

SilvAssist Inventory Project Manager

User's Manual

June 2023

Revision Sheet

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Rev. 1.1	1/22/21	Clarify Active/Inactive (pg. 12-3, 12-5), add descriptions of Feature Attribute custom column types (pg. 12-15)	
REV / 1/16//1 '		Update Allocator section for changes to buttons, map options(pg. 4-2) add section on Calculate Acres (pg. 4-6)	
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Rev. 3.2	Rev. 3.2 7/14/21 Many screenshot updates. Print Widget (pg. 3-7), updated proc for plot sizes on Allocator(pg. 4-4), plot levels for Allocator (pg.		
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SILVASSIST INVENTORY PROJECT MANAGER USER'S MANUAL

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1.0 GENERAL INFORMATION

1.0 GENERAL INFORMATION

1.1 Product Overview

SilvAssist Inventory Project Manager is an inventory project management solution that allows end users the ability to track completion status, audit status/results, and access raw and compiled inventory data collected in the field, as well as stand and strata level summary statistics.

SilvAssist Inventory Project Manager (IPM) is used in conjunction with the ArcGIS Platform to set-up projects, configure data collection forms, allocate plots, assign plots to contractors/cruisers and define merchandising specifications and volume equation/table parameters. In addition, the platform allows for easy invoice and audit verification. Project reports and data can be exported to Microsoft Excel from within the IPM. Projects created and configured in the IPM are available for data collection in SilvAssist Mobile.

This user's manual is intended to provide an overview and introduction to the SilvAssist IPM. Available features may vary depending on user type and organization configuration.

1.2 Minimum System Requirements

SilvAssist IPM is best viewed on a desktop computer web browser but is also fully compatible with mobile web browsers.

Desktop Computer

Minimum System Requirements

OS: Windows 7 or later, OS X Yosemite 10.10 or later

Processor: 1 GHz or faster processor or SoC **RAM**: 1 GB for 32-bit or 2 GB for 64-bit

Hard disk space: N/A

Graphics card: DirectX 9 or later with WDDM 1.0 driver

Display: 800 x 600

Web Browser: Google Chrome recommended

Mobile Device (tablet, phone) Android Version: 8.0 or higher

CPU Speed: Quad Core 1.2GHz

RAM: 2 GB or higher

Internal Storage: 16 GB or higher

Connectivity: Wi-Fi (LTE compatible but not required), Bluetooth 4.0+, GPS

Web Browser: Google Chrome recommended

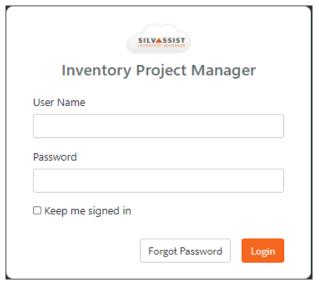
Other: Ruggedized devices or equivalent cases are recommended for field use

	2.0 Sign In and Site Navigation
2.0 SIGN IN AND SIT	F NAVIGATION
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2.0 SIGN IN AND SITE NAVIGATION

2.1 Sign In

Open a web browser and navigate to https://silvassist.com/. Enter your SilvAssist credentials and click Login. Your SilvAssist Credentials were sent to your email and contain an automatically generated password. If you have forgotten your password and/or need a reminder of your user name, click the Forgot Password button. Enter the email address associated with your account and you will be sent a password reset email. Your password can also be changed after log in from the My Profile page (see Section 9.0)



Sign In and Forgot Password

2.2 Navigation Bar

SilvAssist Inventory Project Manager consists of multiple pages and tabs. Each page provides different data categories and tools. At the top of every page is the Navigation Bar. The Navigation Bar is the main menu of IPM. It is where you will switch between site. Below are the descriptions of each component of the Navigation Bar.



Navigation Bar

2.1.1 Navigation Bar Tabs

Below is a brief overview of the contents of each page. These pages will be covered in-depth in later sections.

Dashboard – An overall summary of project progress across all Projects

<u>Status</u> – A more in-depth breakout of project progress per project that is displayed on various tabs.

<u>Cruise/Audit</u>- Provides Cruiser production metrics per project, including cruiser plots per day, total plots, plots audited, and audit comparison results. This is displayed on various tabs.

<u>Data/Reports</u> – Inventory data (both calculated and raw data) volume and statistical data are presented for viewing and export on this page. This is displayed on various tabs.

<u>Edit Map</u> – This map interface contains the plot allocator, stand editor, and provides the ability to import spatial data into SilvAssist. Users must be Editor, Creator, or Admin level users in order to see and use the Edit Map page.

<u>More</u> – Depending on your organization's configuration, the More menu may not be displayed for you. This menu expands to provide a link for the ArcGIS Online Group (if configured), a download for SilvAssist Mobile, or other custom links.

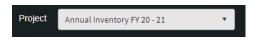
<u>Admin</u> – The Admin menu will display differently depending on your user type which will be covered more in section 11.0. Viewer, Cruiser, and Editor users will not see the Admin tab.

My Profile – Your profile page will allow you to change your password and preferred email address.

<u>Notifications</u> - The Bell icon is where in-app notifications will appear to notify you that an action has been completed (plots allocated, project calculations run, etc.). Click on the Bell to expand the Notifications pane.

2.1.2 Project Selection Menu

The drop-down menu on the right side of the Navigation Bar is how you will switch between inventory projects assigned to you. Selecting a project here will define which project's data you will see in the site pages. The Dashboard page does not display this menu since it is a summary of all projects.

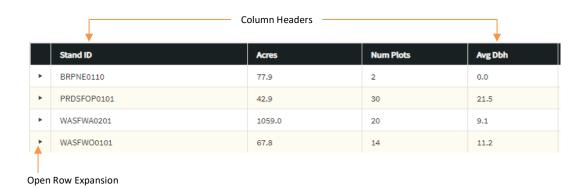


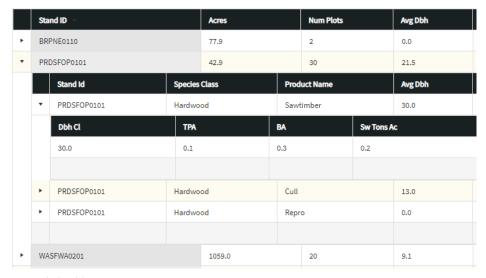
Project Selection Menu

2.3 Table Operation

Many pages and tabs on the site contain data tables that display records for project progress, calculated volumes, raw data, etc. These tables all follow the same basic familiar design. Column headers can be clicked on to sort: one click for ascending values then another click for descending. Some tables have the ability to change the way the data is grouped. You can group the table by clicking on the column header and dragging it to the area that says, "Drag a column header and drop it here to group by that column." To remove a grouping, click the X on the filter item that appears.

Additionally, many tables have rows that can be expanded to drill-down into data further. Click on the arrow in the row on the left side of the table to open the data expansion level. Additional details on individual tables are covered in later sections.

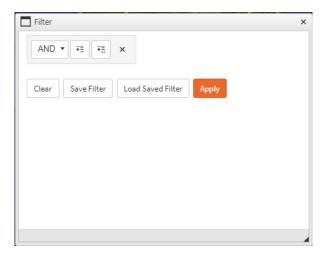




Expanded Table

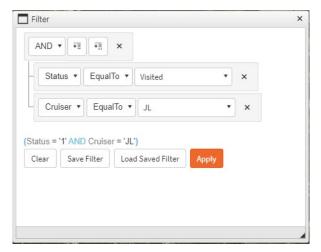
2.4 Filter Tool

Maps in the IPM include a filter tool that can be used to create queries to find plots in the map. Query expressions are built using Boolean logic and pre-defined fields to highlight corresponding plots on the map. To create a query, select your operator (the dropdown menu with ADD) and click on the Add Expression icon. Select your parameters from the dropdown menus to create your query, adding additional expressions as needed. Click Apply to highlight plots in the map. You can also save commonly used filters and load them when needed. Click the Clear button to clear the filter from the map.





Filter Tool



Example Query

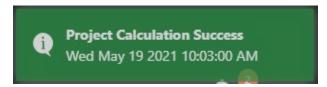


Corresponding Plots Highlighted in Map

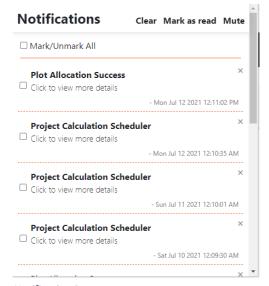
2.5 Notifications

The Inventory Project Manager has live notifications that alert you when an action has been completed. Clicking the bell icon in the Navigation Bar will open the Notifications pane. The orange number next to the Bell is the count of unread messages. Clicking on a notification will open a new window to provide more detail. The Clear button will remove a notification from the pane. You can select one or many messages to bulk delete. You can also mark a message as read to save for later. Also, temporary pop-up notifications will appear on the screen as well to alert you as needed for various tasks. Clicking the Mute button in the Notification Pane will turn these off.





Pop-up Notification



Notification Pane



Notification Details

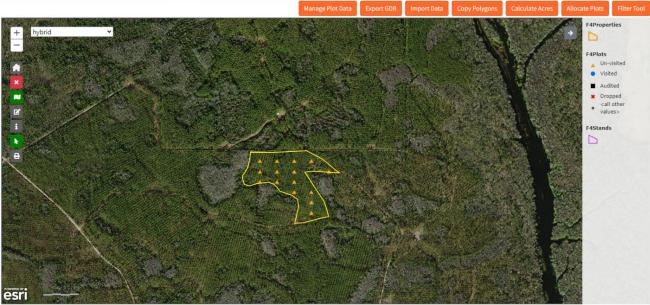
3.0 EDIT MAP

3.0 EDIT MAP

The Edit Map is a major part of the Inventory Project Manager. This is where you can draw or import inventory stand boundaries, overall property boundaries, and allocate plots. Plot allocation will be covered in depth in Section 4.0.

