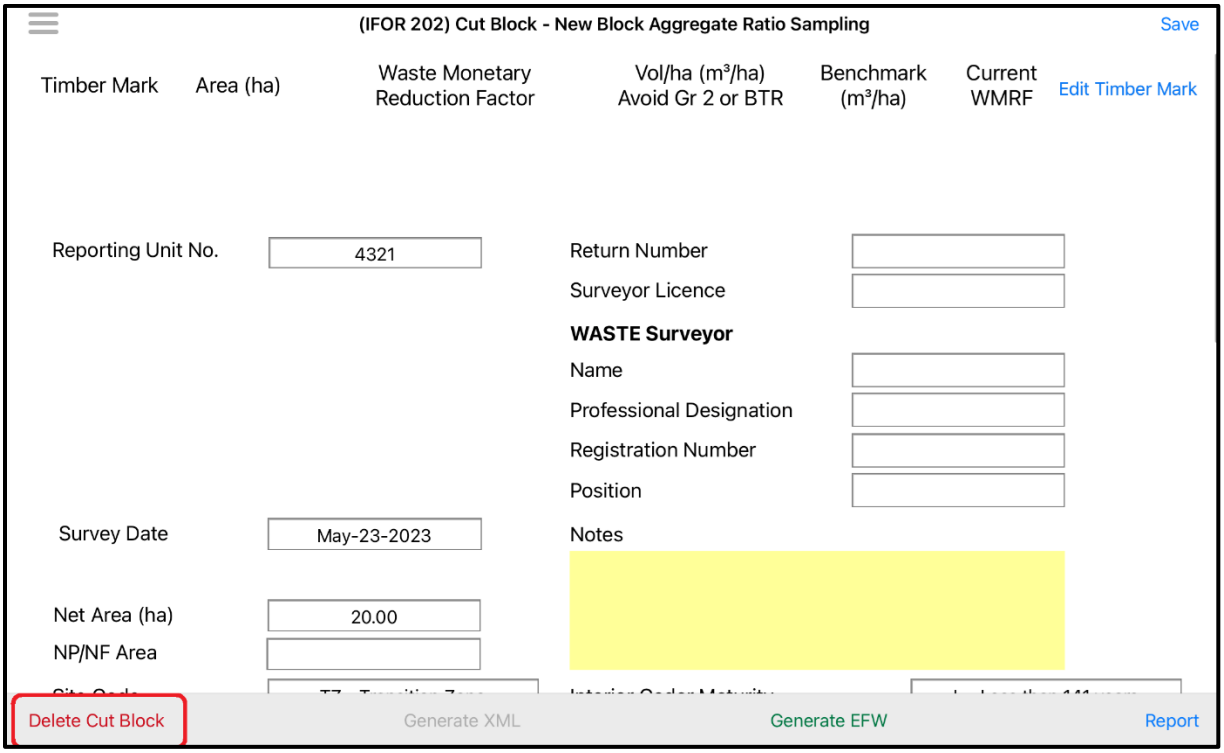


6.2. Deleting a Cut Block

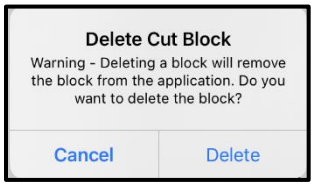
The waste surveyor can delete a 'cut block' (AKA: survey file) from the '(IFOR202) Cut Block – New Block' screen.

Individual cutblocks cannot be deleted. Deleting a cutblock refers to deleting the entire survey file which includes all blocks in the survey file.

1. On the '(IFOR202) Cut Block – New Block' screen, select the 'Delete Cut Block' button, located in the bottom left of the screen.



2. A 'Delete Cut Block' pop-up window will appear to confirm the deletion.



3. Select 'Delete' to proceed with the removal of all associated data from the cut block. Or select 'Cancel' to exit the deletion screen and return to the cut block screen.

Reminder: ***Once a cutblock is deleted, it cannot be recovered hence all data will be lost.***

7. Generating, Exporting, and Importing EFW files

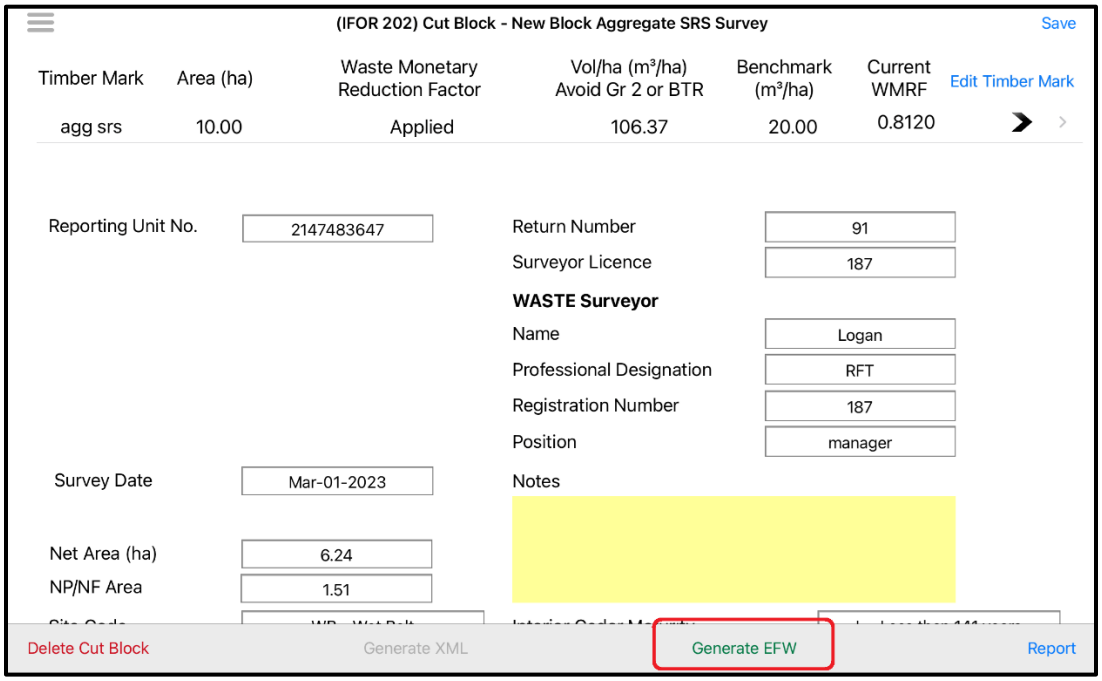
The EForWasteBC application allows Users to generate, export, import and merge .efw files.

The generated .efw files will be stored and hence viewable on the EForWasteBC application. Users can manage, view, delete or transfer files that have been exported from a cutblock or imported to the iPad via the 'View Files' screen.

7.1. Generating EFW Files

Survey data can be exported into a .efw file for upload into HRC.

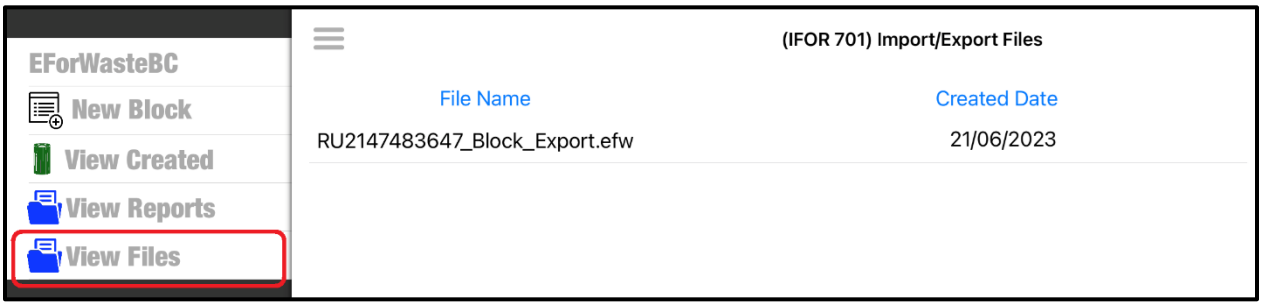
1. On the '(IFOR202) Cut Block – New Block Survey' screen, select the 'Generate EFW' button, located at the bottom of the window. Data will be exported to a .efw file and saved on the iPad.



2. Once the 'Generate EFW' button is selected the 'Export Cut Block' pop-up window will appear. Select 'OK' to proceed.

3. Users can find the exported .efw file in the 'View Files' screen by selecting the 'Menu' button.

4. Then select 'View Files' where the generated file will be viewable on the '(IFOR 701) Import/Export files' screen.



Note: ***Any changes made to the survey data on the iPad will require the User to re-generate the .efw file as to reflect and capture any data changes.***

7.2. Exporting .efw files

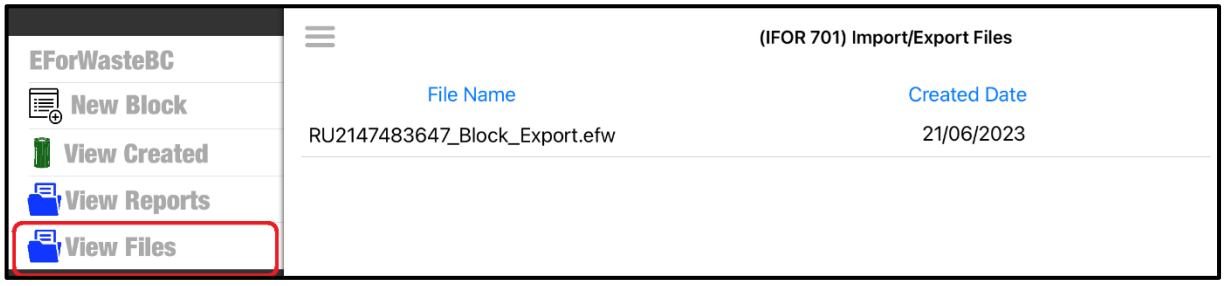
Once Users have successfully generated a .efw file, they can be exported via email, AirDrop or the iTunes file sharing application.

7.2.1. Exporting via email

EFW files can be emailed directly from EForWasteBC via the 'IFOR701 Import/ Export Files' screen.

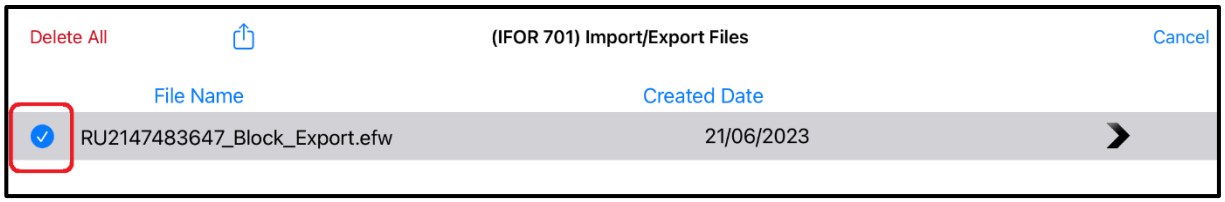
To email a file:

1. Navigate to the '(IFOR 701) Import/Export Files' screen by selecting the menu button then select the 'View Files' button.

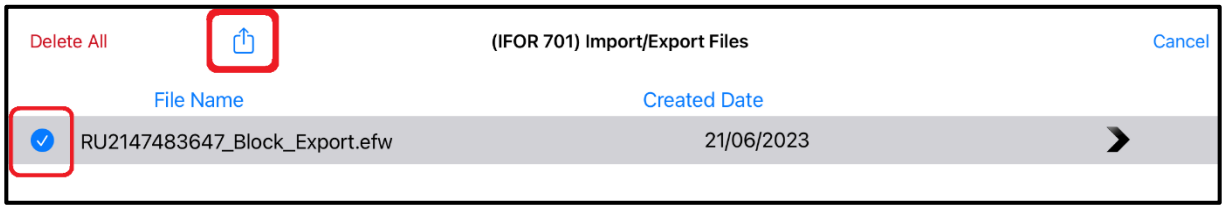


2. Select 'Edit' button on the '(IFOR 701) Import/Export Files' screen.

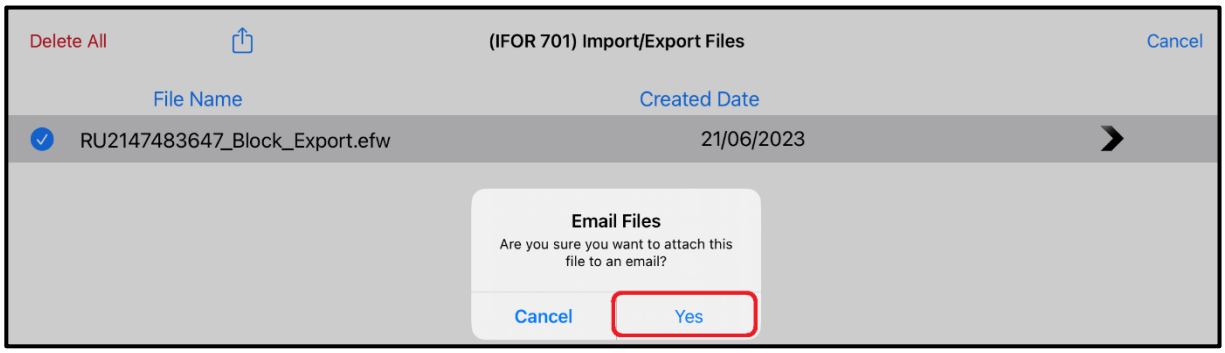
3. Select the file(s) to be emailed. A file will appear selected when a checkmark appears in the blue circle left of the .efw file



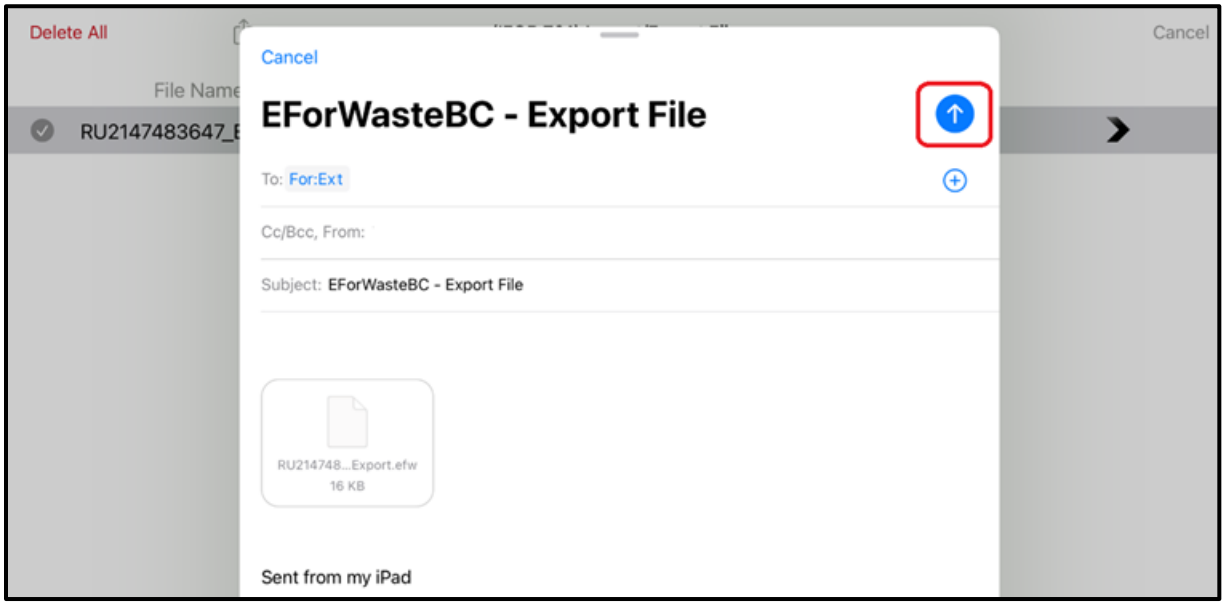
4. Select the ‘share file’ icon.



5. Select ‘Yes’ when prompted, to attach the file to an email.



6. An email will generate with the attached file(s). Address the email and select ‘Send’.



Note: *The iPad must be connected to Wi-Fi/ cellular data for the email export to function.*

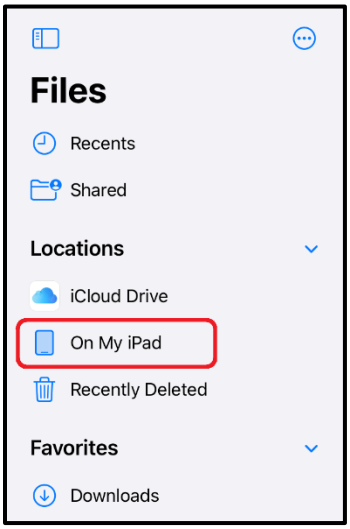
7.2.2. Exporting via AirDrop

Once a .efw file has been generated Users can view the created file on the iPad using the apple 'Files' app, where Users can send the file electronically, via the apple 'air drop' function.