The Edit Map has its data filtered based on which project you have selected in the menu at the top of the page. To switch between projects, click on the dropdown and select which project you wish to view data for. This will determine which project your stands and plots will appear in for reporting and data collection on SilvAssist Mobile. This step is important.

3.1 Map Interface



Edit Map

Map Navigation

Click and drag in the map to pan to different locations. You can zoom in and out by using your mouse scroll wheel or clicking the + and – buttons in the upper-left corner of the map. Other icons below the + and – buttons are described in section 3.2.1

Layers and Legend

The layers in the map include plots, stands, and property boundaries. The legend is in the upper right corner of the map and shows the symbology representing the different status categories of plots. When you are zoomed out you will only see the property boundaries. Zoom in to see stand boundaries and plots.

Export GDB

Click on the Export GDB button to download a File Geodatabase of GIS layers.

Import Data

Click on the Import Data button to upload data to SilvAssist. The Import Data tool is explained in Section 3.3.

Manage Plot Data, Copy Polygons, Calculate Acres, and Allocate Plots

These buttons will initially be disabled and greyed out when the map loads. When one or more stands are selected, these buttons will become enabled. The buttons will also be disabled if you have the Edit Widget open. Individual item functions are covered in later sections.

Filter Tool

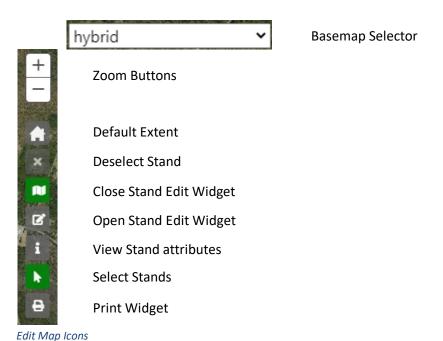
Click on the Filter Tool button to query plots to highlight in the map. The Filter tool is explained in Section 2.4.

3.2 Drawing Stands

Drawing stands is accomplished using the Edit Widget in the map on the Edit Map Page. To open the Widget, zoom into the area where you intend to draw a stand and click on the Open Stand Edit Widget button as seen below.

3.2.1 Map Button Functions

Below are descriptions of the icon functions in the Edit Map. Currently selected icons/tools will be highlighted in green. Icons/tools not available while using the Stand Edit Widget will be greyed out.



<u>Basemap Selector</u>: You can select a different basemap for the map display using this dropdown menu. Esri's Hybrid Imagery is displayed by default.

<u>Zoom Buttons</u>: These buttons can be used to zoom in and out on the map. You can also use your mouse's scroll function to zoom.

<u>Default Extent</u>: The home icon will zoom the map to the default extent which is the full extent of your Property layer.

<u>De-select Stand</u>: This button is used when the Edit Widget is disabled. It will remove the current stands from selection. This icon will turn red when active.

<u>Close Stand Edit Widget</u>: Click this button to close the Edit Widget. This will re-enable the orange buttons above the map for Calculate Acres or Allocate Plots.

<u>Open Stand Edit Widget</u>: Click this button to open the Edit Widget. With the Stand Edit Widget open you can draw a new stand, modify the geometry of an existing stand, and edit attributes for a stand.

<u>View Stand Attributes</u>: When the Edit Widget is closed, this tool will allow you to click on a stand and view its attributes in a pop-up window

<u>Select Stands</u>: When the Edit Widget is closed, you can use this button to select a stand for plot allocation, calculating acres, or copying. When stands are selected, they will be highlighted yellow and the orange buttons above the map will become enabled.

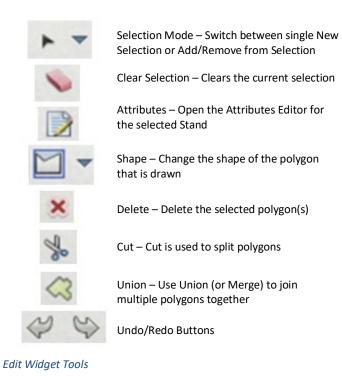
<u>Print Widget</u>: This button will open the Print Widget window. The Print Widget is described further in section 3.7.

3.2.2 Using the Edit Widget

With the Edit Widget open, the legend will be replaced by the widget's pane, described below.







Create a new stand

To create a new stand, click on the feature in the widget pane with the purple polygon labeled F4Stands. The feature will be outlined in blue. Mouse over to the map and you will see a box appear next to your cursor that says "Click to start drawing. Press CTRL to enable snapping." Snapping will snap your cursor to an existing polygon so that you are able to draw stands adjacent to one another without gaps in between.

As you click on the map you will add a new vertex on the boundary of your polygon. When you are satisfied with the shape of your drawn stand, double click on the map to complete the polygon and the Attribute Editor window will appear. The Edit Widget's tools can also be used to modify stand geometry and delete stands. While there is an undo button, if you close the widget or refresh the page, your changes will be committed.

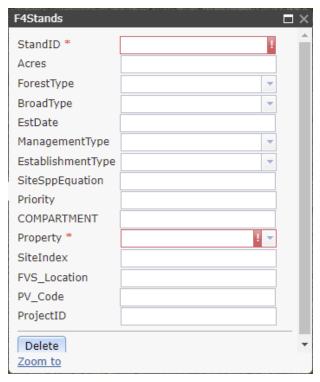




Click to Start Drawing, Double-click to Complete

Attribute Editor

When you have completed a drawing, the stand attribute editor window will appear. There are two required fields that must be filled in to save the stand: StandID and Property. StandIDs must be unique for stands in the same project. You will not be able to save the polygon if the inputted StandID already exists. Property is also important to select properly as it will ensure that stands display properly and plots are allocated into properties that cruisers are assigned to.



Attribute Editor Window

If you know the values for the other fields in the attribute window you may fill those out as well. Acres can be calculated by closing the Edit Widget, selecting the stand, and then clicking the Calculate Acres button. ProjectID will be automatically populated once the stand has been created.

3.2.3 Editing Properties

Property boundaries can also be added and modified in the Edit Widget. Property boundary editing follows the same process as above with the only difference being that the F4Properties feature must be selected instead of F4Stands.

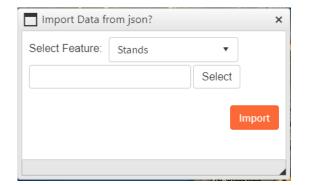


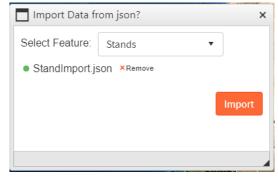
F4Properties Selected

3.3 Import Data

Importing data is the suggested method to import large ownership records and is accomplished by uploading a JSON file. Your stand, plots, and property features can be converted to JSON by using GIS software. For example, in ArcGIS the Features to JSON tool can be found in the Conversion Tools toolbox. Note: Imported layer attributes must be mapped to match the database schema in SilvAssist. The easiest way to accomplish this is by using the Export GDB feature to export a dataset to your computer. Delete any existing features that were exported from SilvAssist. Import your layers into the now-empty dataset, mapping the fields as necessary. This feature layer can then be used to convert to JSON using the ArcGIS tool. Take note of where you save the exported JSON file. Following this method will ensure that your input file will match the SilvAssist database schema.

To import, click on the Import Data button in the Edit Map. Choose the type of feature you intend to import, then click the Select button and navigate in the file explorer to the location where you saved your JSON file. Only one JSON can be uploaded at a time. Click Import to import the data to SilvAssist.



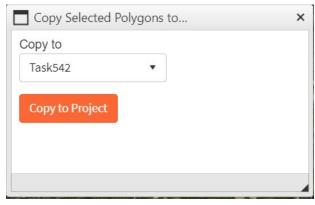


Selected JSON Ready for Import

Select JSON from Computer

3.4 Copy Polygons

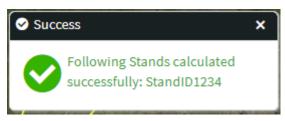
If you have stand polygons in an existing project that you would like to use in a new project, use the Copy Polygons button to copy from one project to another. Once a new project is created, open the project containing the stand polygon you wish to copy. Select one or more stands to copy from the map and click the orange Copy Polygons button. A new window will appear with a dropdown menu to select the project you are copying to. Choose your project from the menu and click the Copy To Project button.



Copy Polygons

3.5 Calculate Acres

Although acres are automatically calculated every night, you can calculate acres sooner using the Calculate Acres tool. Select the stand(s) you need to calculate acres for and click the orange Calculate Acres button. A message will appear alerting you to a successful calculation. You can return to the Stand Edit App to see the calculated acres in the attribute popup.



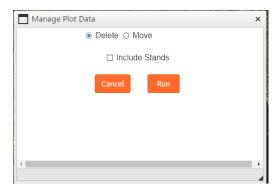
Acres Calculated Successfully

3.6 Export GDB

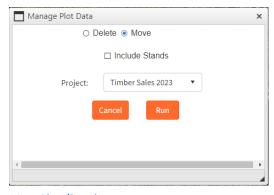
Clicking the Export GDB button will initiate a download of an Esri File Geodatabase (.gdb) containing plot, stands, and properties that you can use in GIS software.

3.7 Manage Plot Data

When a stand has been selected, this tool will allow you to delete plots from the current project or move them to a new project. An additional checkbox enables the ability to include the selected stand in the procedure as well. If Move is selected, the project where data is being transferred to is selected from a new menu. Select Run to proceed.



Delete Plots/Stands



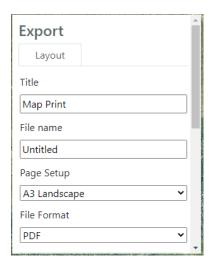
Move Plots/Stands

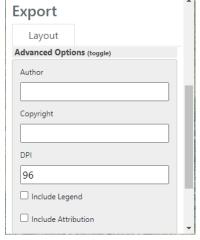
3.8 Print Widget

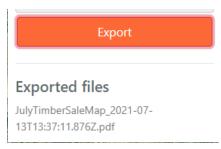
The Print Widget provides the ability to export the map view into a variety of different formats, including a georeferenced PDF. A basic default layout is provided, however, F4 Tech can configure a custom print layout based on your organization's template if desired.



Open Print Widget







Print Widget Window

Print Widget Window, continued

Export Button and Exported file list

Widget Options

<u>Title</u>: The deisred title for the exported map

File Name: An identif

<u>Page Setup</u>: Select from the dropdown the layout for the export map.

File Format: Select from the dropdown the format for the export. PDF maps are georeferenced.

<u>Author</u>: An option field to denote who created the export map.

<u>Copyright</u>: An option field to denote other identifying information about who created the export map (organization name, department name, etc.)

<u>DPI</u>: Quality level of exported map. Default of 96 should be sufficient for most users. Increasing this value may increase processing time and will increase file size.

Include Legend: Checking this option on will include a legend in the map

<u>Include Attribution</u>: This option only applies to custom map layouts that include feature attribute tables. This does not apply to the default layout.



Configuring Map Export

Clicking the Export button after configuring the settings will begin the export process. Once complete, a link to open and download the file will appear in the Exported files section below the Export button.



Sample Exported PDF Map Layout

4.0 PLOT ALLOCATION

4.0 PLOT ALLOCATION

If your user type allows for its use, you will see the Edit Map tab in the Navigation Bar. Plot Allocation is conducted within this map. See Section 3.0 for more information on the Edit Map.

4.1 Plot Allocation

Plot allocation is performed within the Edit Map tab. Refer to section 3.0 for more information on this map interface.

4.1.1 Project Selection Menu

The Edit Map has its data filtered based on which project you have selected in the menu at the top of the page. To switch between projects, click on the dropdown and select which project you wish to view data for. This will determine which project the plots will appear in for reporting and data collection on SilvAssist Mobile. This step is important.

4.1.2 Select a Stand

In the Edit Map, you can select one or multiple stands to allocate. If you use the filter tool, the stands will be automatically selected for you. If you would rather choose them manually, zoom in on the map and select a stand by clicking on it. A stand highlighted in yellow means it is currently selected and ready for allocation. You may allocate plots to an empty stand, or to a stand with unvisited plots. Allocating plots to a stand that contains visited plots is not permitted and will return an error.

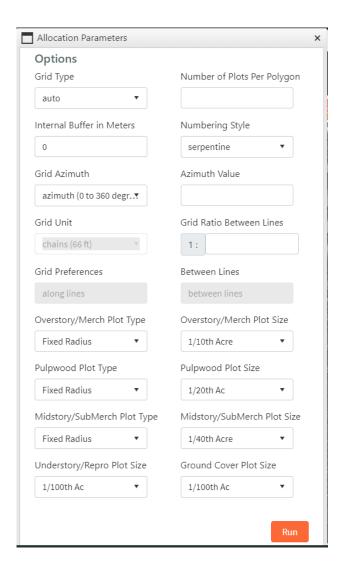


Selected Stand

4.1.3 Allocate Plots

When you have your stand(s) selected for allocation, the Allocate Plots button will be enabled and colored orange at the top of the map. Click on this button to bring up the Allocation Parameters

window. This window is where you will set your grid preferences and also your plot size and type. The different parameters are described below.



Grid Type

Grid type is the overall manner in which the plot grid gets created. As different grid types are selected, certain allocation options will become greyed out if they are not relevant to that grid type. There are 4 different grid types that are available to choose from:

<u>Auto-</u> Auto grid type will automatically best-fit your plot grid based on a predetermined number of plots. This method should be used for polygons where the number of desired plots is known. Auto also requires a grid ratio value for the spacing of cruise lines. The default spacing units for Auto is in chains.

<u>Custom</u>- This option should be used where the desired number of plots per polygon is unknown but the desired spacing per polygon is known. This grid will allow you to set the units for the grid, along lines and between lines.

<u>Random</u> – The purpose of the Random grid is to place a specified number of plots in each stand in a random allocation. This removes the bias associated with grid spacing but can result in plot clumping and poorly sampled areas.

<u>Simple-</u>The purpose of a Simple Grid is to generate a stand allocation based on spacing. It will place a grid across the selected polygons, as if the boundaries between the polygons do not exist. This process will take longer to produce a grid than the others. Unlike a Custom grid which starts at a new random point for each stand, the Simple grid selects a single random start point. This option should be used where a uniform distribution is needed over a large selection of polygons

Number of Plots Per Polygon

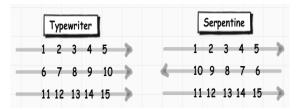
For grids that require it, type in your desired plot count per stand.

Internal Buffer in Meters

This value pushes plots away from polygon perimeters by the distance specified. If no buffer is desired simply leave the value at 0.

Numbering Style

The plot numbering style setting can be selected from the dropdown menu. You can choose between typewriter and serpentine.



Typewriter vs Serpentine

Grid Azimuth and Azimuth Value

Grid Azimuth is the orientation angle at which the plot grid will be laid out in the stand.

<u>Run Plots on Long axis of Polygon</u>- The Azimuth will be determined automatically as the axis between the two furthest points in the polygon. The Azimuth Value field will be greyed out if this option is selected.

<u>Azimuth (0 to 360 degrees)</u> - A value between 0 and 360 must be entered in the Azimuth Value field when this option is selected. This will be the azimuth assigned to all lines in the allocation grid.

Grid Unit

For grid types that require it, Grid Unit allows you to select the unit that will be entered as the distance between plots and between lines. Available units are chains, feet, and meters.

Grid Ratio Between Lines

For grid types that automatically determine the distance between plots and lines, the grid ratio allows you to determine the difference between plots and along lines. For example, a ratio of 1:1 allocates a square grid and a ratio of 1:2 or greater creates rectangular grids.

Grid Preferences- Along Lines & Between Lines

For grid types that require it, Grid Preferences is where you will enter the spacing along lines (between plots on a line) and between lines based on the Grid Unit you have selected. For example, with Grid Unit of chains, entering 3 in Along Lines and 5 Between Lines would allocate a 3x5 chain grid.

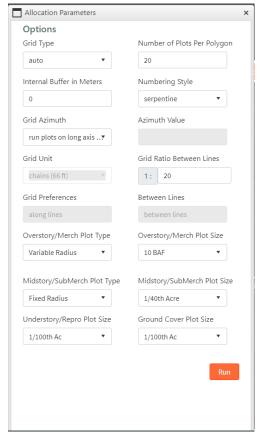
Plot Types and Sizes

Plot Types and Sizes are displayed as dropdown menu pick lists that are configured during project set up. Plot Types (also referred to as Plot Levels) can be hidden when that type is not in use (e.g. Overstory can be hidden for a planting check cruise). Setting up these choice lists is covered further in section 11.3.10.

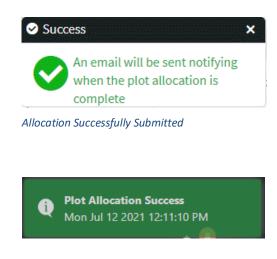
<u>Picking the appropriate values is important as it determines how calculations will be run and is also what will be displayed as reference information on SilvAssist Mobile.</u>

4.1.4 Running Allocation

When you have all your desired parameters configured, click the orange Run button at the bottom of the Allocation Parameters window. You will see a window pop up that confirms your allocation has been successfully submitted for grid creation. After a few moments (the more stands/plots allocated, the longer it may take) you will see another window pop up stating that your allocation has been completed successfully. The map will refresh, and you will be able to see your plots on the map. If you do not like the layout, you can repeat the process to reallocate with different parameters.



Allocation Parameters Window



Allocation Successfully Completed





Stand Before Allocation

Stand After Allocation

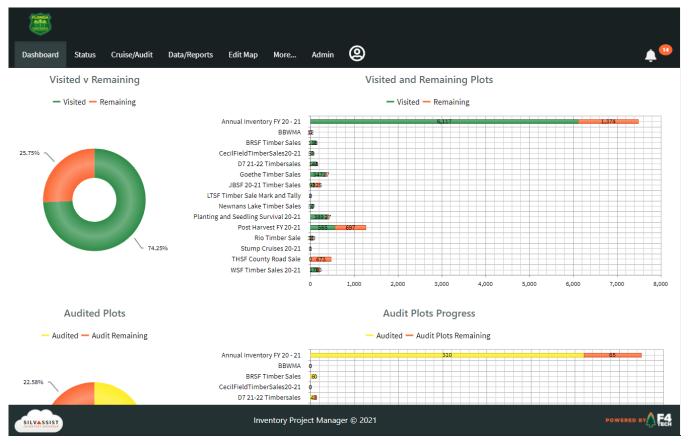
5.0 DASHBOARD

5.0 DASHBOARD

The Dashboard page provides summary overview charts of progress for all projects. It is also the main landing page for the site when you log in.

5.1 Dashboard Page

Below is the view of the Dashboard Page. Its components are described below.



Dashboard Page

5.1.1 Visited and Remaining Plots

The top half of the Dashboard contains charts showing overall progress of inventory projects by categorizing plots as visited vs remaining. The bar chart has plot totals broken out by project. The green portion of the bar represents visited plots and the orange portion is unvisited. Together, these sum to the total plots allocated on a particular project. The donut chart on the left summarizes plots across all projects. You can mouse over a chart segment to see the percent of total it represents.