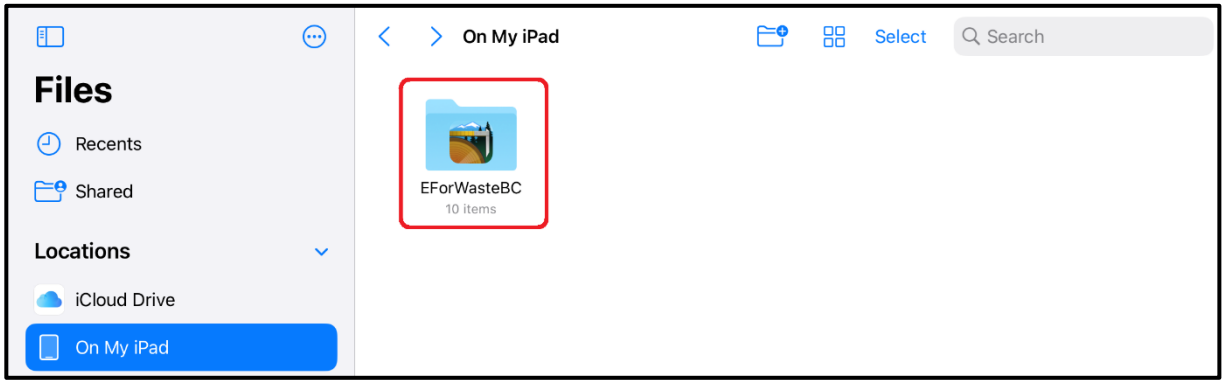
1. Navigate to and open the iPads 'Files' app.

Note: *If you cannot find the blue 'Files' app icon on your Home Screen, swipe down, then search for the 'Files' app.*

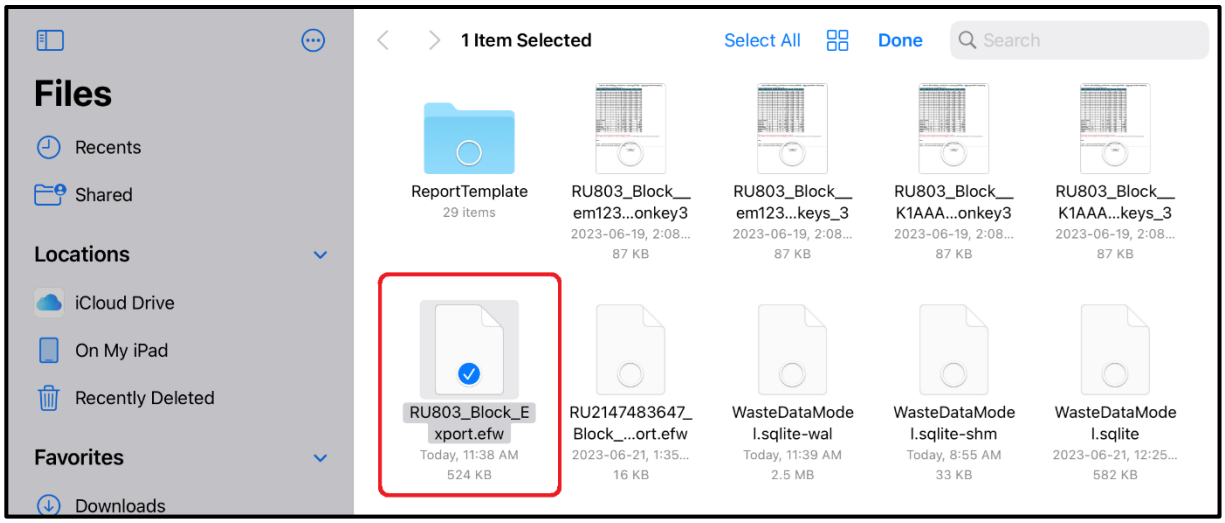
2. In the 'Files' app tap 'On My iPad', under locations.



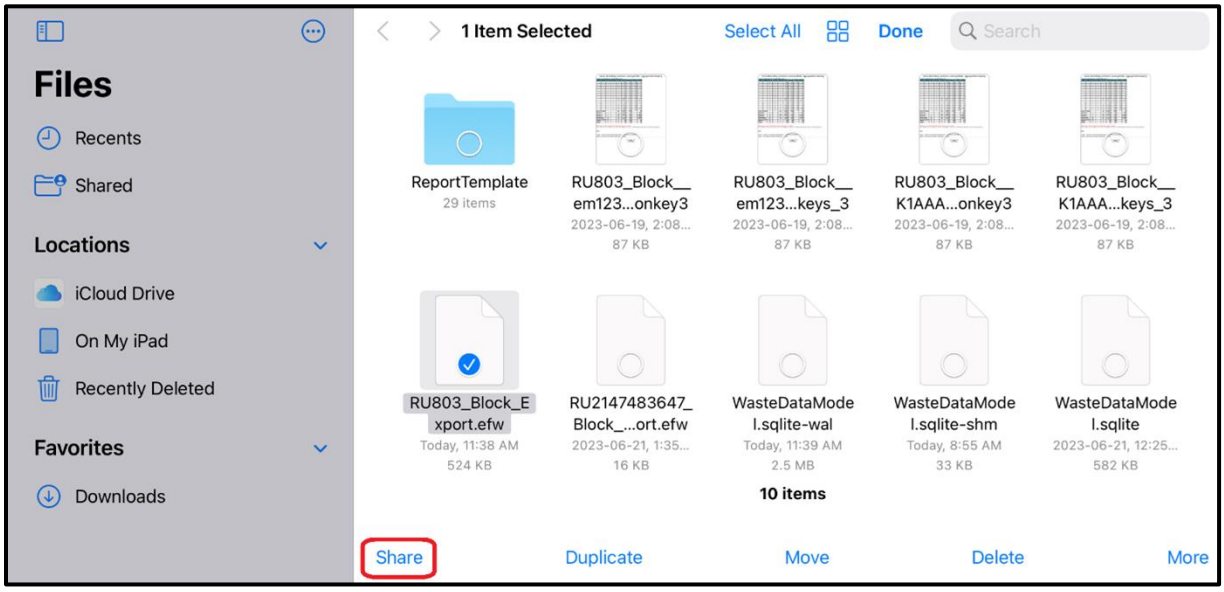
3. Next, select the 'EForWasteBC' folder.



4. Users will be able to locate the generated .efw file. Click on the 'Select' button and choose the file of note.



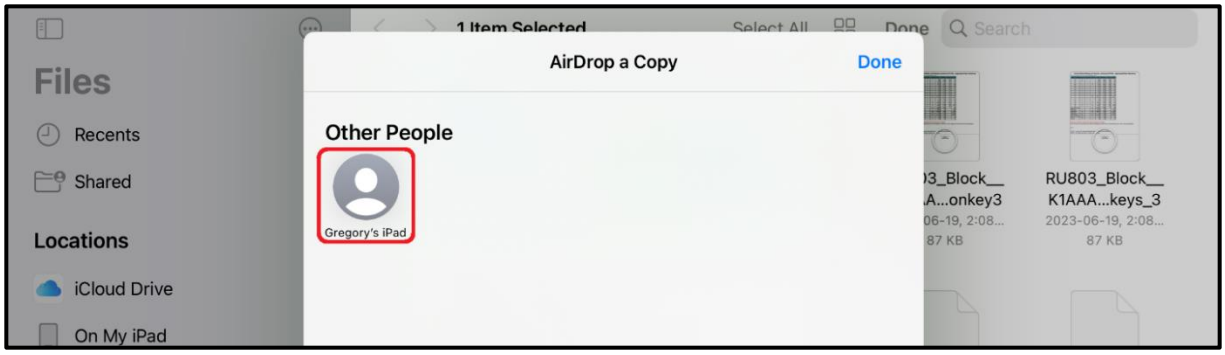
5. Find and select the ‘Share’ button.



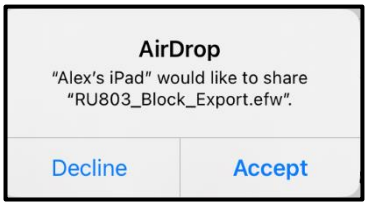
6. Select the ‘AirDrop’ icon.

7. Find and select a nearby compatible device that you would like to transfer the file(s) to.

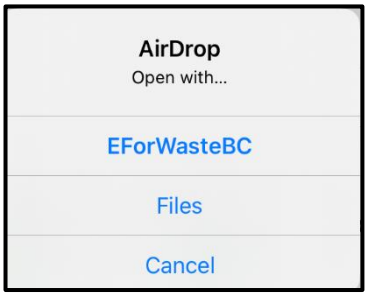
Note: *AirDrop must be turned-on, on either device for the file transfer to function.*



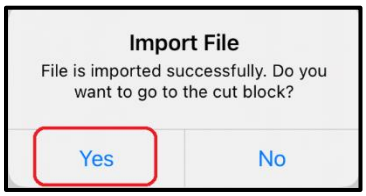
8. Once the transferee is selected, they will receive an AirDrop notification where they must select 'Accept'.



9. If the AirDrop is 'Accepted' the User must indicate what to do with and where to open the file. The User must select 'EForWasteBC' to view the file on the application.



10. To view the transferred file on the device, select 'Yes' and the User will be transported to the survey file on the '(IFOR 202) Cut Block' screen.

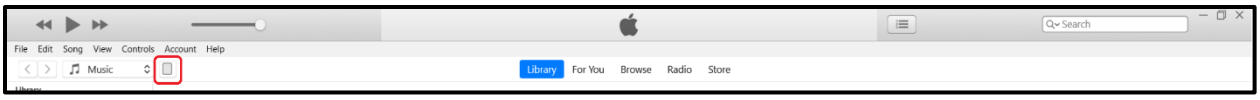


7.2.3. Exporting via iTunes

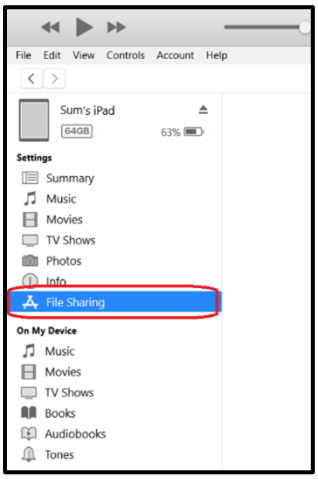
1. On your PC, open the iTunes application.

2. Connect the iPad to the computer via compatible USB cable that came with your device. The iPad device must be viewable on iTunes.

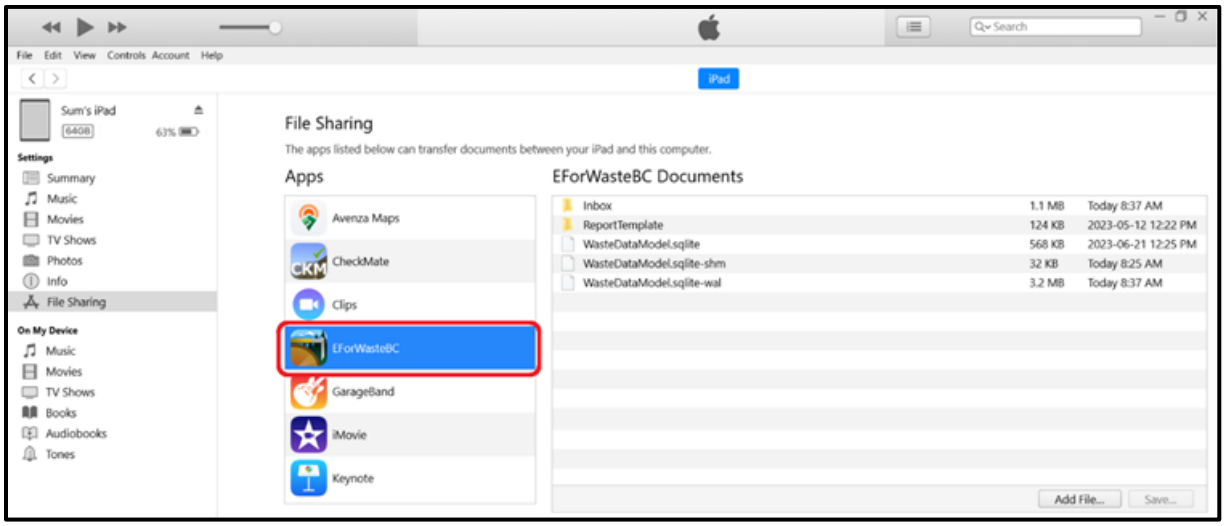
3. Select the device to navigate to it.



4. In the left sidebar, select ‘File Sharing’.



5. Select the EForWasteBC application on the iTunes window.



6. Users can either drag and drop files from the EForWasteBC Documents or select the desired file to be transferred to the PC and select the ‘save’ button.

7.3. Importing .efw files

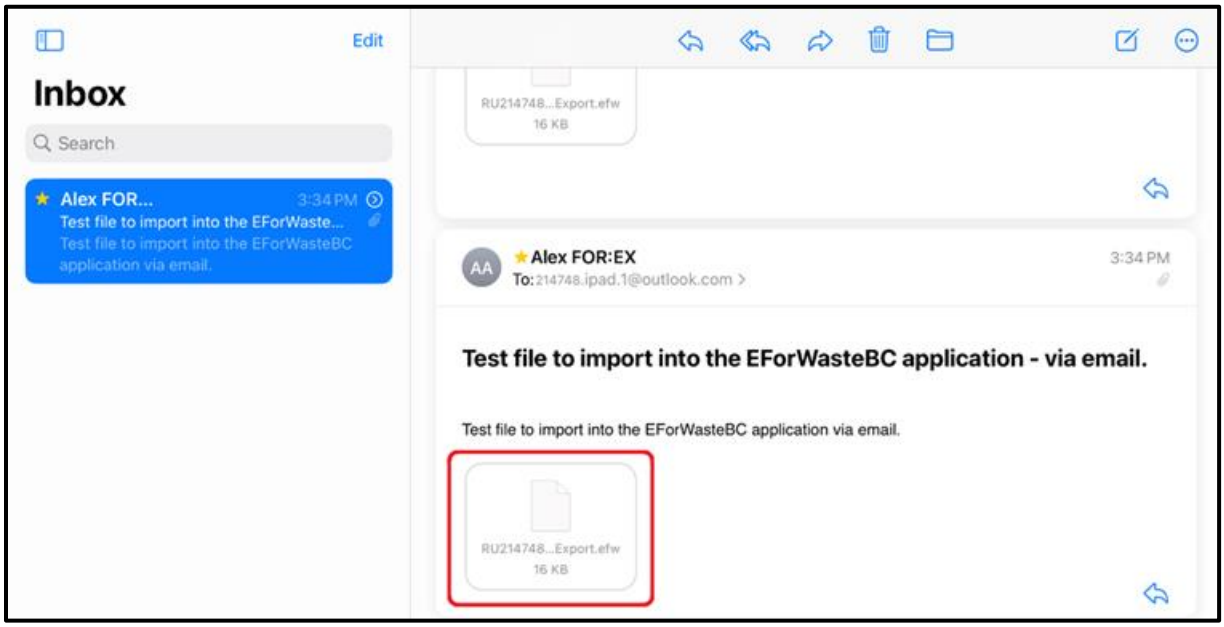
Survey data can be imported into EForWasteBC via email, iTunes, or AirDrop. Survey data imported through email can be accessed and opened directly from the email as an attachment. Survey data imported via iTunes must be manually transferred and stored on the 'View Files' page which can be then 'imported' into the 'View Created' page.

7.3.1. Importing via email

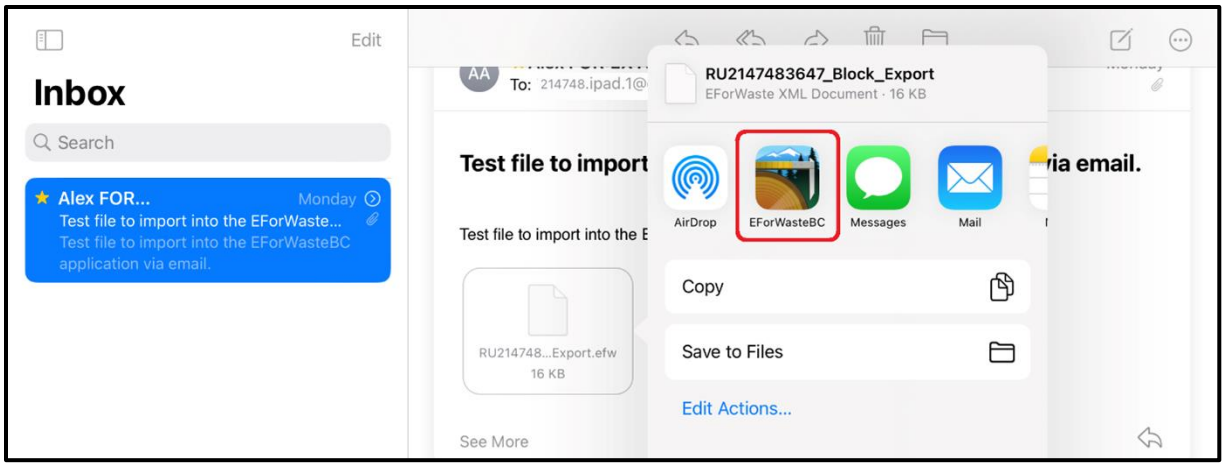
The .efw files can be imported directly into EForWasteBC from emails.

1. On the iPad, open an email containing a .efw file.

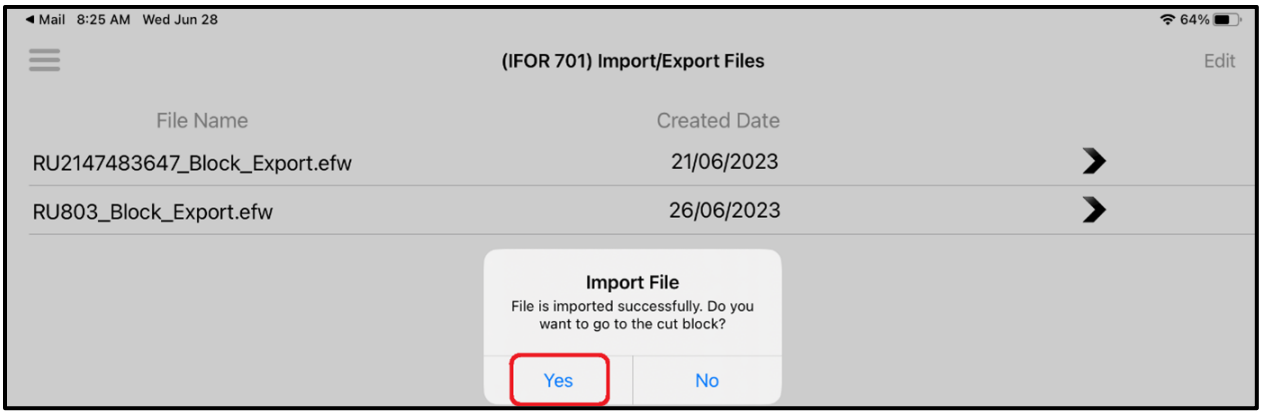
2. Select the .efw file icon in the email to start the importing process.



3. Select the EForWasteBC application icon from the sharing dropdown. The file will be imported directly into EForWasteBC.



4. A pop-up window will appear if the import was successful. Select 'Yes' to be transported to the cutblock data.

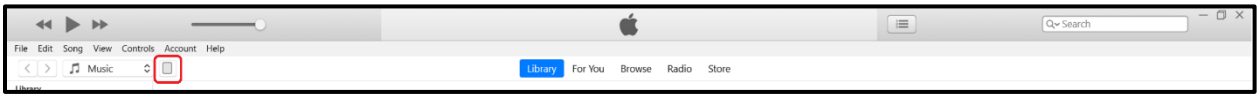


7.3.2. Importing through iTunes

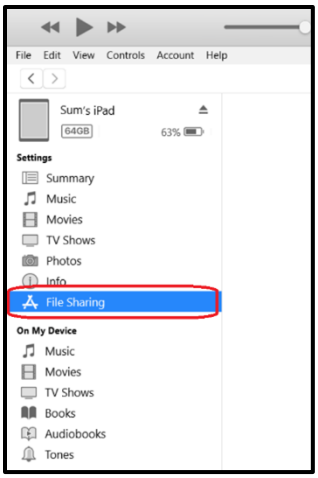
7. On your PC, open the iTunes application.

8. Connect the iPad to the computer via compatible USB cable that came with your device. The iPad device must be viewable on iTunes.

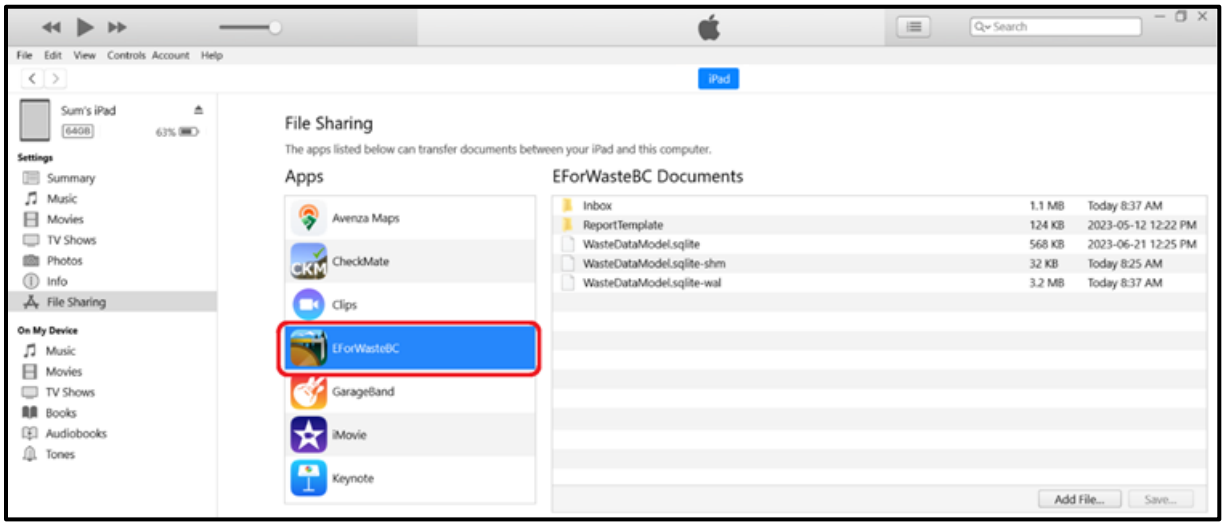
9. Select the device to navigate to it.



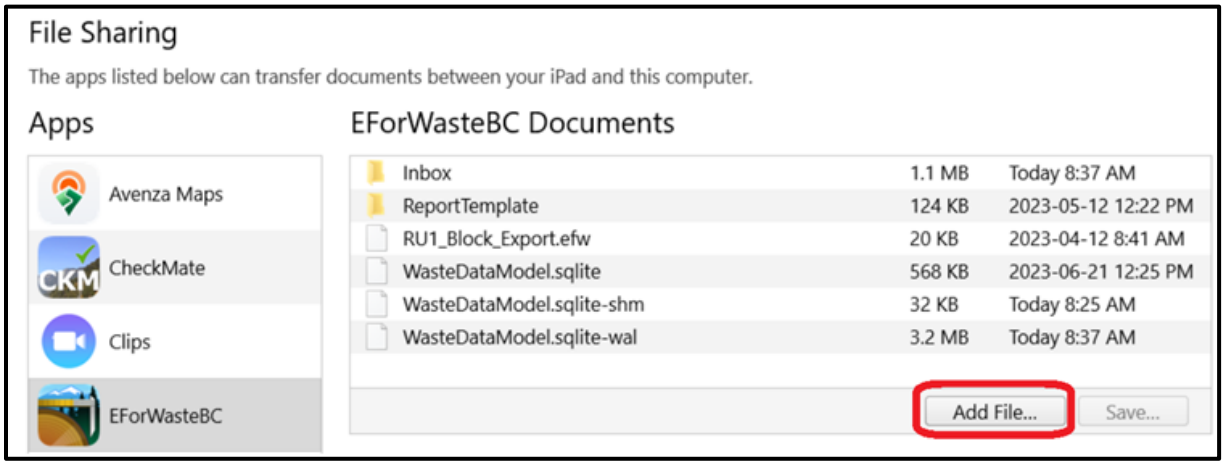
10. In the left sidebar, select 'File Sharing'.



11. Select the EForWasteBC application on the iTunes window.

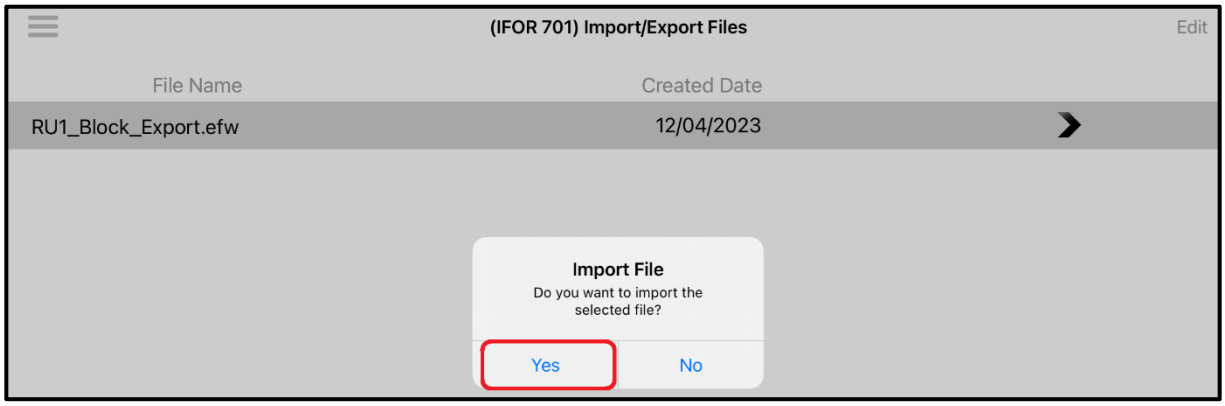


12. Users can either drag and drop files into the EForWasteBC Documents or select ‘Add File’ button to navigate the PC to find the file to be imported.



13. On the iPad navigate to the '(IFOR 701) Import/ Export Files' view screen where the imported file will be visible.

14. On the iPad, select the file. A window will appear asking if you want to import the selected file.



15. Select 'Yes' and the block will be downloaded into the '(IFOR 601) Created' screen.

7.4. Merging Files

The EForWasteBC application allows users to merge multiple .efw files created on different iPads. To trigger the merge function, users must import a survey file. Upon import, the application checks for an existing .efw file on the device with specific matching fields and prompts users to merge the imported data with another block if a match is found. Matching specific fields is essential for the merge to proceed. If these fields do not match precisely, the incoming file will not merge.

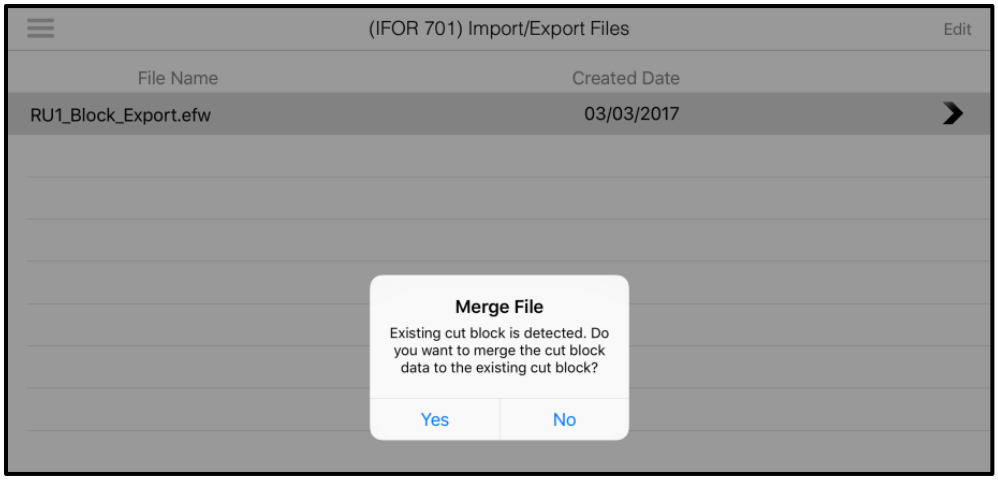
The merge feature will only succeed if the following conditions exist:

Cut Block screen (IFOR 202)								
Fields	**Interior**				**Coast**			
	SRS Single	**Ratio Single**	**SRS Agg**	**Ratio Agg**	**SRS single**	**Ratio Single**	**SRS Agg**	**Ratio Agg**
Reporting Unit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CP	Yes	Yes	N/A	N/A	Yes	Yes	N/A	N/A
Cutblock	Yes	Yes	N/A	N/A	Yes	Yes	N/A	N/A
Licence	Yes	Yes	N/A	N/A	Yes	Yes	N/A	N/A
Logged From	Yes	Yes	N/A	N/A	Yes	Yes	N/A	N/A
Logged To	Yes	Yes	N/A	N/A	Yes	Yes	N/A	N/A
Logging Complete	Yes	Yes	N/A	N/A	Yes	Yes	N/A	N/A
Survey Date	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CB Net area	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site Code	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A
Maturity Code	N/A	N/A	N/A	N/A	Yes	Yes	Yes	Yes

Stratum screen (IFOR 203)								
Fields	**Interior**				**Coast**			
	SRS Single	**Ratio Single**	**SRS Agg**	**Ratio Agg**	**SRS single**	**Ratio Single**	**SRS Agg**	**Ratio Agg**
Stratum Area	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Measure Plot	N/A	Yes	N/A	Yes	N/A	Yes	N/A	Yes
Prediction Plot	N/A	Yes	N/A	Yes	N/A	Yes	N/A	Yes

Timber Mark screen (IFOR 401)								
Fields	**Interior**				**Coast**			
	SRS Single	**Ratio Single**	**SRS Agg**	**Ratio Agg**	**SRS single**	**Ratio Single**	**SRS Agg**	**Ratio Agg**
Primary TM Name	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Primary TM Area	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: ***Deleting plots to ensure successful merge must be avoided.***
If Users encounter any merge *anomalies in the application, contact the district or area waste representatives. Be prepared with the survey file and screenshots to solve and/or replicate the issue.*



If any of these fields above do not match, the merge will fail, and the application will show a list of mismatched field names.

A stratum cannot contain duplicate plot numbers. Where duplicate plot number exists, the merge will fail, and the application will show a list of duplicate plot numbers.

All remaining fields, including the Return number, surveyor License, waste surveyor name, designation, registration number, position, and notes do not need to match in either file and should remain distinct

for each surveyor responsible for data collection in their respective survey files. Post-merge, these fields will be appended to the data contained in the receiving file.

7.4.1. The Merging Process

EForWasteBC allows two files, (original and imported files) to be merged into one file. The merged file will contain all relevant block header information as well as all plot data combined from each file.

Example:

iPad A (original):	
RU:	123456
License:	A98765
Cutblock:	1
Stratums / Plots:	SB2X: 1, 3, 5, 10, 12
	PB0X: 1,2,3,4

+

iPad B (imported file):	
RU:	123456
License	A98765
Cutblock:	1
Stratums / Plots:	SB2X: 2, 4, 6, 7, 8, 9, 11
	PB0X: 5, 6
	CCSX: 1

=

Resulting merged file:	
RU:	123456
License	A98765
Cutblock:	1
Stratums / Plots:	SB2X: 1,2,3,4,5,6,7,8, 9, 10,11,12
	PB0X: 1,2,3,4,5,6
	CCSX: 1

Note: Plot header information created within each file will be retained after a merge. Any notes contained in each file will be appended to the originating file.

To merge .efw files, follow the instructions below:

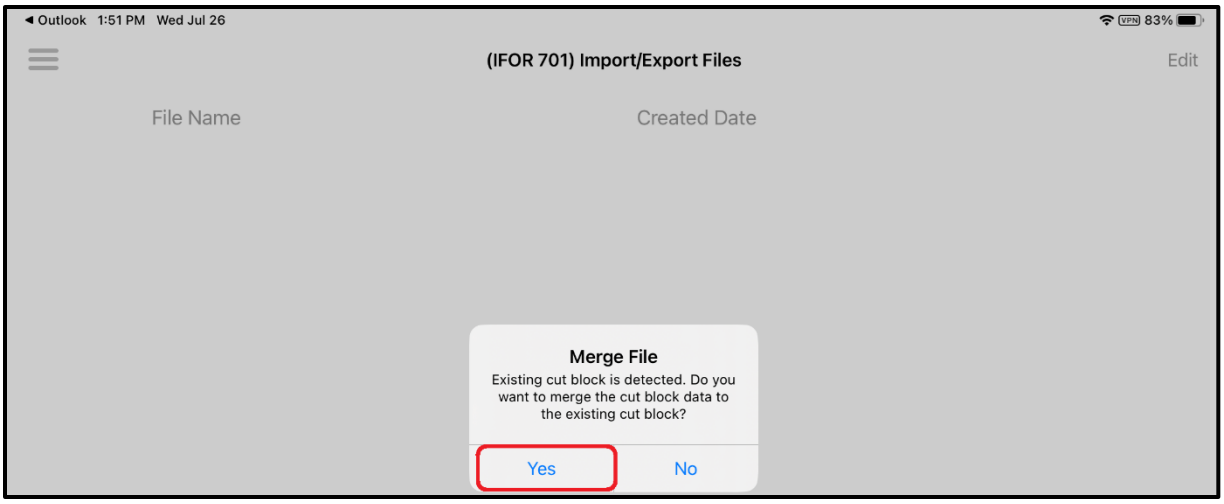
1. On the iPad receiving any files, open the EForWasteBC application.

2. On another iPad, export the survey data (via email or AirDrop). Or export via iTunes file transfer.

3. On the iPad receiving any files, import the incoming survey file to commence the merge, allowing the application to recognize whether an existing .efw file with the same Cut Block ID, Cutting Permit ID (CP), Reporting Unit number and License exists.