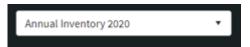
5.1.2 Audit Plots Progress

The bottom half of the Dashboard contains charts showing overall progress of auditing by categorizing plots as audited vs visited. The bar chart has plot totals broken out by project. The yellow portion of the bar represents audited plots, and the orange portion is total visited plots. This helps visualize audit

progress as a percentage of total plots inventoried. The donut chart on the left summarizes audit plots across all projects. You can mouse over a chart segment to see the percent of total it represents.

5.1.3 Project Selection Menu

As referenced in Section 2.1.2, the drop-down menu on the right side of the Navigation Bar is how you will switch between projects. Because the Dashboard summarizes all projects, this menu is hidden from view. It will appear when you select Project Selection Menu another site page to view.



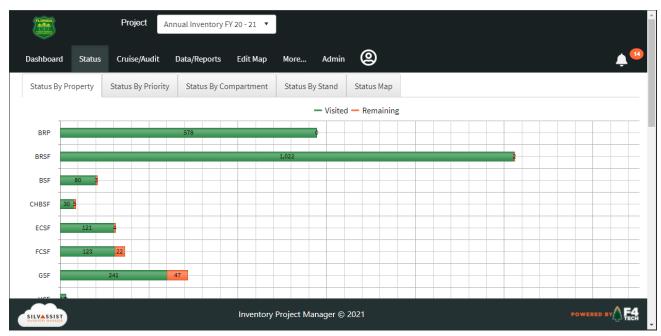
6.0 STATUS

6.0 STATUS

Whereas the Dashboard is a summary of inventory production across all projects, the Status page allows you to drill down to view project status on each individual project. Access the Status page by clicking on Status in the Navigation Bar. The Status Page is divided into 5 different tabs for data categorization. Click on a tab to switch to that view.

6.1 Status Page

Below is the view of the Status Page. Its components are described below.



Status Page – Status By Property

6.1.1 Project Selection Menu

The charts and tables in the Status Page have their data filtered based on which project you have selected in the menu at the top of the page. To switch between projects, click on the dropdown and select which project you wish to view data for.

6.1.2 Status By Property Tab

The Status By Property tab breaks out the visited vs. remaining plots by the properties they are located in. This is shown in the image above.

6.1.3 Status By Priority Tab

Status By Priority tab breaks out visited vs. remaining plots by priority level. Priority level is assigned by the Administrator.

6.1.4 Status By Compartment Tab

Status By Compartment tab breaks out visited vs. remaining plots by the Compartment they are located.

6.1.5 Status By Stand Tab

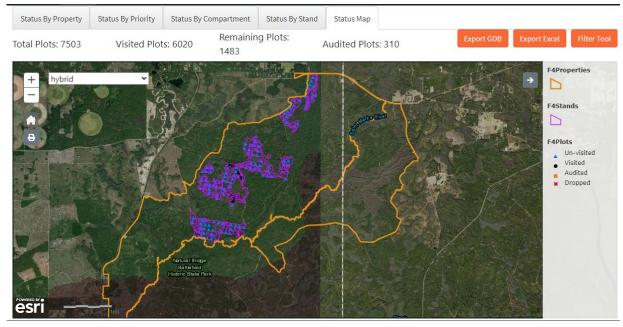
The Status By Stand tab displays plot status by individual stand. This table shows total plots, visited plots, remaining unvisited plots, and percent complete. See Section 2.3 for Table Operation. This table can be exported as an Excel document. Click on the orange "Export Excel" button to begin a download of the table to your device.



Status By Stand – Sorted descending on Visited Plots

6.1.6 Status Map

The Status Map is an important tool to visualize plot status and location in a map interface.



Status Map

Summary Information

Above the map is plot summary information on plots visited and plots remaining.

Map Navigation

Click and drag in the map to pan to different locations. You can zoom in and out by using your mouse scroll wheel or clicking the + and – buttons in the upper-left corner of the map. Below the zoom buttons are a Home and Layer icon. Clicking the Home button will return the map to the full extent. Clicking on the layer button will toggle the legend on and off. The Print Widget is also available in the Status Map. Print Widget configuration and functionality is described in section 3.7.

Layers and Legend

The layers in the map include plots, stands, and property boundaries. The legend is in the upper right corner of the map and shows the symbology representing the different status categories of plots. When you are zoomed out you will only see the Property boundaries. Zoom in to see stand boundaries and plots.

Filter Tool

Click on the Filter Tool button to query plots to highlight in the map. The Filter tool is explained in Section 2.4.

Export GDB

Click on this button to export a file geodatabase (.gdb) of the plots, stands, and properties in the map for use in GIS software.

Export Excel

Click on this button to export an Excel file of Plot level data. If you apply a filter with the Filter Tool, your Excel export will reflect this query.

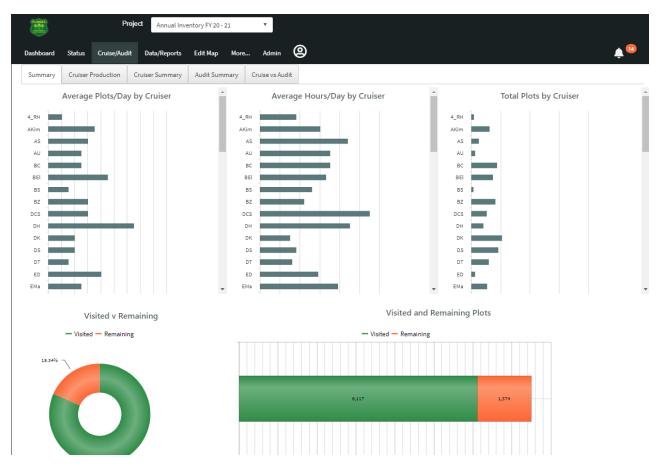
7.0 CRUISE/AUDIT

7.0 CRUISE/AUDIT

The Cruise/Audit page provides data on individual cruiser performance and audit progress Access this page by clicking on Cruise/Audit in the Navigation Bar. The Cruise/Audit Page is divided into 5 different tabs for data categorization. Click on a tab to switch to that view.

7.1 Cruise/Audit Page

Below is the view of the Cruise/Audit Page. Its components are described below.



Cruise/Audit Page - Summary Tab

7.1.1 Project Selection Menu

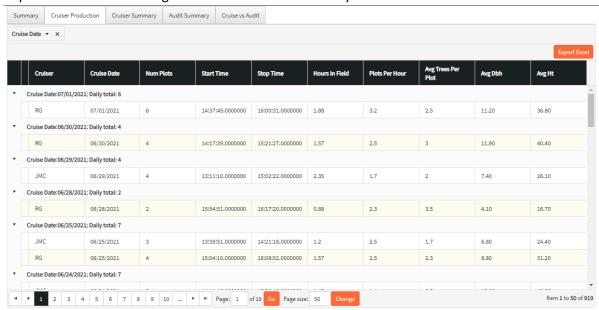
The charts and tables in the Cruise/Audit Page have their data filtered based on which project you have selected in the menu at the top of the page. To switch between projects, click on the dropdown and select which project you wish to view data for.

7.1.2 Summary Tab

The Summary tab contains several charts summarizing overall inventory status and shows at a quick glance plots per day, hours per day, and total plots by a cruiser. Mouse over a chart segment to see the values the graphic represents.

7.1.3 Cruiser Production Tab

The Cruiser Production tab displays plot RTI information for individual cruisers. This table shows cruise date, plots per day, hours in field, etc. By default, the table is grouped by date in descending order. See Section 2.3 for Table Operation. This table can be exported as an Excel document. Click on the orange "Export Excel" button to begin a download of the table to your device.



Cruiser Production Tab

7.1.4 Cruiser Summary Tab

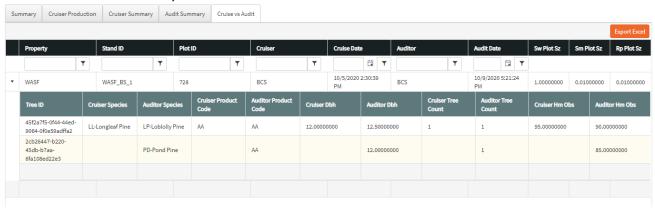
The data in the Cruiser Summary table is very similar to Cruiser Production, however it is rolled-up project wide on a per cruiser basis. This table can be exported as an Excel document. Click on the orange "Export Excel" button to begin a download of the table to your device.

7.1.5 Audit Summary Tab

Audit Summary is like Cruiser Summary in that it rolls up cruiser information on a project-wide basis. Audit Summary shows total cruiser plots, count of audited plots, date of last audit, and audit percentage. This table can be exported as an Excel document. Click on the orange "Export Excel" button to begin a download of the table to your device.

7.1.6 Cruise vs Audit Tab

The Cruise vs Audit tab is the way in which audit information data is delivered. The table is organized by PlotID and shows the cruiser's original data side by side with the auditor's data. The view in the tab shows selected records such as species, product, Dbh, etc. The full table can be exported as an Excel document for you to run your own audit scoring. Click on the orange "Export Excel" button to begin a download of the table to your device.



Cruise vs Audit Tab

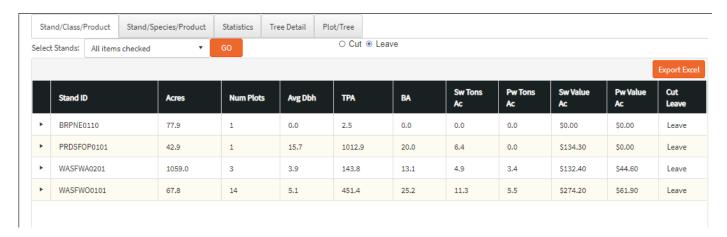
8.0 DATA/REPORTS

8.0 DATA/REPORTS

The Data/Reports page is where all your raw and calculated inventory data can be found.