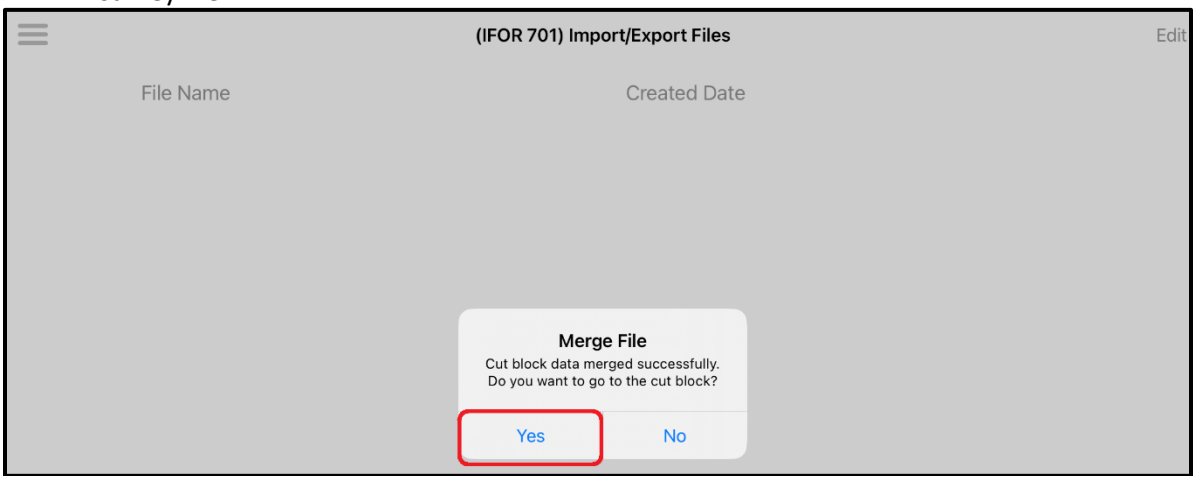
4. If the .efw files have matching values a pop-up window will appear asking the user if the imported data should be merged with another block.

Note: If the Cut Block ID, Cutting Permit ID (CP), Reporting Unit number and License are not identical in either file, the merge pop-up window will not appear. Instead, Users will receive a pop-up confirming successful import and will be prompted to navigate to the cut block.



5. Select ‘Yes’ to proceed with the merge.

6. Another pop-up window will appear notifying the User whether the merge was successful or not and whether the user would like to view the merged survey file. Select ‘Yes’ to proceed to the survey file.



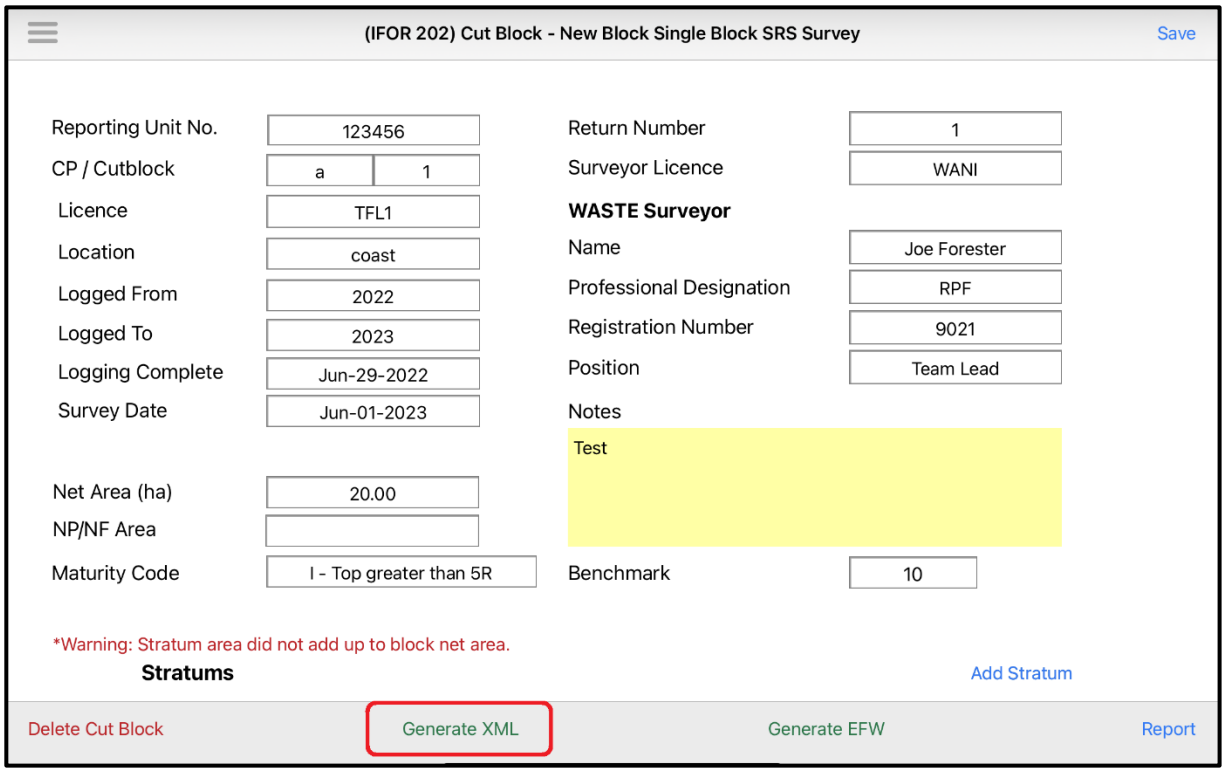
8. Generating XML Files

For single block SRS populations Users can generate an .xml (Extensible Markup Language) file for upload into the online Waste System via the Electronic Submission Framework (ESF).

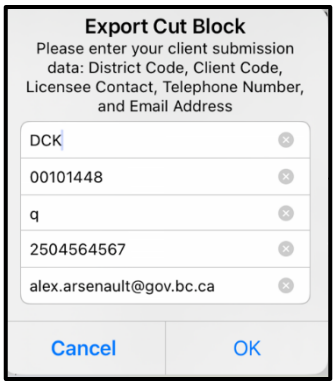
Note: *Interior aggregate SRS, single block ratio and aggregate ratio survey populations will require generation and upload of the .efw file into HRC for compiling. Once compiled a .xml file can be generated in HRC and uploaded to the Waste System.*

To generate a .xml file for single block SRS populations in EForWasteBC:

1. Once the field survey data collection is complete, select the 'Generate XML' button, found at the bottom of the screen.



2. The 'Export Cut Block' pop-up window will appear, populate the District code, Client Code, Licensee Contact, Telephone number and Email Address. Then select ' OK' to continue.



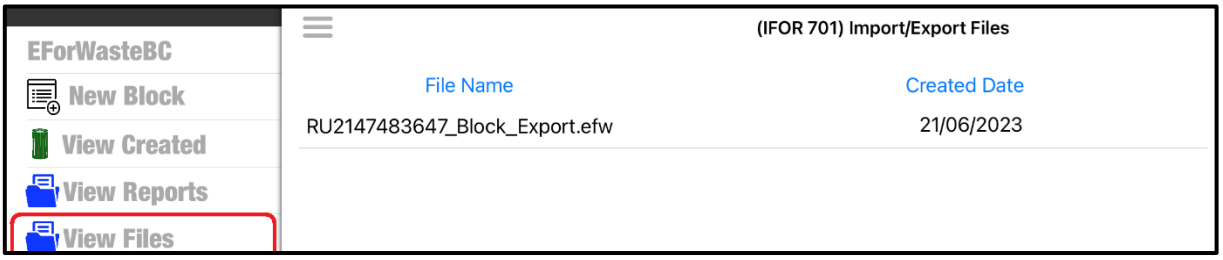
3. If there are no errors the .xml will generate successfully. Select 'OK' to continue.

8.1. Exporting XML Files — Email

XML files can be emailed directly from EForWasteBC via the 'IFOR701 Import/ Export Files' screen.

To email a file:

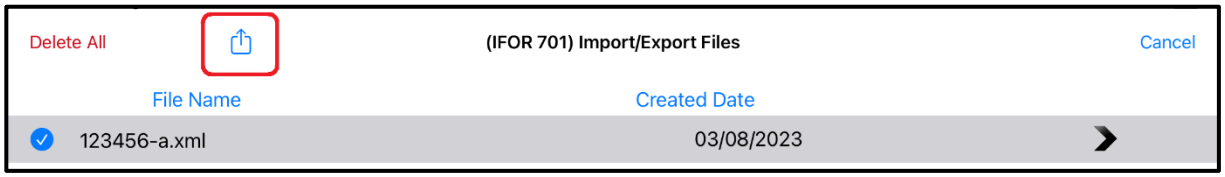
1. Navigate to the '(IFOR 701) Import/Export Files' screen by selecting the menu button then select the 'View Files' button.



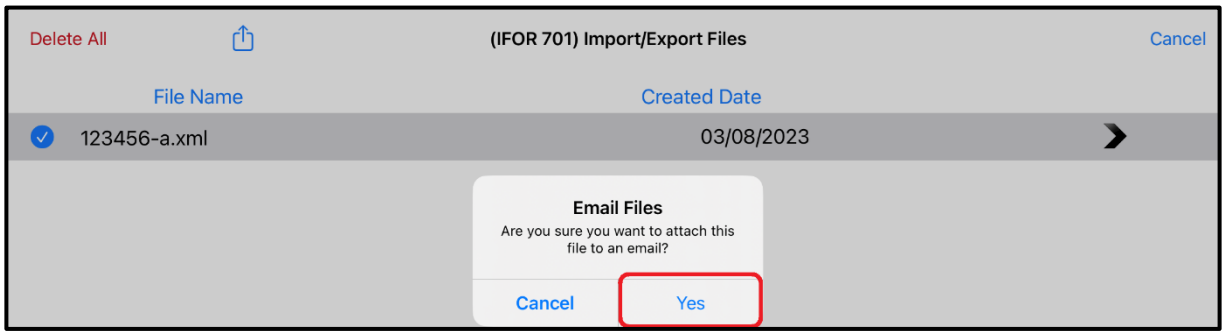
2. Select 'Edit' button on the '(IFOR 701) Import/Export Files' screen.

3. Select the file(s) to be emailed. A file will appear selected when a checkmark appears in the blue circle left of the .efw file

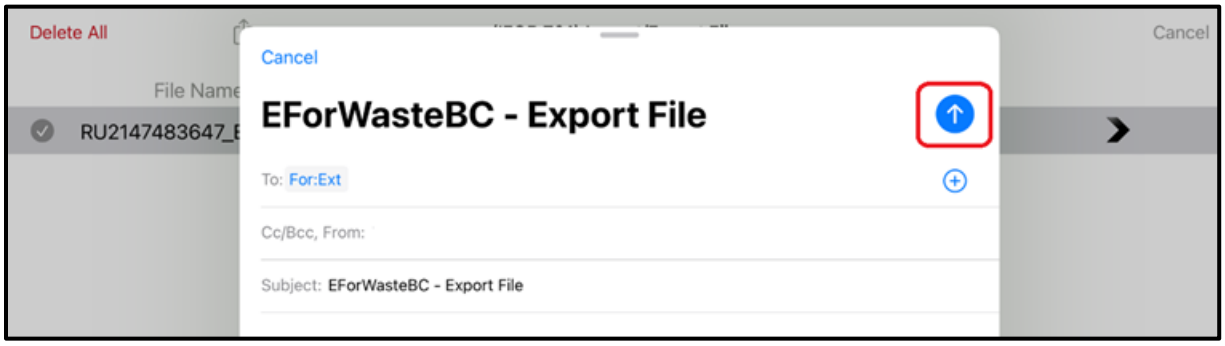
4. Select the ‘share file’ icon.



5. Select ‘Yes’ when prompted, to attach the file to an email.



7. An email will generate with the attached file(s). Address the email and select ‘Send’.



Note: *The iPad must be connected to Wi-Fi/ cellular data for the email export to function.*

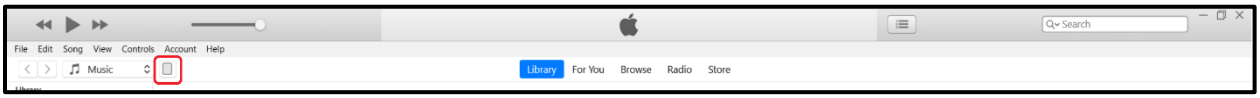
8.2. Exporting XML Files — With iTunes file transfer

1. Once the field survey data collection is complete, generate the XML file in the application.

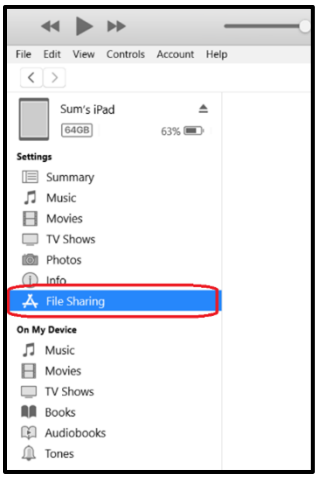
2. On your PC, open the iTunes application.

3. Connect the iPad to the computer via compatible USB cable that came with your device. The iPad device must be viewable on iTunes.

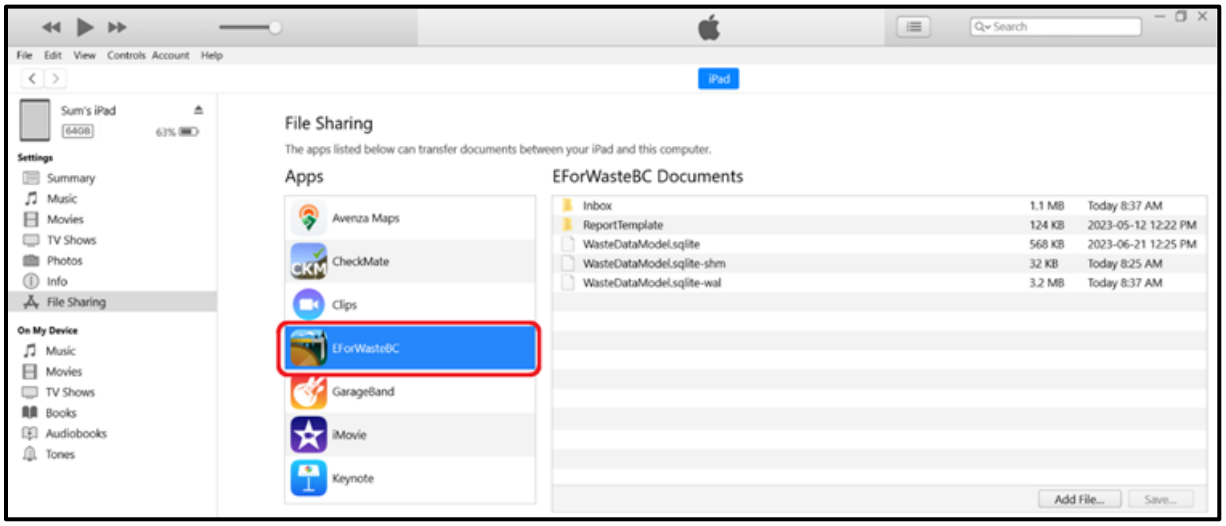
4. Select the device button to navigate to the devices file management and settings.



5. In the left sidebar, select ‘File Sharing’.

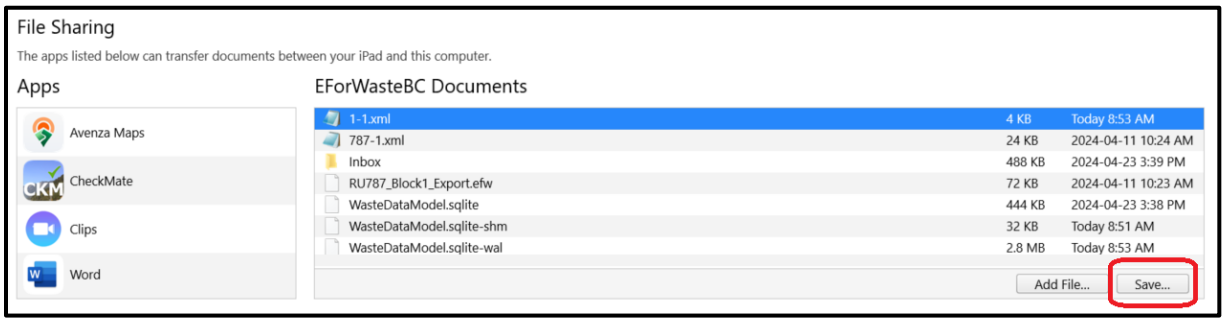


6. Select the EForWasteBC application on the iTunes window.



7. Select he desired file to be transferred to the PC.

8. Select save. Once the save button is selected, save the file in the appropriate folder on your PC.



9. Reports

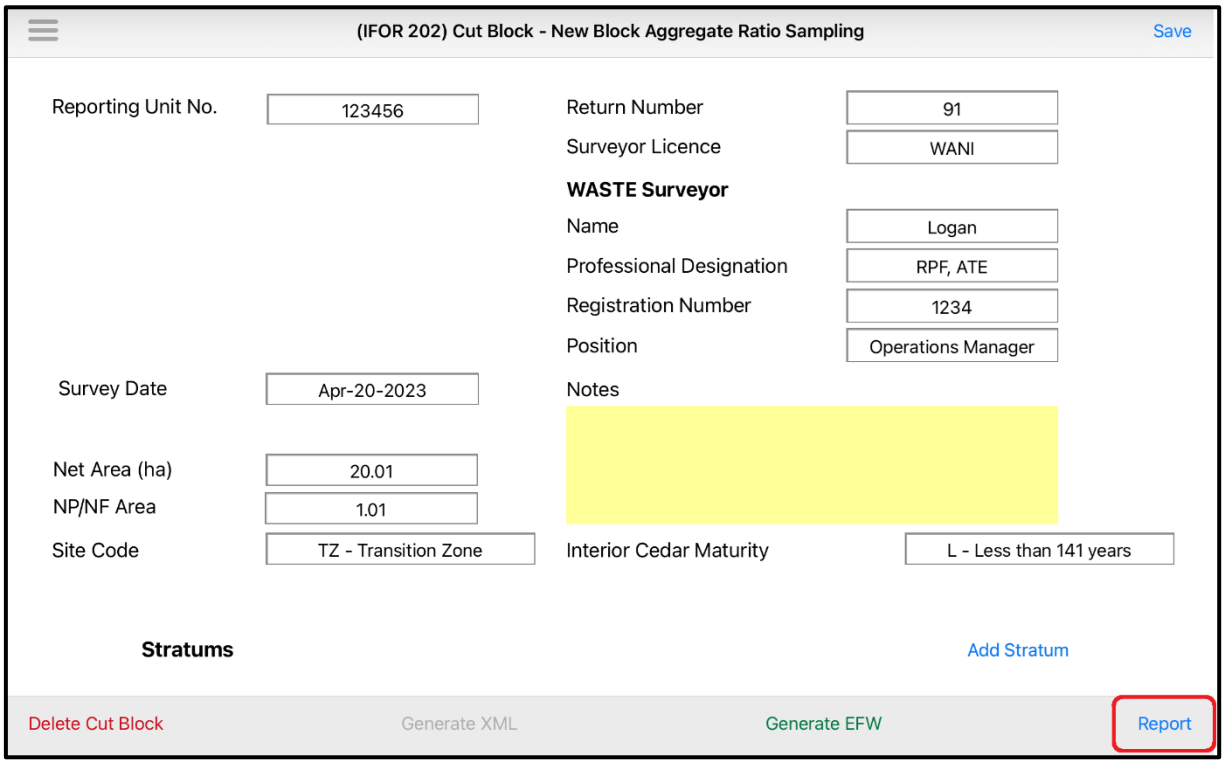
The EForWasteBC application offers users a broad set of reporting tools, enabling them to effortlessly generate, explore, and export four distinct reports. These reports include the Block Type Summary (BTS), FS702, Plot Tally, and Plot Prediction Report. The BTS and FS702 reports provide summaries of waste survey volumes, while the Plot Tally report details waste pieces recorded in each plot. Additionally, the Plot Prediction Report offers insights such as plot entries, estimated volumes, measure % changes and plot deletion for ratio surveys. For ratio sampling, block-level reports are based solely on measure plots. Users can conveniently view or export all reports directly from the EForWasteBC application.

Note: *Minor volume discrepancies may exist within the reports generated in the application due to rounding. The information displayed in the FS702 and the BTS reports for ratio surveys include only measure plot volumes. All data present within the generated reports approximates waste billing information. Where volume and value discrepancies are found, the online waste system will be considered correct.*

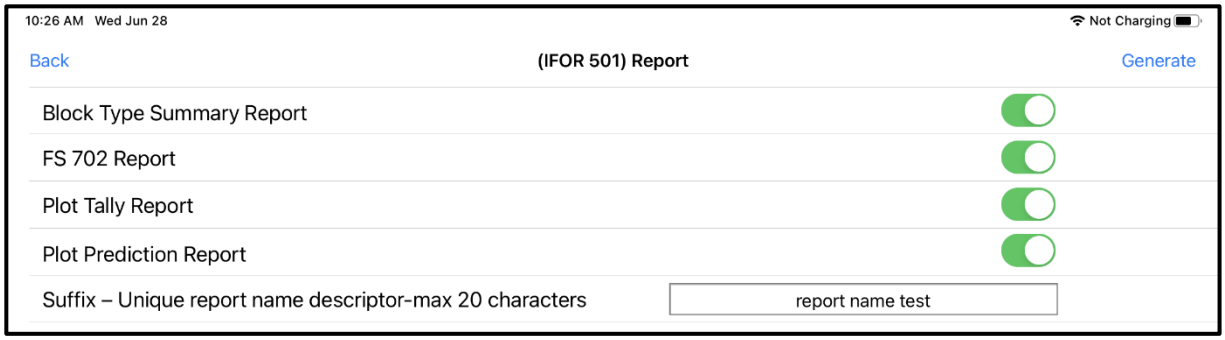
9.1. Generating Reports

To generate reports:

1. Select the 'Report' button at the bottom right of the screen.



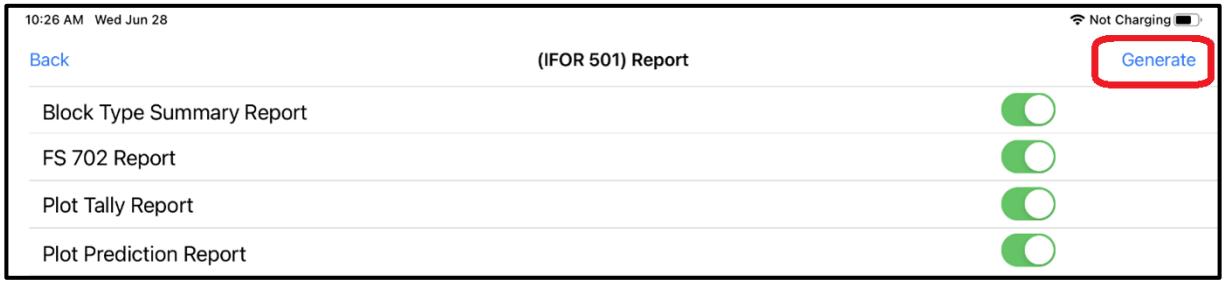
2. From the Reports list, switch the toggle for each of the reports the user wishes to create. The toggle will turn green for each report selected to be generated.



Note: ***The Plot Prediction Report can only be generated for Ratio populations.***

3. Add a unique suffix to the report name to facilitate in identifying the report afterwards.

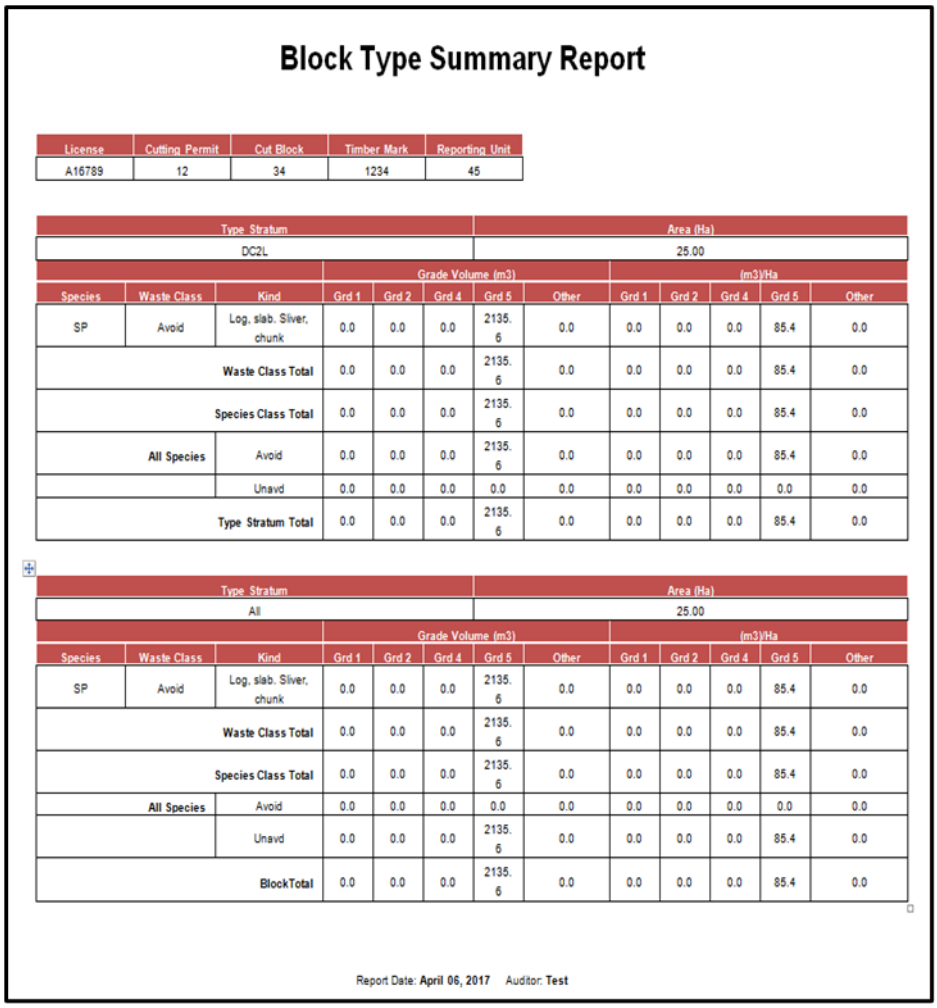
4. Select 'Generate'.



5. A confirmation window will appear. Select 'OK'.

9.1.1. Block Type Summary Report

This report presents a summary of the block by stratum and block totals. The tables depict the species and grades collected in the survey within each stratum. The report presents the information in Total cubic meters (m3) and by cubic meters per hectare (m3/ha).



Block Type Summary Report

License	Cutting Permit	Cut Block	Timber Mark	Reporting Unit
A16789	12	34	1234	45

Type Stratum	Area (Ha)
DC2L	25.00

			Grade Volume (m3)					(m3)/Ha				
Species	Waste Class	Kind	Grd 1	Grd 2	Grd 4	Grd 5	Other	Grd 1	Grd 2	Grd 4	Grd 5	Other
SP	Avoid	Log, slab. Sliver, chunk	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Waste Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Species Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
	All Species	Avoid	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Unavd	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Type Stratum Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0

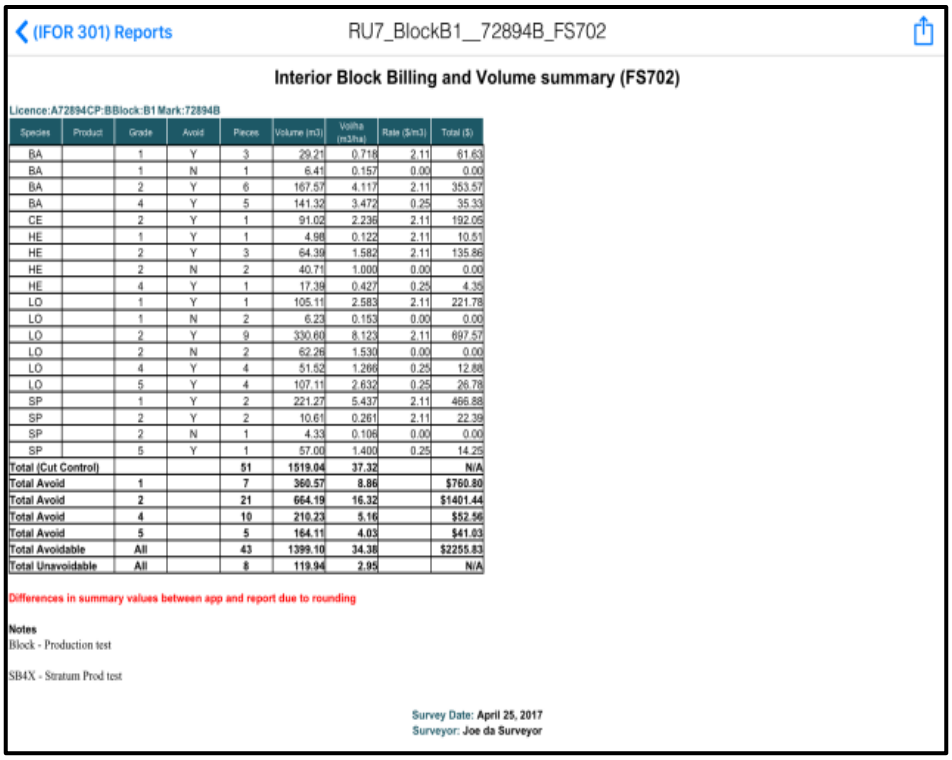
Type Stratum	Area (Ha)
All	25.00

			Grade Volume (m3)					(m3)/Ha				
Species	Waste Class	Kind	Grd 1	Grd 2	Grd 4	Grd 5	Other	Grd 1	Grd 2	Grd 4	Grd 5	Other
SP	Avoid	Log, slab. Sliver, chunk	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Waste Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Species Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
	All Species	Avoid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Unavd	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		BlockTotal	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0

Report Date: **April 06, 2017** Auditor: **Test**

9.1.2. FS702 Report:

This report shows the full volume and value summary by species, grade for the block. The report is a reproduction of the FS702 billing that would be produced for the block. The FS702 is produced on either a Coast or Interior template and summarizes key attributes from the survey. Notes recorded on the Block Header or Stratum header are reproduced onto the report.



(IFOR 301) Reports

RU7_BlockB1__72894B_FS702

Interior Block Billing and Volume summary (FS702)

Licence:A72894CP:BBlock:B1 Mark:72894B

Species	Product	Grade	Avoid	Pieces	Volume (m3)	Vol/ha (m3/ha)	Rate ($/m3)	Total ($)
BA		1	Y	3	29.21	0.718	2.11	61.63
BA		1	N	1	6.41	0.157	0.00	0.00
BA		2	Y	6	167.57	4.117	2.11	353.57
BA		4	Y	5	141.32	3.472	0.25	35.33
CE		2	Y	1	91.02	2.236	2.11	192.05
HE		1	Y	1	4.98	0.122	2.11	10.51
HE		2	Y	3	64.39	1.582	2.11	135.86
HE		2	N	2	40.71	1.000	0.00	0.00
HE		4	Y	1	17.39	0.427	0.25	4.35
LO		1	Y	1	105.11	2.583	2.11	221.78
LO		1	N	2	6.23	0.153	0.00	0.00
LO		2	Y	9	330.60	8.123	2.11	697.57
LO		2	N	2	62.26	1.530	0.00	0.00
LO		4	Y	4	51.52	1.266	0.25	12.88
LO		5	Y	4	107.11	2.632	0.25	26.78
SP		1	Y	2	221.27	5.437	2.11	466.88
SP		2	Y	2	10.61	0.261	2.11	22.39
SP		2	N	1	4.33	0.106	0.00	0.00
SP		5	Y	1	57.00	1.400	0.25	14.25
Total (Cut Control)				**51**	**1519.04**	**37.32**		**N/A**
Total Avoid		**1**		**7**	**360.57**	**8.86**		**$760.80**
Total Avoid		**2**		**21**	**664.19**	**16.32**		**$1401.44**
Total Avoid		**4**		**10**	**210.23**	**5.16**		**$52.56**
Total Avoid		**5**		**5**	**164.11**	**4.03**		**$41.03**
Total Avoidable		**All**		**43**	**1399.10**	**34.38**		**$2255.83**
Total Unavoidable		**All**		**8**	**119.94**	**2.95**		**N/A**

Differences in summary values between app and report due to rounding

Notes

Block - Production test

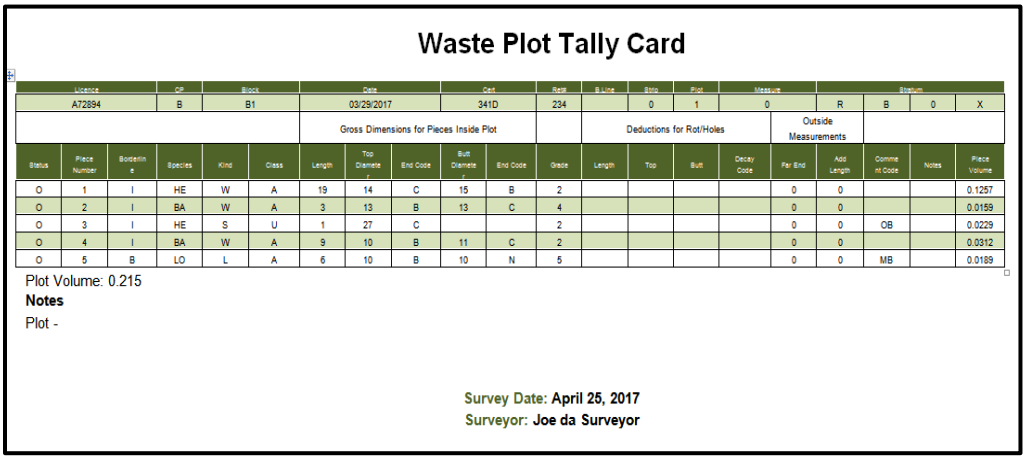
SB4X - Stratum Prod test

Survey Date: **April 25, 2017**

Surveyor: **Joe da Surveyor**

9.1.3. Plot Tally Report:

The Plot Tally report presents all the information collected within a waste plot. The report also summarizes the plot volume and reports any notes: collected by the surveyor.



Waste Plot Tally Card

Licence	CP	Block	Date	Cell	Ref#	B Area	Strip	Plot	Measure	Stratum			
A72894	B	B1	03/29/2017	341D	234		0	1	0	R	B	0	X

	Gross Dimensions for Pieces Inside Plot										Deductions for Rot/Holes				Outside Measurements				
Status	Piece Number	Borderline	Species	Kind	Class	Length	Top Diameter	End Code	Butt Diameter	End Code	Grade	Length	Top	Butt	Decay Code	Per End	Add Length	Comment Code	Notes	Piece Volume
O	1	I	HE	W	A	19	14	C	15	B	2					0	0			0.1257
O	2	I	BA	W	A	3	13	B	13	C	4					0	0			0.0159
O	3	I	HE	S	U	1	27	C			2					0	0	OB		0.0229
O	4	I	BA	W	A	9	10	B	11	C	2					0	0			0.0312
O	5	B	LO	L	A	6	10	B	10	N	5					0	0	MB		0.0189

Plot Volume: 0.215

Notes

Plot -

Survey Date: **April 25, 2017**

Surveyor: **Joe da Surveyor**

9.1.4. Plot Prediction Report:

The Plot Prediction Report (PPR) summarizes survey information and is only applicable for Ratio populations. Within the report, Users can find Ratio survey details including but not limited to; plot entries and deletions, predicted plot volumes, stratum deletions, measure % change and any included rational. The plot prediction report can be viewed and generated in the application, or the report can be downloaded to the Users PC. — See section 9.1 above for details on PPR generation.