8.1 Data/Reports Page

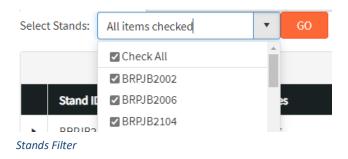
Below is the view of the Cruise/Audit Page. The tables are like other tables seen throughout the site with a few additional filters available. On all Data/Report tabs, there is a Stand Filter. Click on the dropdown menu next to "Select Stands," check the box next to each stand you wish to filter data for and click the Go button to filter the table. Additionally, next to the stands filter is a radio button for Cut/Leave. Selecting Cut or Leave will automatically refresh the table and display tree records that were identified as such in the field. These two filters will stay applied as you switch between the tabs on the Data/Reports Page and apply to any Excel exports which are available for download on every table.



Data/Reports Page - Stand/Class/Product Tab

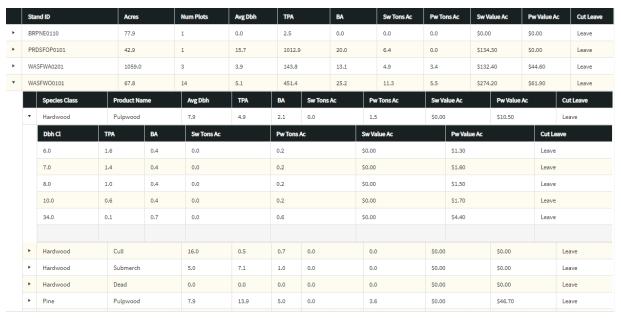
8.1.1 Project Selection Menu and Stands Filter

The tables in the Data/Reports Page have their data filtered based on which project you have selected in the menu at the top of the page. To switch between projects, click on the dropdown and select which project you wish to view data for. You can also filter the table for one or multiple stands using the Select Stands filter.



8.1.2 Stand/Class/Product Tab

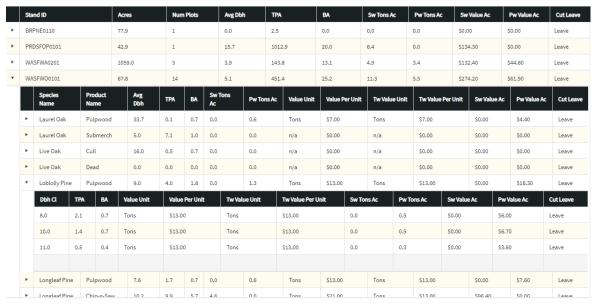
This data table displays inventory data by stand. Data is then summarized by overall species class (Pine or Hardwood) and product class (pulpwood, chip-n-saw, sawtimber, submerch, cull, dead). This data is then summarized further by diameter class for each species product. Click on the arrows on the left side of the table rows to expand the data to drill down into a stand.



Stand/Class/Product Table

8.1.3 Stand/Species/Product Tab

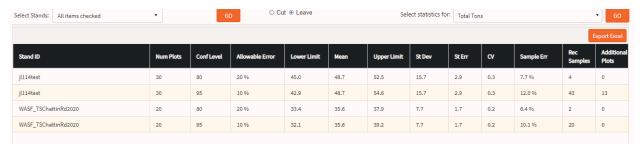
This data table displays inventory data by stand. Data is then summarized by species and product class (pulpwood, chip-n-saw, sawtimber, submerch, cull, dead). This data is then summarized further by diameter class. Click on the arrows on the left side of the table rows to expand the data to drill down into a stand.



Stand/Species/Product Table

8.1.4 Statistics Tab

The Statistics Tab displays statistics calculations per stand. In addition to the filters previously mentioned in Section 6.1, the Statistics Tab also includes a filter to show statistics for Total Tons(default), BA, and TPA. To change the statistics type, select from the dropdown menu in the upper right of the table and click Go. This table also displays the recommended number of plots required to meet statistic requirements, including how many additional plots are needed over the amount that have already been collected.



Statistics Table

8.1.5 Tree Detail Tab

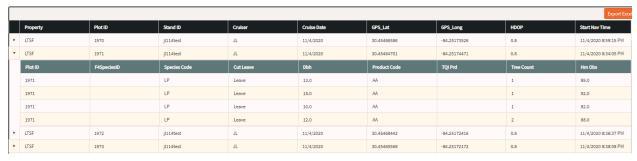
The Tree Detail Tab displays calculated volumes for each stand at each plot. The plots are then broken out into the product and calculate volume for each tree on that plot.



Tree Detail Table

8.1.6 Plot/Tree Tab

The Plot/Tree Tab displays the raw tree data that was collected on plot in the field. It includes information such as Cruiser ID, product code selected by cruiser, GPS coordinates, etc. This data is typically intended for export to Excel.

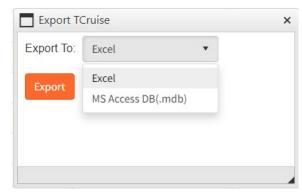


Plot/Tree Table

8.1.7 Export to TCruise

If the setting is enabled at the organization level, an additional button will be present on the Plot/Tree tab: Export TCruise. Data in TCruise import format can be exported to either an Excel file or an Access database (.mdb). If Excel is selected as the output, the download will begin immediately. If the .mdb is selected, you will receive an email with a link to download the file. This will also appear in the Notification pane. Additional configuration at the Project template level is needed to map custom fields. This is described more in section 11.5.2.





Export TCruise format selection

TCruise-Southeast Master-23.06.27.13.13.38.30 generated successfully.

MS Access DB for Southeast Master has been generated successfully. Here is the download link

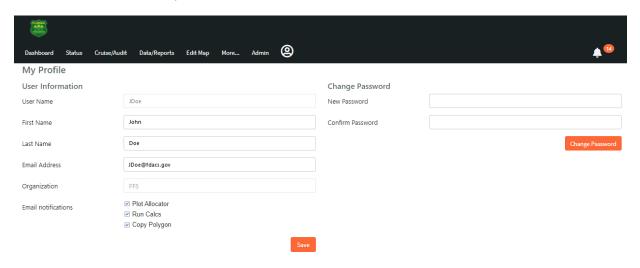
Download

Notification message with download link

9.0 MY PROFILE

9.0 MY PROFILE

Clicking on the My Profile icon and then My Profile from the menu will take you to your user profile page. This is where you will see your account information. You can change your SilvAssist password here if desired. Toggles to disable email delivery of various notifications are also available here. Email notifications are enabled by default.



My Profile Page

10.0 ADMIN

10.0 ADMIN

As an Admin user, you will see 3 pages available under the Admin Tab: Users, Organization, Projects. User management and the Organization page will be discussed in this section while Projects will be covered in Section 12.0.

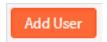
10.1 Users Page

The Users Page contains a table of all users and their attributes. Click on the pencil icon to edit an existing user or scroll down and click the Add User button to add a new user.

Users

Edit	Florida Forest Service *	Name	Email	Role	User Type	UserStatus	Client Admin	Updated
/	brooks.churn	Churn, Brooks	Brooks.Churn@fdacs.gov	Editor	OrgUser	Enable	False	02/08/2021
/	ryan.slyter	Slyter, Ryan	Ryan,Slyter@fdacs.gov	Creator	OrgUser	Enable	False	07/08/2021
/	ryan.hensel	Hensel, Ryan	Ryan.Hensel@fdacs.gov	Creator	OrgUser	Enable	False	03/04/2021
/	emily.martin	Martin, Emily	Emily.Martin@fdacs.gov	Editor	OrgUser	Enable	False	02/08/2021
/	aaron.kim	Kim, Aaron	Aaron.Kim@fdacs.gov	Editor	OrgUser	Enable	False	07/09/2021
/	vitor.aguiar	Aguiar, Vitor	vitor.aguiar@fdacs.gov	Creator	OrgUser	Enable	False	07/12/2021

Users Page



Add User Button

10.1.1 User Roles

There are five categories of user roles in SilvAssist. A capability matrix comparing the various user types is below. The amount of users available in each category is based on your SilvAssist subscription. Contact F4 Tech if more users of a particular category is needed.

	Viewer	Cruiser	Editor	Creator	Admin
View reports and Status Map in Inventory Manager	Х	Х	Х	Х	Х
Collect data in SilvAssist Mobile		Х	Х	Х	Х
View and use Edit Map to edit stands and allocate plots			Х	Х	Х
Modify/create project templates and specs				Х	Х
Manage users and organization details			·		Х

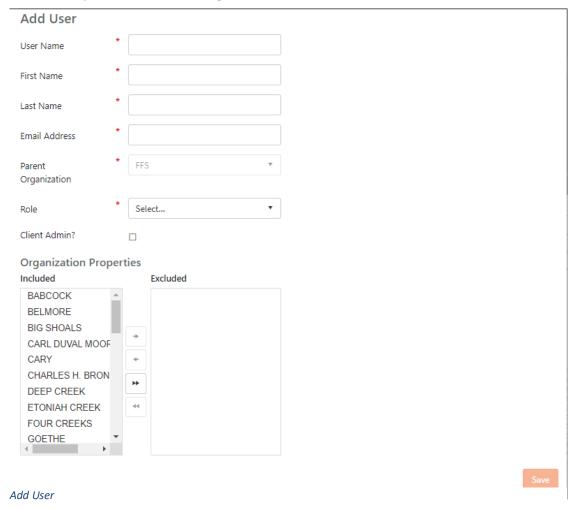
10.1.2 Adding a New User and Modifying Existing Users

Add New User

Click on the Add User button on the main Users page to configure a new user. Fill out the form appropriately, adding the desired user name, the user's name and email address. This email address will be the address that the user receives their credentials to. The Parent Organization will not change from your organization. Below Parent Organization, choose the user's role from the dropdown menu. Then check on the box next to Client Admin should they need that permission type.

Organization Properties is the way users are assigned properties. This will filter data in the maps and tables for only those properties they need to see. There are two tables, Included and Excluded shown here. Included are properties the users will see. By default, all properties are included upon initial load. To move assigned properties between the two tables, click on a Property in the list and select the single arrow to move it left or right. Click the double arrows to move all items in the list from one side to the other.