IPad identifier	Surveyor	Reporting Unit	License	CP	Block	Stratum	Plot No	Time stamp	GPS coordinate	Random Selection indicator	Predicted Green Volume	Measure %	Plot Data Tracker	Signing Professional	Designation	License No.	Signature	Rationale
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				SR2X	1	2023-04-12 07:48:26	N/A	NO	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				SR2X	2	2023-04-12 07:48:34	N/A	NO	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				SR2X	3	2023-04-12 07:48:43	N/A	YES	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				SR2X	4	2023-04-12 07:48:51	N/A	NO	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				SR2X	5	2023-04-12 07:49:00	N/A	YES	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				PR0X	1	2023-04-12 07:49:38	N/A	YES	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				PR0X	2	2023-04-12 07:49:51	N/A	YES	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				PR0X	3	2023-04-12 07:50:00	N/A	NO	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				PR0X	4	2023-04-12 07:50:09	N/A	YES	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				PR0X	5	2023-04-12 07:50:19	N/A	NO	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1	q		q	PR0X	4	2023-04-12 07:51:28	N/A	YES	1.00	15	Measure % Changed	Alex	RFT	100		Test verbiage
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1	q		q	PR0X	2	2023-04-12 07:52:15	N/A	YES	1.00	5	Measure % Changed	Alex	RFT	100		Test verbiage
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1				PR0X	6	2023-04-12 07:52:32	N/A	YES	1.00	100	New Plot Added					
1E67539E-46F0-9A0C-AB70A84D6E20	Al	1	q		q	PR0X	6	2023-04-12 07:53:10	N/A	YES	1.00	100	Delete Plot	Alex	RFT	100		Test verbiage
													* measurement data deleted					

9.2. View Reports

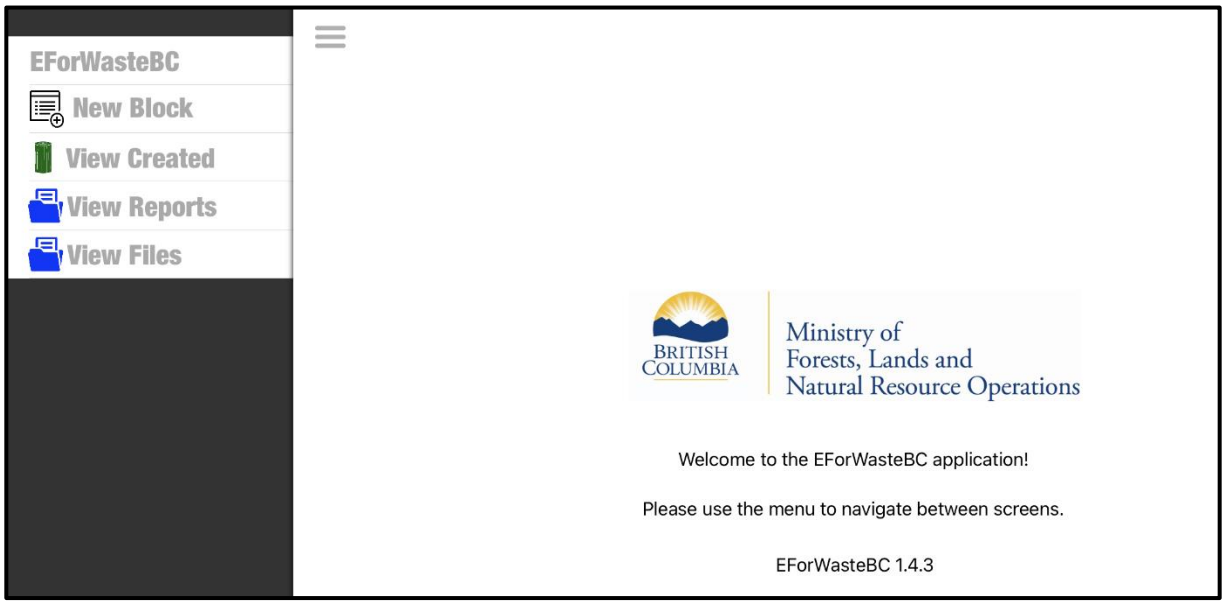
Users can view the reports in the EForWasteBC application, on iBook's as a PDF or on the Users PC which requires export of the report via email or iTunes.

9.2.1. View reports in EForWasteBC

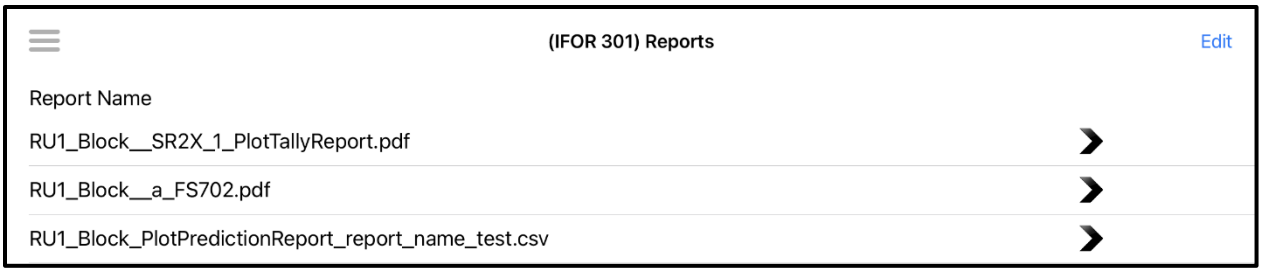
To view generated reports in the application:

1. Tap the EForWasteBC Menu button.

2. Select 'View Reports'.



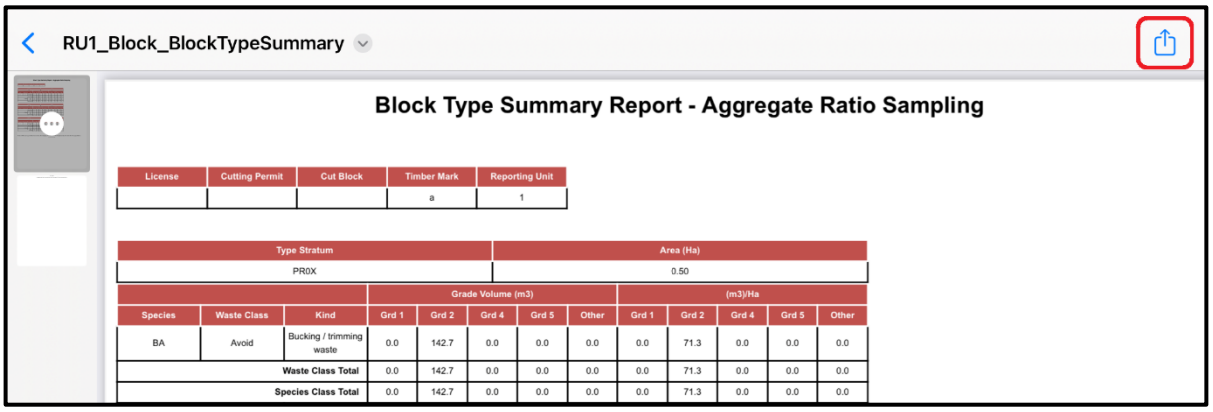
3. All available reports will be displayed on the '(IFOR 301) Reports' screen.



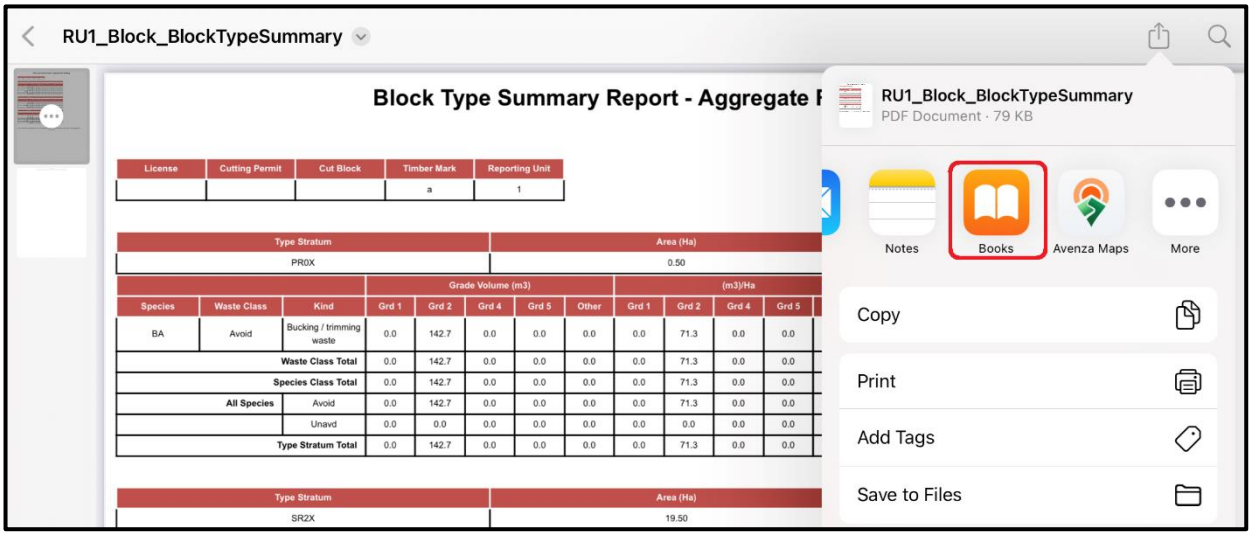
4. To view a particular report, simply select it.

9.2.2. View reports in iBook

1. Open the report in EForWasteBC.
2. Tap on the 'share' icon in the top right corner.



3. Select the iBook's app icon. The report will open in the app.



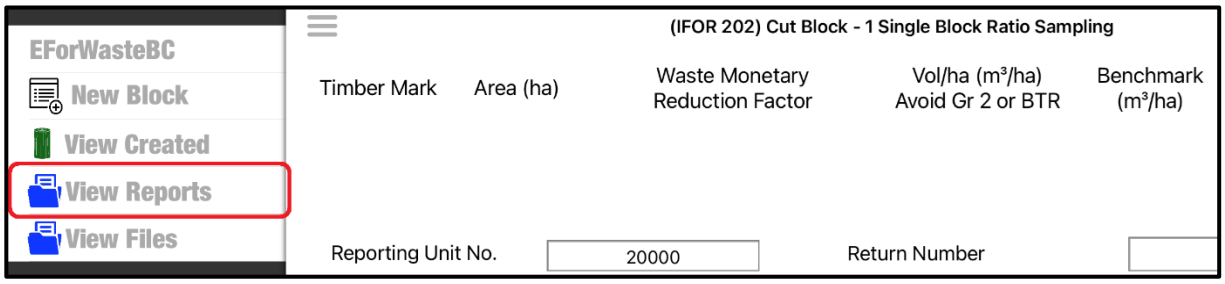
9.2.3. Exporting Reports to PC

Once reports have been created, they can be transferred to the surveyor's personal computer. The reports can be transferred by emailing or by direct connection to the PC through iTunes.

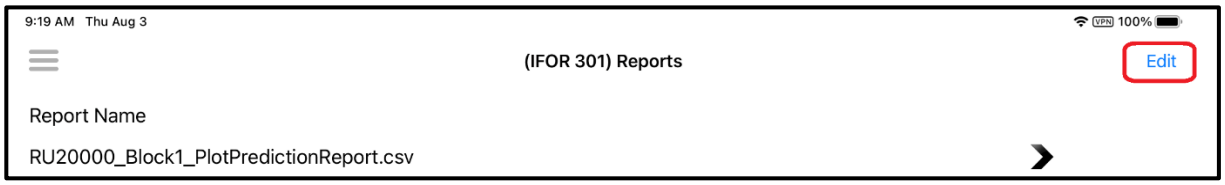
8.2.3.1 Email

To transfer a report from the iPad to the computer through email:

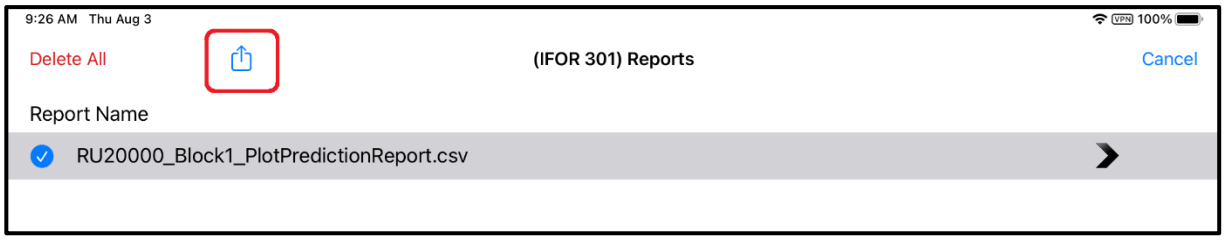
1. Navigate to the 'View Report' menu.



2. On the (IFOR 301) Report screen, tap 'Edit' and select the desired report.



3. Select the 'share email' icon



4. An email message will be generated with the report included as an attachment. Add your email address and any other recipients you wish to send the report to.

5. Select send once complete.

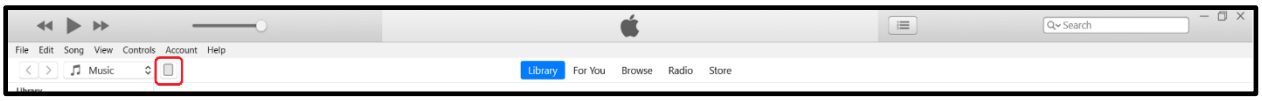
8.2.3.2 iTunes

To transfer a report(s) from the iPad to the computer through direct transfer:

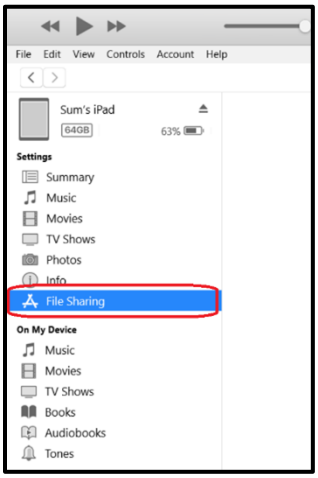
1. On your computer, open the iTunes application.

2. Connect the iPad to the computer via compatible USB cable that came with your device. The iPad device must be viewable on iTunes.

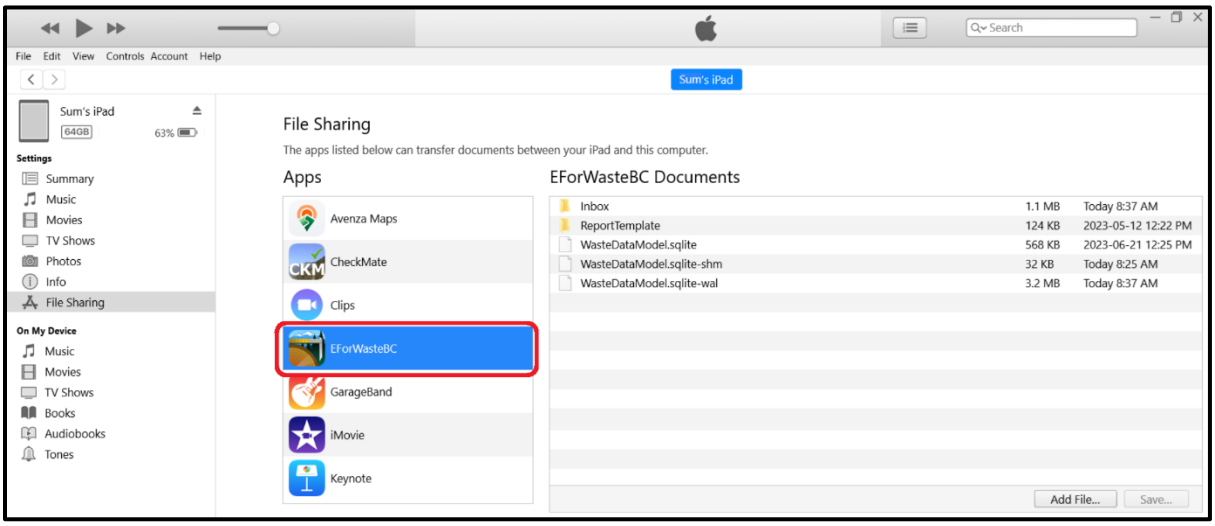
3. Click the iPad button on the top of the iTunes bar.



4. Under Settings, select ‘File Sharing’.

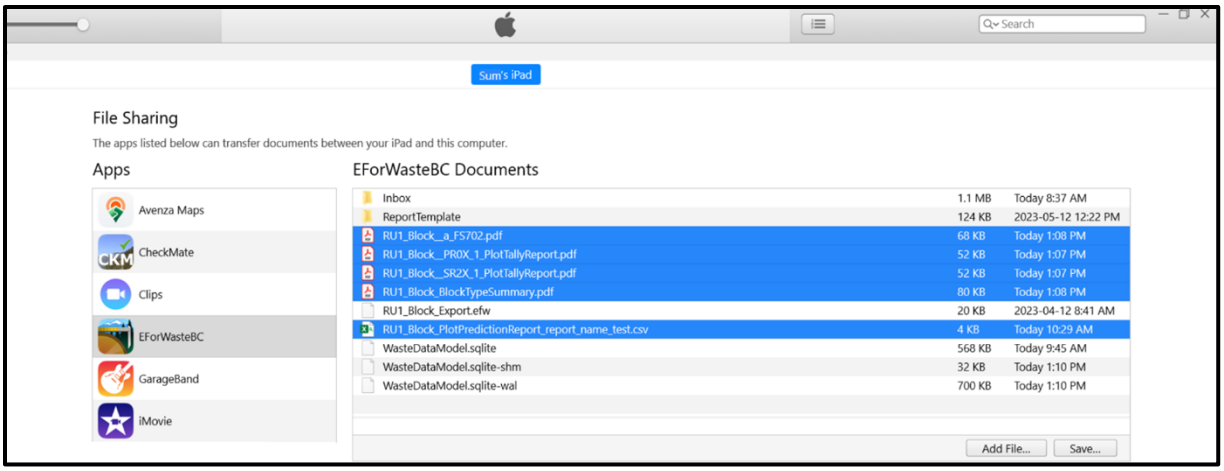


5. Navigate and select the EForWasteBC icon.



6. Once EForWasteBC icon is selected, the reports will be displayed along with any .efw files.

7. Select the desired report(s) to be transferred and click the ‘Save’ button.



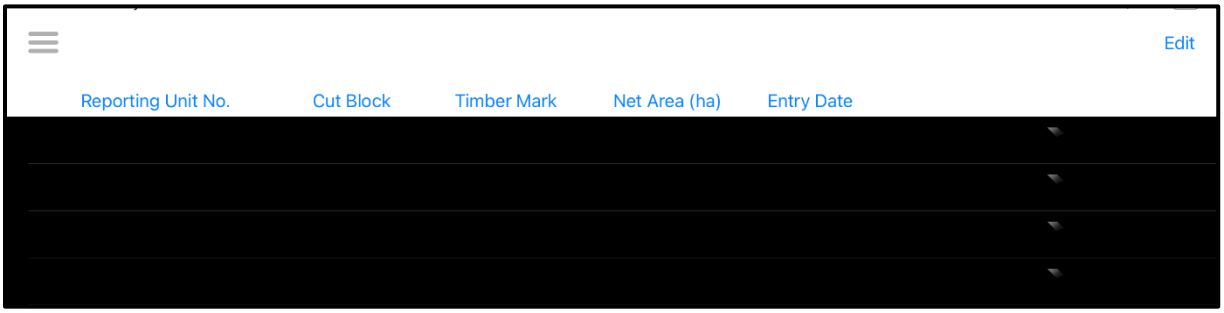
8. Navigate to the appropriate folder on the computer and save the desired reports.

10. Troubleshooting

Users are encouraged to reference the following section for problem solving techniques, additional tips and common errors when encountered with any issues, using EForWasteBC. If you are unable to problem solve issues using the instructions depicted in the user guide, or if you have feedback to the continuous improvement of this guide or EForWasteBC itself, please contact the District or Area Waste Specialist at the Ministry of Forests. If you are unsure who the Waste Specialist is in your area, please use the service desk at FrontCounter BC (Locations - Natural Resource Online Services (gov.bc.ca) and they can provide you with the appropriate contact information.

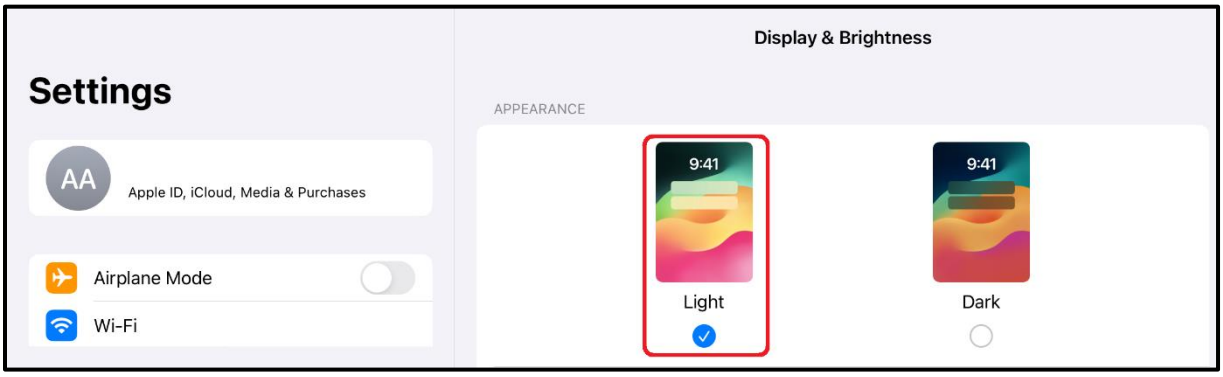
10.1. EForWasteBC Not Displaying Data Correctly.

If you encounter issues with the application, such as data being invisible or displaying incorrectly, review your device settings. Users can reference the appendix within this guide for information on basic iPad usage and instructions on how to review and change settings.



Example showing iPad on Dark mode.

- Review your device settings. Check if your iPad is set to 'dark mode'. Navigate to the device's display and brightness settings, and switch from 'dark mode' to 'light mode' if 'dark mode' is activated.



10.2. AirDrop Not Working

If you are experiencing issues with the AirDrop file sharing function, double check a few key items prior to reaching out for technical help. Users can reference section 7 within this guide for instructions on

exporting and importing using the apple AirDrop function.

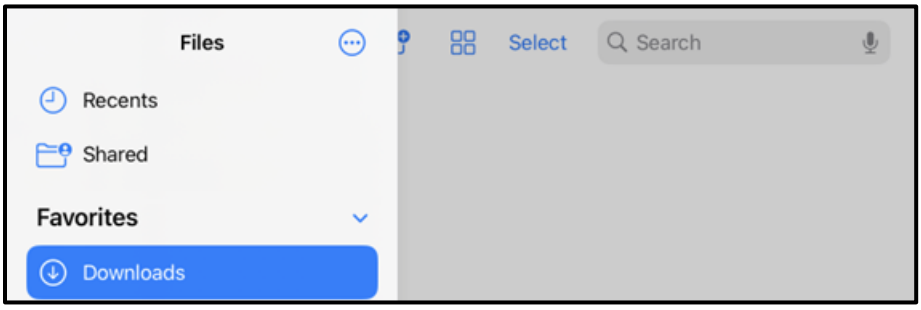
- Verify the iOS versions of all devices involved and ensure they are up to date.
- Ensure that the Bluetooth setting is enabled on all devices involved in the file sharing process.
- Ensure that the AirDrop receiving function is set to "Sharing with Everyone"
- Bring the devices closer to each other, then attempt the AirDrop function again.
- If the AirDrop is still unsuccessful. Save your work and restart the device.

10.3. AirDrop Import to EForWasteBC Not Working

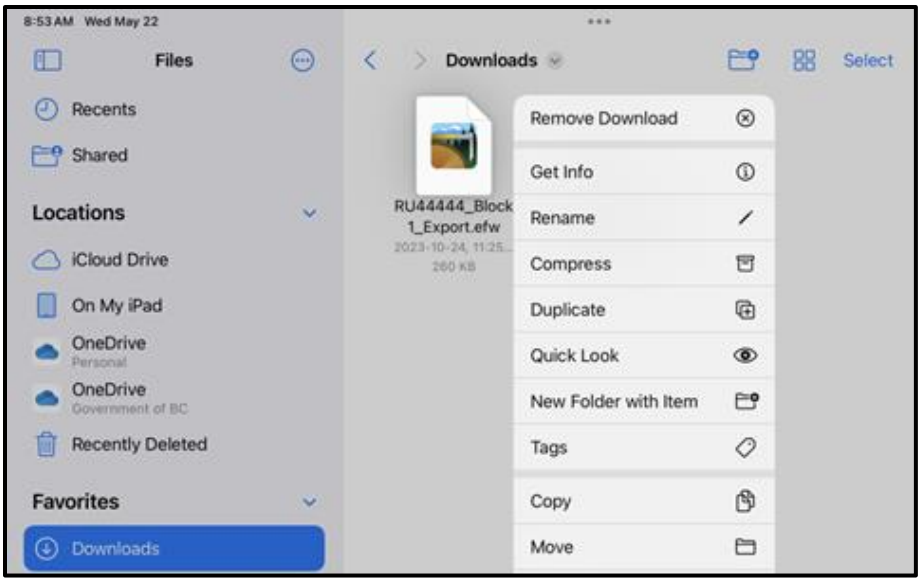
If the AirDrop function is working but the .efw file does not import successfully to EForWasteBC, review section 7 in this guide for instructions on how to export and import .efw files using the apple AirDrop function. Once reviewed, refer to the instructions below as a potential solution for an unsuccessful AirDrop .efw file import.

1. After attempting the AirDrop file transfer/ import, navigate to and open the devices 'Files' app.

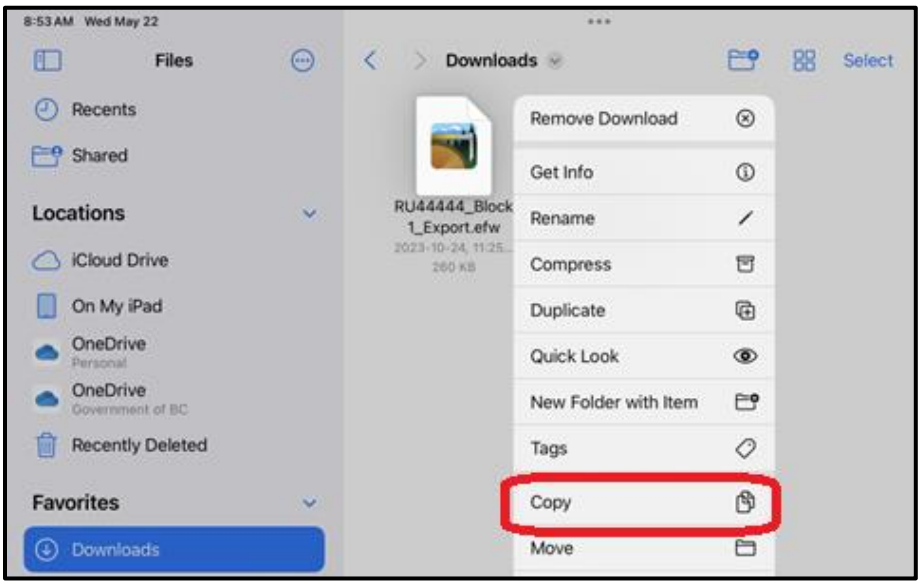
2. Navigate to your devices 'downloads' folder.



3. Select and hold the desired file.

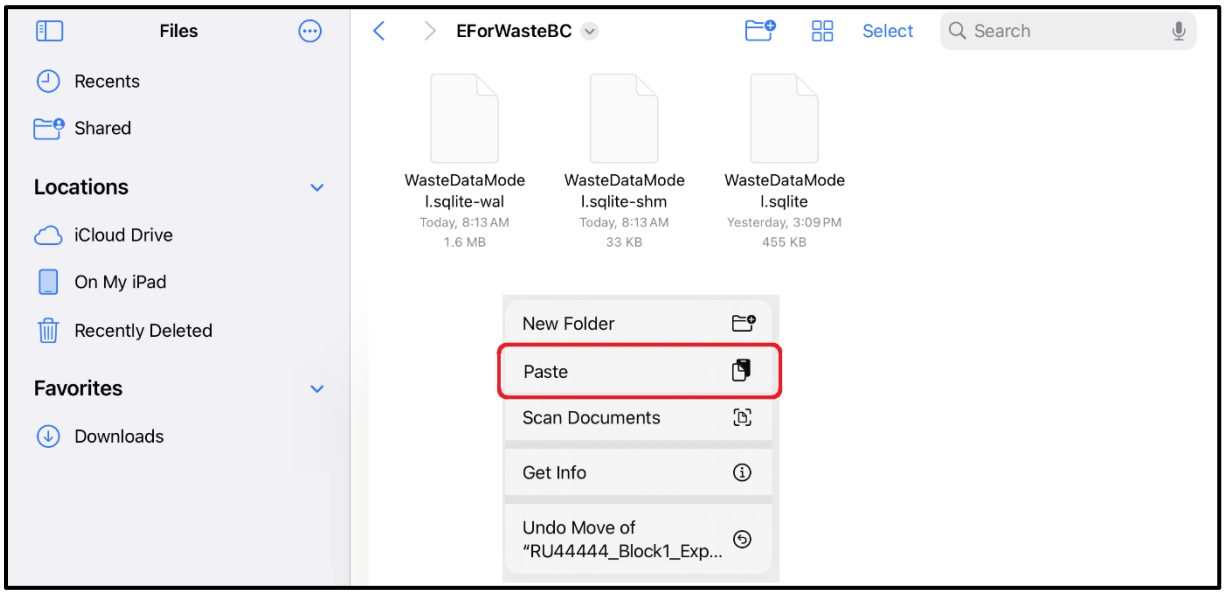


4. Copy the file.

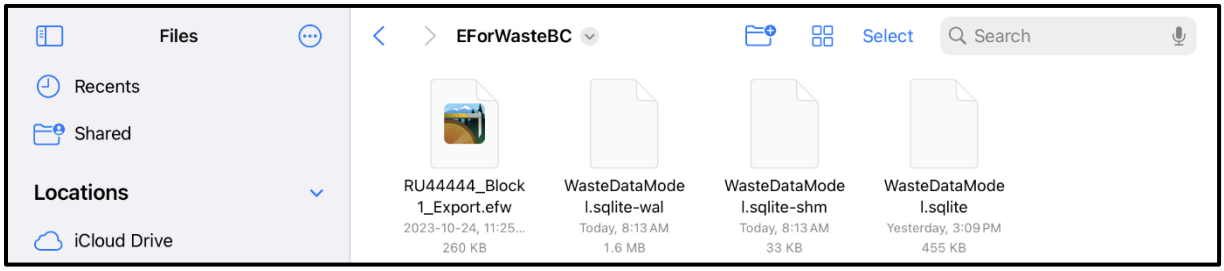


5. Next, navigate to the EForWasteBC folder on your device. Select 'On My iPad' under 'Locations' and navigate to the EForWasteBC folder.

6. Paste the file in the EForWasteBC folder.

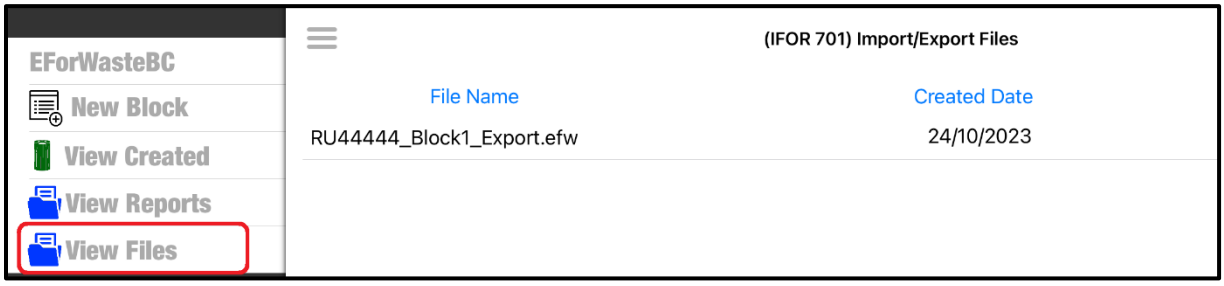


7. Ensure the correct file was copied/pasted into the EForWasteBC folder.



8. Open the EForWasteBC application.

9. In the EForWasteBC application, select the dropdown menu and select the 'View Files' button to navigate to the IFOR 701 Import/Export Files screen.



10. Select the file to initiate the file import.

11. Once the 'Import File' pop up window appears, select yes and the file will be imported and saved to the IFOR 601 view created screen.

10.4. Merge Unsuccessful

If you are experiencing issues with the merge functionality, review section 7 within this guide for instructions on how to export, import and merge .efw files. After reviewing this section, consult the information below:

When merging files in EForWasteBC the application will compare the incoming file to an existing file before it determines if the merge can proceed. The initial comparison is performed by comparing values on the Cutblock screen, stratum screen, and Timber Mark screen, in the incoming file, to the values in the receiving file. These values must match exactly in order to initiate the merge process. If there is no exact match, then the incoming file is not a candidate for a merge.

- Review data in all files:
    - Review both files and ensure that all relevant data on the Cut Block screen (IFOR 202) in both survey files match.
    - Review both files and ensure that all relevant data on the Stratum screen (IFOR 203) in both survey files match.
    - Review both files and ensure that all relevant data on the Timber Mark screen (IFOR 401) in both survey files match.
    - Review every stratum in the .efw files. Ensure that no duplicate plots exist. Where duplicate plot number exists, the merge will fail.
- If the merge process continues to encounter issues, consider attempting the file merge with an alternative file/ ipad.

10.5. Cannot generate Plot Prediction Report

If you are experiencing issues generating the Plot Prediction Report, review section 9 within this guide for instructions on how to generate, view and export, reports.