The Save button will remain disabled until you fill out the required fields in the form (denoted by a red asterisk). When you have finished filling out the information, click Save to add the user.



Modifying Existing Users

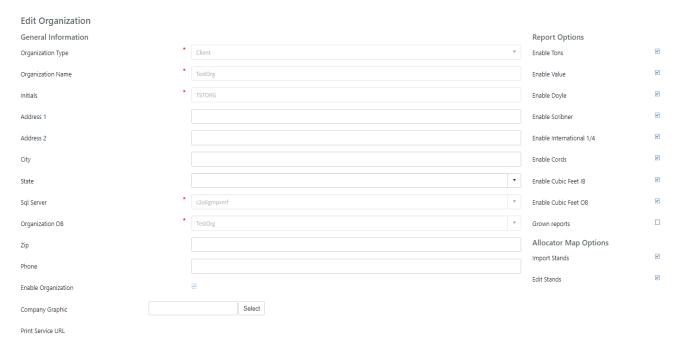
To modify an existing user's settings, click on the pencil icon to the left of the user in the table whose record you wish to edit. The Edit User page is nearly identical to Add User. From here, you can modify the information and settings following the steps outlined previously.

Additionally, on this page, you can Disable a user's account here by unchecking the box next to "Enable?". This will allow you to keep the user's record in the system but will not allow them to use the app. If you need to remove a user altogether, click the "Delete" button at the bottom of the page. If you have modified the user, be sure to click the "Update User" button at the bottom of the page.

Any changes made to a user's settings will require that user to log out and log back in to see the changes. The user will also need to download new project replicas in SilvAssist Mobile if they are added to or removed from properties.

10.2 Organization Page

Below is the view of the Organization Page. Fields that are greyed out are system values and cannot be modified. Other fields can be modified as needed. Under Report Options, there are checkboxes next to units that can be enabled to show as options for reporting as well as options for stand import and editing.



Organization Page

At the bottom of the page is the Role Access Detail table. This table displays the count of license types per your organization's subscription. As users are added and assigned to a role, this table will automatically update. Contact F4 Tech if you need to update your licenses.

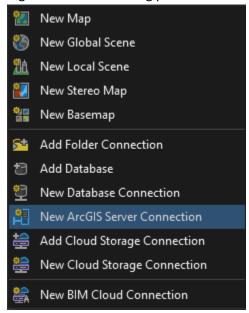
User Level	Total User	Assigned User	Remaining User
Creator	100	76	24
Viewer	100	0	100
Editor	100	29	71
Cruiser	5	1	4
Admin	20	8	12

Role Access Details table

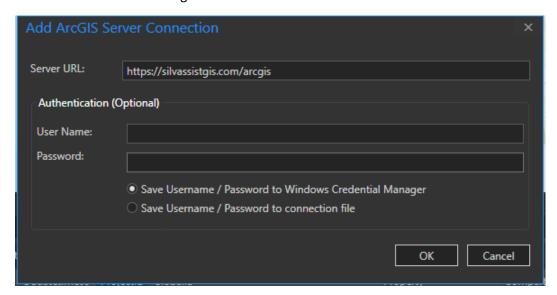
10.3 Connecting to SilvAssist ArcGIS Server

Data analysts or other users who have been authorized by their organization admin to do so can connect directly to the SilvAssist ArcGIS Server to view and edit raw data. Note: Users should take caution when viewing and editing data using the following procedures. This is a direct connection to the database and any edits made here will affect back-end data. Data can be reverted by F4 Tech but this is not recommended for novice users. An ArcGIS Online Basic license will not allow editing.

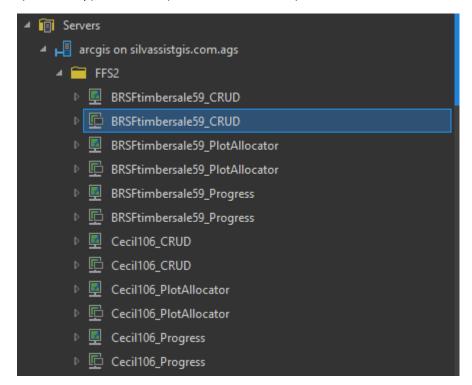
- 1. Open ArcGIS Pro and open the Catalog pane.
- 2. Right click in the Catalog pan and select New ArcGIS Server Connection from the menu



3. In the window that appears, enter https://silvassistgis.com/arcgis in the ServerURL line. Then enter your SilvAssist credentials under Authentication. Choose to save the credentials to either Windows Credential Manager or to the connection file.



4. You will now see the server connection under the Servers folder in the Catalog pane. Double click on the server name to connect, then double click on the folder to see the feature services for your organization's projects. Each project will have three different services: PlotAllocator, Progress (status map), and CRUD (mobile cruise service).



5. Each service is represented by a Map Service and a Feature Service. To query and edit data, you must load the Feature Service and NOT the Map Service. You can determine which is which by looking at the icon next to the service name. The connection with the black rectangle is the Feature Service. If you mouse over the connection it will also be displayed in a popup box



6. Drag the desired service to the Contents pane or right click and select Add to Map to add the service to your map for viewing and editing. In most cases, the Cruise (or CRUD) org template services would be the preferred service to use to query all data. These names are typically titled "orgnameCruise"

11.0 PROJECTS

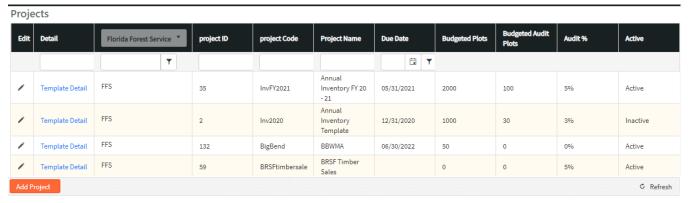
11.0 PROJECTS

The Projects page is where Creator or Admin users will go to create new inventory project templates or modify existing templates.

11.1 Projects Page

Below is the view of the Project Page. Its components are described in the subsections below.

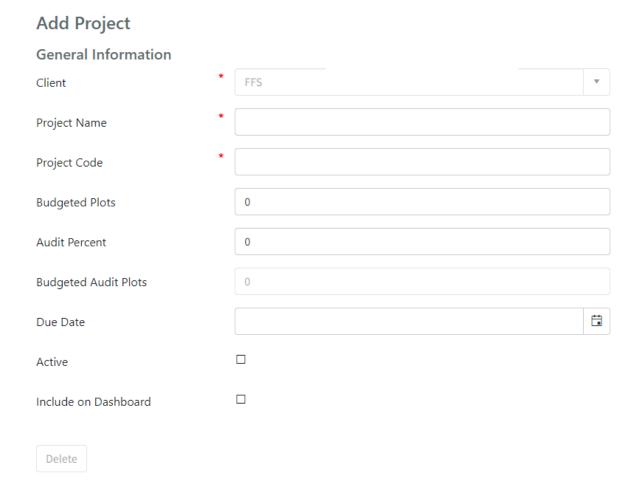
The associated tables for project template creation have editing at two levels. The pencil icon is used to edit the instance of a record in the table. Clicking on a blue record will open the details for that record. For example, when you add a new record for a Domain, you would click "Add new record" to create a new entry in the table, then type a description/name for the domain and select its data type. If you were to click the pencil again, you would bring up these values to edit again, where possible. You would then click on the blue description/name you created to edit the contents/detail of that record.



Projects Page

11.1.1 Add a New Project

To add a new project, click the Add Project button at the bottom of the table on the table on the Project Page. The components of this page are described below. Most of these components can be modified later if needed.



Add Project Screen

<u>Client</u> – This is configured upon organization set up by F4 Tech. It can not be modified.

<u>Project Name</u> – The Project Name field is the full name of the inventory project. This is the name that will show up in the IPM project menu. It is also what will be displayed in the project grid on SilvAssist Mobile. <u>Project Code</u> – Project Code is a shorthand version of the Project Name. It is used for processes in the backend of the system. This should be a descriptive code that is recognizable but <u>less than 10 characters</u> <u>and without spaces</u>. For annual projects, it is also advisable to include the year. For example: Annual

Inventory 2020 has a Project Code of Inv2020. The ProjectCode cannot be modified once the project is saved.

<u>Budgeted Plots</u> – This is a record keeping field that can be used to keep track of plots you have budgeted for this project. The value in this field does not have an impact on how many plots are actually allocated. It also influences the audit information as below.

<u>Audit Percent</u> – The value in this field will be used to calculate the Budgeted Audit Plots. This is entered as a whole number (e.g., 3 for 3%)

<u>Budgeted Audit Plots</u> – The Budgeted Audit Plots field is automatically calculated based on the inputs for Budgeted Plots and Audit Percent

<u>Due Date</u>- Another record keeping field, this Due Date field can be used to keep track and remind users of deadlines.

<u>Active</u> – Checking the box next to Active will determine whether the project is visible for non-Admin users. This is useful for keeping projects hidden from the app while you are still configuring it, or to keep an older project available to use as a template for the creation of a new project. This can also be used if you have completed field inventory but wish to have the data continue to be accessible in the Inventory Manager. **Note:** For a project to be visible in SilvAssist Mobile, this checkbox must be checked on.

<u>Include on Dashboard</u> – This setting will exclude the project from the Dashboard page even while it is still active. The project will be hidden on the dashboard page but is still available on the project dropdown at the top of the page.

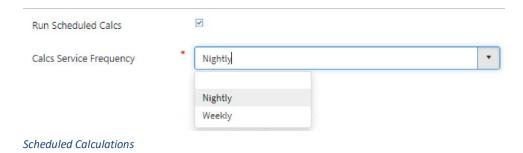
Click Save to create the Project. Reference Section 4.2 for the next steps on template setup.