- When attempting to generate the Plot Prediction Report if any validation warning or errors appear, ensure to correct the warning and error. Attempt to generate the PPR again.
- The plot prediction report will not be available for Single Block SRS or Aggregate SRS Surveys

10.6. Final Attempts

If Users are unable to solve issues they may be experiencing, try this final problem-solving technique prior asking for technical help.

- Save your work.
- Close the application.
- Restart the device.
- Reopen EForWasteBC.

10.7. Technical Help and Feedback

If your issue is not described in this section, or if attempts to resolve the issue(s) are unsuccessful, please contact the District or Area Waste Specialist at the Ministry of Forests. If you are unsure who the Waste Specialist is in your area please use the service desk at FrontCounter BC (Locations - Natural Resource Online Services (gov.bc.ca) and they can provide you with the appropriate contact information.

To facilitate the identification and resolution of any problems you may encounter, please have the following information ready for electronic submission via email:

- A clear description of the issue.
- Details of troubleshooting efforts made and their results.
- Attachments (.efw or .xml files).
- Screenshot showing the issue(s).

Appendix I: iPad Basics

This section outlines general iPad practices for users who are new or unfamiliar with the general functions of an iPad.

1. Turning the iPad On and Off

To turn on the iPad:

1. Find the Sleep/Wake button on the top right of your device.

2. Press and hold down the button for a few seconds. The device will turn on.

3. If a passcode has been set on the iPad, enter the passcode.

To turn off the iPad:

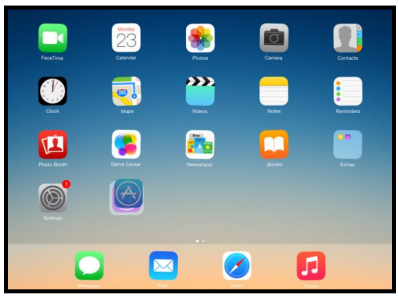
1. Find the Sleep/Wake button on the top right of your device.

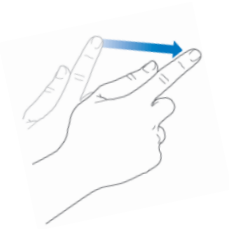
2. Press and hold down the button for a few seconds until a small slide bar appears across the top of the display.

3. Drag the slider to power off the iPad.

2. Navigating between iPad Home Screens

The user can navigate between home screens by swiping to the side to move from screen to screen. This can be required for navigating to the EForWasteBC app.





3. Arranging Apps on the Home Screen

An iPad can display up to 11 home screens, allowing for plenty of room to organize apps that are loaded onto the iPad.

To move apps on a Home screen:

1. Tap and hold any app on that page. The app icons all jiggle.

2. Press, hold, and drag an app icon to another location on the screen to move it.
   a. To move an app from one screen to another, while apps are jiggling, you can tap and drag an app to the left or right to move it to the next screen.

3. Tap the **Home** button to complete the app move (stops icons from jiggling).

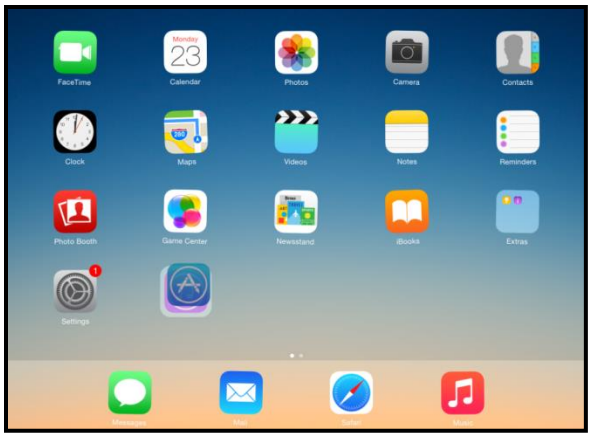
3.1 Organizing Apps into Folders

iPad lets you organize apps into folders to sort common uses and functions.

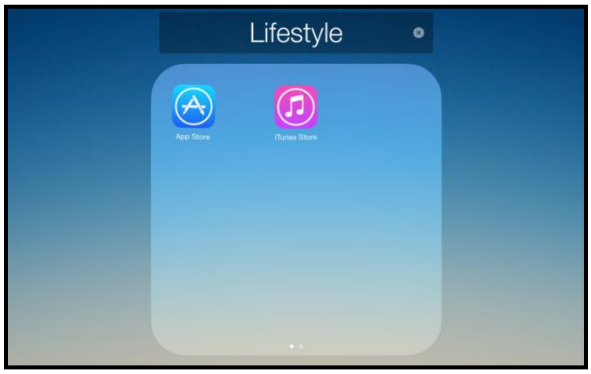
To create an apps folder:

1. Tap and hold any app on that page. The app icons all jiggle.

2. Drag an app on top of another app.

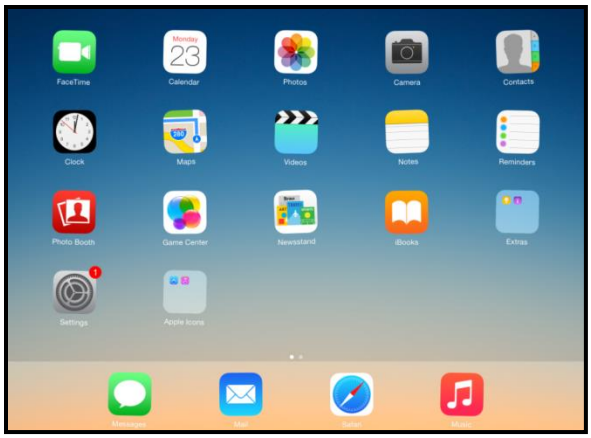


3. The two apps get added to a single folder.



4. Change the name for the folder by tapping in the name field and typing the folder name to be used.

5. Tap anywhere outside of the bar to save the name and folder.



6. Tap the **Home** button to complete the app move (stops icons from jiggling).

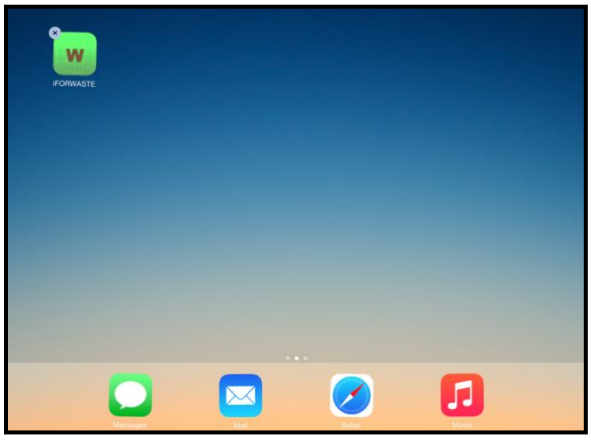
3.2 Deleting Apps From iPad

When an app is no longer needed it can be removed to save space on the iPad.

To remove an app from the iPad:

1. Navigate to the app to be deleted. Tap and hold the app until all apps begin to jiggle.

2. Tap the **Delete** button (small x in the top left of the icon) for the app you want to delete.



3. In the confirmation dialog, tap **Delete** to proceed with the deletion.

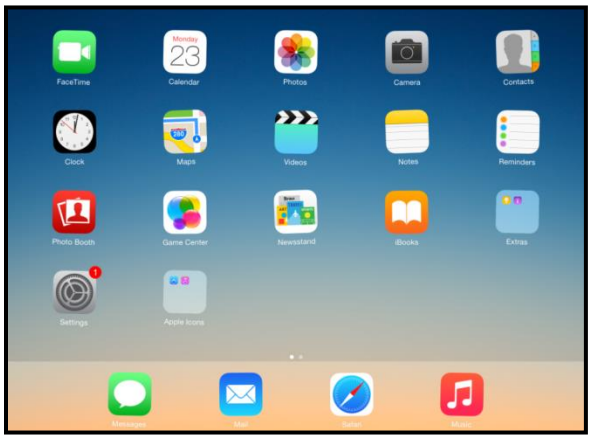
4. Taking Screenshots

To take a screenshot on your iPad:

1. Locate the Home and Sleep/Wake buttons. The Home button is found directly below your iPad's display. The Sleep/Wake button on the top right of your device.

2. Simultaneously press the Home button and Sleep/Wake button when viewing the screen, you want to capture. The iPad will flash if done correctly.

3. Once screen is captured, photos will automatically be saved in the **Photos** app. The screen shot can then be transferred to a desktop computer or emailed if the iPad has that capability.



4. Navigate to Photos app to view captured screenshot.

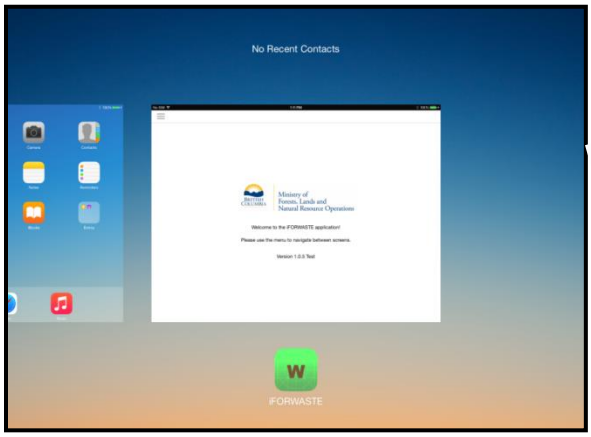
5. Closing an Application

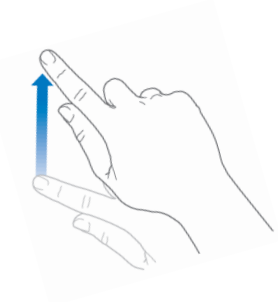
Tapping the home button will minimize the current application the user is using and open the Home Screen. This will not close the application properly and it will still be open in the background.

To close an application:

1. Double click the home button to open the multitasking screen.

2. Press and hold the application window to be closed and swipe to the top of the screen.





6. Apple iPad User Guide

The Apple iPad user Guide contains all general information for the iPad including:

- An overview of iPad buttons and screens
- Common iPad functions
- Customizing the iPad
- General iPad help

The User Guide for the iPad 4 Mini can be found at the following location:
https://manuals.info.apple.com/MANUALS/1000/MA1595/en_US/ipad_user_guide.pdf

7. Protective Case

Care and Maintenance for a protective case can be found on the 'Survivor' website:
http://griffintechnology.com/support/survivor)

To clean a protective case:

1. Remove the iPad from the protective case.
   i. Be sure to use a flat and stable surface when removing iPad from protective case.
   ii. Unclip screen protector from plastic shell, starting at the top of the iPad.
   iii. Place both hands on both sides of the top left corner of the case. Use your thumbs to press out and down on the case until you hear a click. Work your way around, repeating this motion on the other corners of the case. When pressing down on the third corner, the iPad will come out of the durable plastic shell.

2. To clean the protective case, it is suggested to us a clean, lint free cloth with warm water. Avoid applying corroding cleaning products such as alcohol and chemical based cleaners.

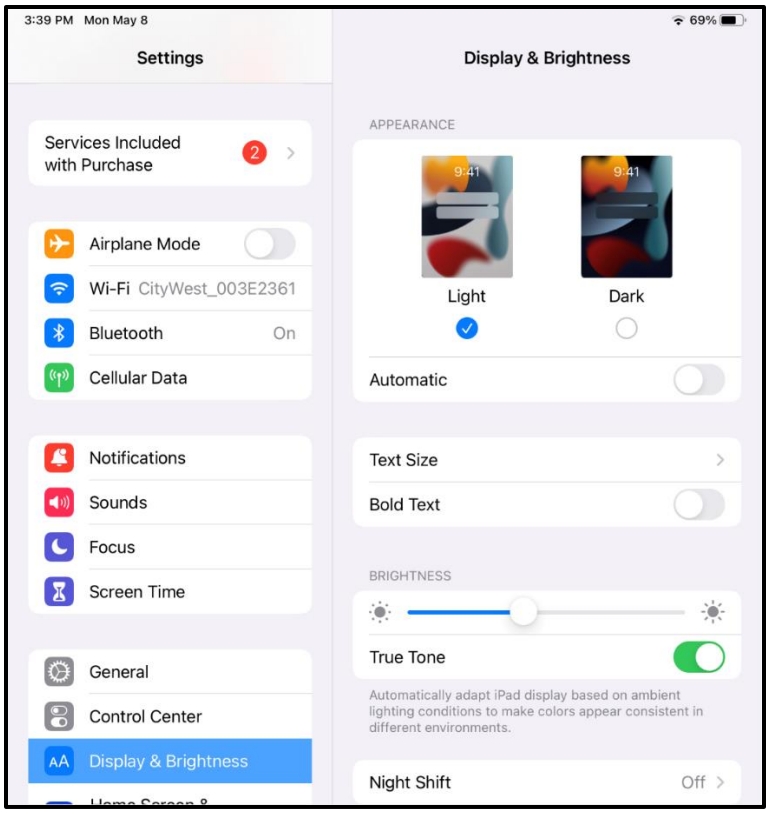
3. Be sure to allow protective case to completely air dry before putting the iPad back into the case.

8. Light Mode and Dark Mode

When using EFORWASTEBC ensure the iPad has been set to light mode rather than dark mode to ensure optimal app functionality. Some data fields will not be viewable in Dark mode.

To review or change Display appearance to light mode:

1. Navigate to the devices settings.
2. Select ‘Display & Brightness’.
3. Under the Appearance heading select ‘Light’.



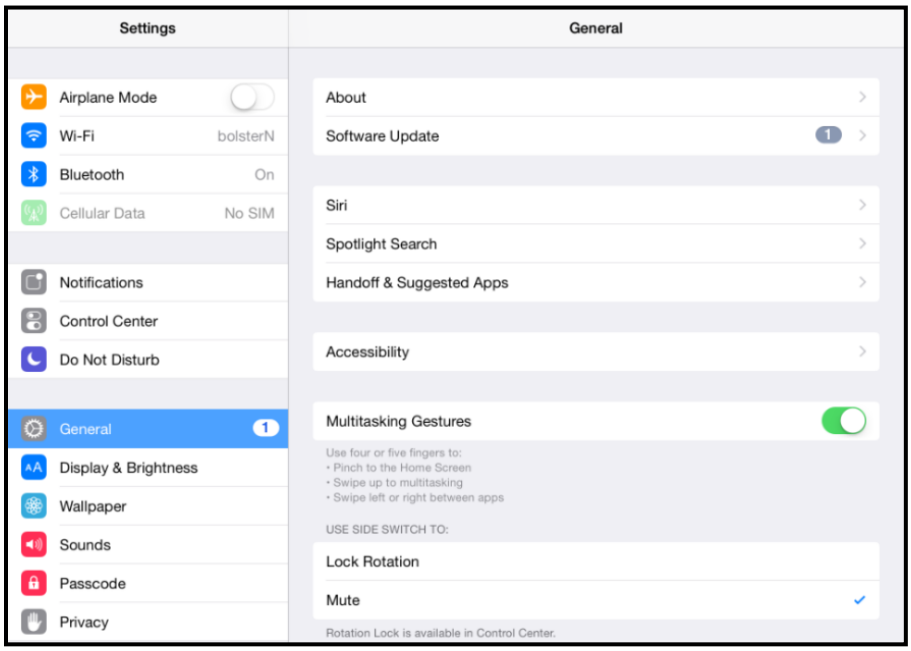
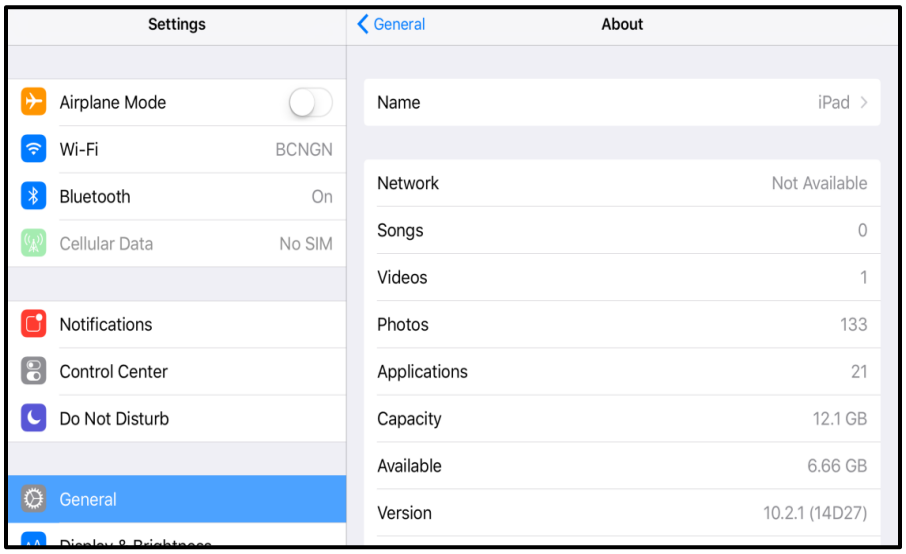
9. Checking iPad's iOS

This section has been included to guide Users on how to check iPad's iOS version:

Note: *Once installed, iOS updates cannot be uninstalled on iPads (Unlike windows PC updates). Do not install any iOS updates to iPads running EForWasteBC until you receive an update from the App store. Use of an incompatible IOS may cause the application to not operate correctly.*

1. Navigate to the home screen and tap the **Settings** icon.

2. In the Settings sidebar, tap **General** and then tap **about.**



3. The iOS version is shown in the 'Version' field.