11.1.2 Edit Existing Project Set Up Information

If you need to alter any of the information input as part of the process in section 4.1.1, click on the pencil icon next to the project in the table on the Projects Page. Services should not be altered unless you are instructed to do so by F4 Tech.

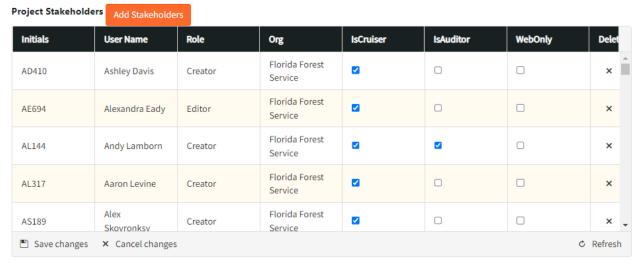
11.1.3 Turn off Scheduled Calculations

Once a project has been set up, you can alter the frequency or turn off the occurrence of the scheduled volume calculations. This is preferred when you wish to have a project's data displayed in the Inventory Manager but are not updating the inventory to where calculations are needed. Click on the pencil icon next to the project in the table on the Projects Page and scroll down to the Run Scheduled Calcs checkbox. If calculations are no longer needed, uncheck this box. If you would like to change the frequency of calculations, choose the appropriate option from the dropdown box.

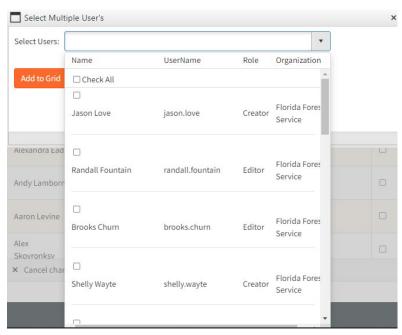


11.1.4 Project Stakeholders

The Project Stakeholders table is where you will add users to give them the ability to access a project. If a user is not on this table, they will not see the project either in the Inventory Project Manager or SilvAssist Mobile.



Project Stakeholders table



Add Stakeholder

To add a user to a project, click the Add Stakeholder button. In the window that appears, check all users you wish to add to this project.

The selected user(s) and their information will be added to the table. Initials are automatically generated by using the first and last initials of the user as defined in their profile along with a unique numeric identifier.

Finally, you will need to select how this user will interact with the project. There are three checkboxes in the table: IsCruiser, IsAuditor, WebOnly.

<u>IsCruiser</u>- This user will be able to download and open the project in SilvAssist Mobile. Their initials will appear in the cruiser list for this project in the app. This does not effect the way their user account interacts with the Inventory Project Manager (i.e. a Creator role user will still have all functionality of a Creator).

<u>IsAuditor</u>- This user will be able to download and open the project in SilvAssist Mobile. They will be able to toggle on audit mode in SilvAssist Mobile and see their initials in the auditor list.

<u>WebOnly</u> – This user will not be able to download and open the project in SilvAssist Mobile. They will only be able to view the project on the web.

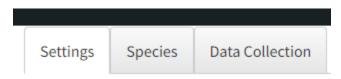
A user may be assigned as just a cruiser, just an auditor, both a cruiser and an auditor, or just web only. These settings apply only to the project currently being edited.

11.2 Template Detail Overview

Below is a typical workflow in creating a new inventory starting from scratch. However, this is also the general order if you are modifying an existing template. For example, to modify a data collection tab you may need to update a domain first to see the required values.

Once you have created a new project as described in Section 4.1, it is time to configure the project template for use. From the main Projects Page, click on the blue "Template Details" for the project you wish to edit.

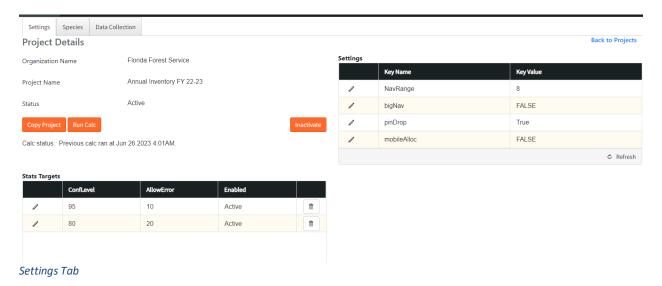
There are many tables that make up the inventory project template. Some tables will automatically update as you add values to another related table. These tables are organized on three tabs: Settings, Species, and Data Collection.



Template Detail Tabs

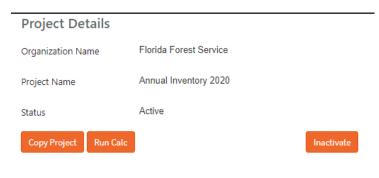
11.3 Template Detail – Settings Tab

The Settings tab is where various project technical settings and actions can be applied. The Settings tab has three sections: Project Details, Settings table, Stats Targets table.



11.3.1 Project Details

At the top of the Settings tab is the Project Details pane. Here the organization name, project name, and current status is displayed. There are also the three orange buttons described below.

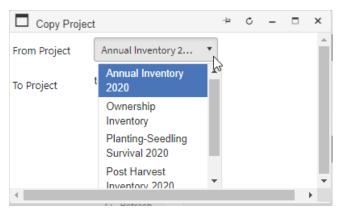


Project Details

11.3.2 Copy Project

The fastest way to create a template for a new project is to copy from an existing project. This will bring all the tabs, domains, species, etc. into the new project where you can then modify as needed. This can save a lot of time and effort compared to starting from scratch.

Click the orange Copy Project button on the Project Details page. Then select which project you wish to copy from the dropdown menu in the window that appears. Click Save Project to begin the copy process.



Copy Project

11.3.3 Run Calc

Inventory data and reports on the IPM are automatically updated on a nightly basis through scheduled jobs on F4 Tech's servers. If you would like to see updated reports sooner, you can click the orange Run Calc button to begin the update process. This process could take up to 2 hours to complete depending on the amount of data in the project. You will receive an email notifying you that calculations have been completed. A status indicator will display below the button showing when calculations were last run using this method. This status is useful to see if another user has run calculations recently. Reports may not display correctly until calculations have been completed.

Calc status: Previous calc ran at Feb 15 2021 2:00PM.

Calc Status

11.3.4 Active/Inactive Status

The orange Activate/Inactivate button on this page determines if the project will be available for download in SilvAssist Mobile. The current setting is displayed as the Status. A project can be checked as Active in the Edit Projects page (see section 12.1.1.) but remain Inactive on this page. In this instance, your project would be visible in the Inventory Project Manager but not visible on SilvAssist Mobile. To see a project on SilvAssist Mobile, make sure that "Active" is displayed as the Status here.

11.3.5 Settings Table

The Settings table is where various SilvAssist Mobile settings can be applied.

<u>NavRange</u> – This setting is measured in meters and is the distance at which a cruiser navigating to a plot will be alerted to the fact that they are at the plot.

<u>bigNav</u> – A value of True for this setting will turn on mock location in the mobile project which will enable users to access a plot without physically visiting its location. This should be set as False in most circumstances and is usually used for testing purposes.

<u>pinDrop</u> – This setting will enable the ability to add a new plot at the user's current location in SilvAssist Mobile.

MobileAlloc – This setting will enable the Mapping page and mobile plot allocator in SilvAssist Mobile. TreeGrading – If enabled at the organization level, this setting will enable the ability to configure specs and collect tree grades in SilvAssist Mobile

11.3.6

	Key Name	Key Value	
î	NavRange	10	
0	bigNav	True	
<i>i</i>	pinDrop	True	
i	mobileAlloc	True	
1	TreeGrading	True	
		♂ Refi	resh

Settings Table

Configure Statistical Targets

The Stats Targets table is where you will set your desired statistical targets. Click the orange Add Stats Targets button and enter your Confidence Level, Allowable Error, and designate that target as Active or Inactive. These settings determine how inventory project statistics are calculated and displayed in the Statistics Tab on the Data/Reports page (Section 8.1.4)

Stats Targets

	ConfLevel	AllowError	Enabled			
1	95	10	Active			
1	80	20	Active			
Add Stats Targets						

Stats Targets Table

11.4 Template Detail – Species Tab

The Species tab is where data collection options for species are configured as well as the merchantable specs for each species merch group.

11.4.1 Add Species Classes

Species Classes are a level of data summarization provided in the data reports and are also required to configure Merch Groups. Here is where those species classes are set up. Click "Add new record" to add a class or the pencil icon to edit an existing class.

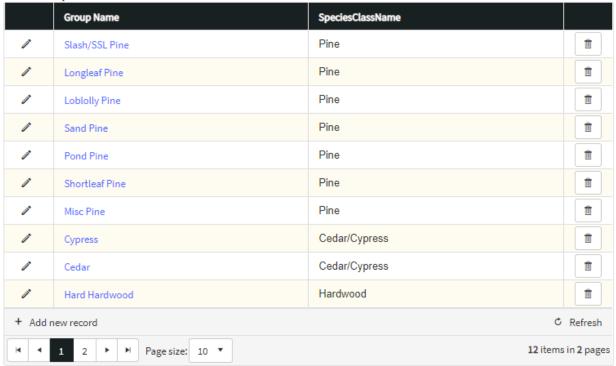


Species Classes

11.4.2 Add and Configure Merch Groups

The Merch Group table is where your merchandizing products and specifications are configured. Click "Add new record" then provide a Group Name, select the Species Class and click the check mark.

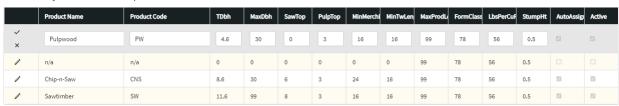
Merch Groups



Merch Groups

To edit the Merch Group Detail for a particular group, click the blue name in the table. This will open the product table for that group. Here you can edit products by clicking on the pencil icon to open the grid editor.





Back

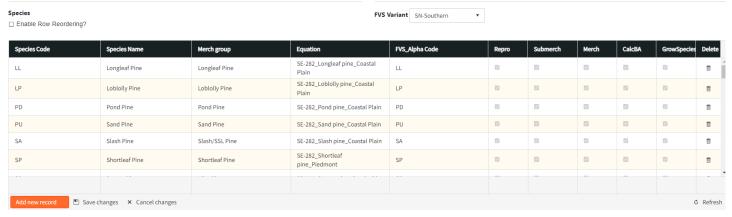
Edit Merch Group Detail

Column Header	Description	Units
Product Name	The full product name which will appear in reports	N/A
Product Code	The abbreviated product code which will appear in reports and SilvAssist Mobile	N/A
TDbh	Minimum diameter	inches
MaxDbh	Maximum diameter	inches
SawTop	Sawwood top diameter	inches
PulpTop	Pulpwood top diameter	inches
MinMerchLen	Minimum merchantable length	feet
MinTwLen	Minimum topwood length	feet
MaxProdLen	Maximum product length	feet
FormClass	Girard form class	N/A
LbsPerCuFt	Pounds per cubic foot	pounds
StumpHt	Stump height	feet
AutoAssign	Designates if this product will be used in AutoAssign	N/A
Active	Designates if this product will be visible and used in calculations	N/A

Merch Group Detail Column Descriptions

11.4.3 Add and Configure Species

The Species table is where species are configured for data collection, calculation, and reporting. Click the Add Species button to add a new species or click on a row to edit. Adding a species here will automatically add it to the species domains or, if it is the first species, will create the domains.



Species Table

Click the orange Add New Record button to insert a new row into the table. Fill out the parameters as described below:

<u>Species Code</u> - This code is what will appear in the picklist on SilvAssist Mobile and in reports. This does not need to exactly match the FVS Alpha Code

<u>Species Name</u> - The full name of the species that will be displayed in reports.

Merch Group – Choose the merch group this species belongs to from the dropdown menu.

<u>Equation</u> – Choose which volume equation to use to calculate volumes for this species. To add a custom equation, contact F4 Tech.

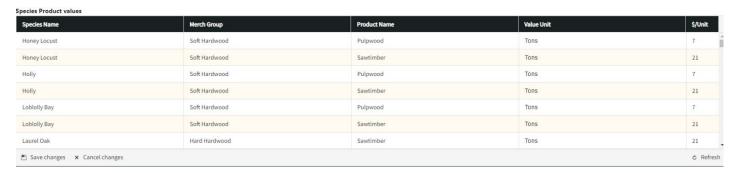
<u>FVS Alpha Code</u> – Choose the corresponding FVS Alpha Code for this species from the menu. The FVS variant can be changed by selecting a new choice from the FVS Variant dropdown menu above the table. <u>Repro, SubMerch, Merch</u> – Check these boxes on if you want this species to automatically be added to and included in the respective tree domains.

<u>CalcBA</u> – Check this box on if you want records of this species to be included in basal area calculations. <u>GrowSpecies</u> – Check this box on if you want records of this species to be included in growth calculations.

To reorder the values in the table, click the "Enable Row Reordering?" toggle to change the editing mode of the table. This will then allow you to drag and drop rows up or down in the table. The order species are displayed here are the order of how they will be displayed in the SilvAssist Mobile pick list. With any changes to this table, make sure to click Save changes when you are satisfied with the edits.

11.4.4 Configure Species Product Values

As you add species to the Species table, the Species Product Values table will automatically update with corresponding products. Clicking a row to edit a product will allow you to change the Value Unit and allow you to assign a dollar value per unit. Value Units available will depend on the units that are enabled on the Organization page (see section 11.2). Click the Save changes button to save your edits.



Species Product Values Table

11.5 Template Detail - Data Collection Tab

The Data Collection tab is where the mobile template form will be configured. Here you can add mobile template tabs, map data collection fields, add domains, and add error checks.

11.5.1 Add and Configure Domains

Domains are where the picklists are configured for data collection in SilvAssist Mobile. Picklists are important for data collection as they both improve efficiency in the field but also ensure data validity. Using a domain will force a user to only enter pre-configured data values.

Domains are created on three possible data types which correspond to available columns in the database:

<u>Int</u> – Whole number (no decimal) values <u>Numeric (or Float)</u> – Decimal number values String (or NVarChar(n)) – Text values

Some domains are automatically created. Tables with the prefix Spp are species tables that are generated and updated from changes that are made in the species table. The Prd (product) domain is also created when you add a Merch Group. See 12.3.3 for more on Merch Groups and 12.3.4 for more on Species.

Domains consist of a value and a description. The value is the record that is entered into the database. The description is a helpful plain text descriptor of what that value represents. These are called coded value domains. For example, for tree history, a value of "1" represents a live tree. The record stored in the database for that tree will have a "1" in the column but on SilvAssist Mobile the user will see "1-

Live." Another example would be a value of "LL" and a description of "Longleaf Pine", or "LL-Longleaf Pine."

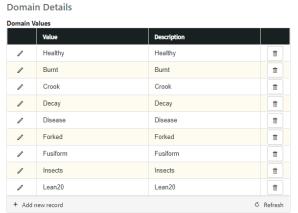
Depending on how the data is stored in the database, value and description could be identical. For example, tree health is stored as the full text value so the domain value would be "Healthy" and the description would be "Healthy," giving the user on SilvAssist Mobile a picklist value of "Healthy-Healthy." Keep this in mind as you create domains.

Add a New Domain

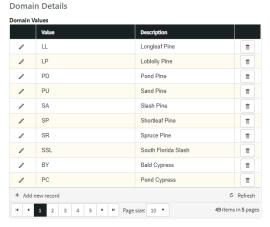
To add a new domain, click "Add new record" in the table and then type a name/description for the domain and the data type. Click the checkmark to save.

Configuring/Modifying a Domain

After you create a new domain or need to modify an existing one, click on the blue description name of that domain in the table. You can then add new records to the domain or click the pencil icon to modify an existing value. Click the trashcan icon to remove a record from the table.







Coded Value Domain

11.5.2 Add and Configure Data Collection Tabs

The Data Collection Tabs table is where the tabs for the SilvAssist Mobile project are created. These tabs are where inventory data is collected at each plot.

When you add a new Data Collection Tab, you will give the tab a name and select the Tab Type. There are two forms of Tab Type available:

<u>Plot</u>- A plot tab can be used to display reference information or tabs that are not built around the tree collection grid. An example would be the standard Plot tab but also presence of invasive species designed around a list of toggle switches.

<u>Tree</u>- A tree tab is used for data collection of tree data that will be input as a part of volume calculations and reporting. Examples include any tab with a tree grid.

A mobile project will require two tabs at minimum: one plot and one tree.

Tree Tab Options

When the Tree Tab Type is selected, you will also be required to select the Tree Layer and Tree Entry Mode. Tree Layer is the plot type (overstory, midstory, understory) that the tab is intended for. This is important for data categorization as it is processed and displayed in reports.

Tree Entry Mode has two options: Grid and Stacked. Grid form is the conventional grid layout on the mobile project. For organizations who use devices like phones with smaller screens, the Stacked mode can be chosen. Template tabs that have many columns may be too restricted by screen size so Stacked view is used to hide some columns in the grid view while allowing the user to open a form for each tree to enter more data.



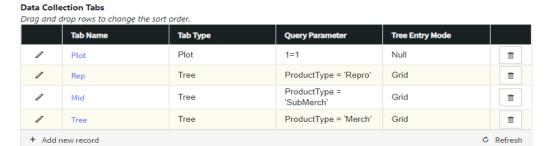
Grid Mode



Stacked Mode

Configuring Tabs

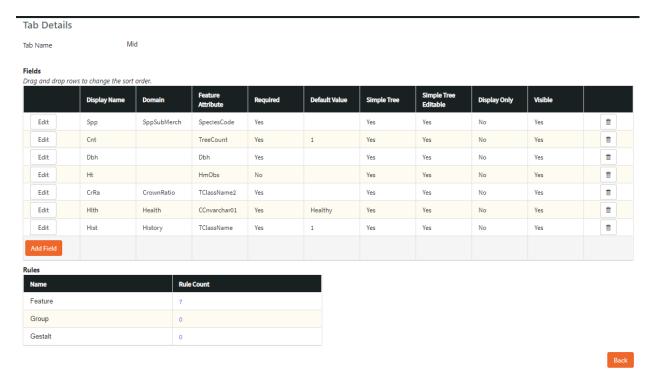
To configure a new tab or modify an existing one, click on the blue Tab Name to open the Tab Details page.



Data Collection Tabs Table

Tabs consist of fields (or columns in grids) that appear on the mobile project screen. Each field has attributes that must be applied. Click the orange Add Field button to add a new field or click the Edit button in a row to edit an existing field.

Drag and drop rows in the table to change their sorting order in SilvAssist Mobile. For tree tab grids, top to bottom corresponds as left to right on the grid. For Plot tab types it is the same top to bottom layout.



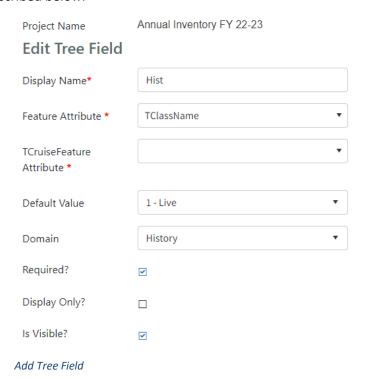
Tab Details Page

Spp	Cnt	Dbh	Ht	CrRa	Hlth	Hist
LP-Loblo	1	3.2	16	70-70%	Healthy-I	1-Live
LP-Loblo	1	2.1	16	70-70%	Healthy-I	1-Live
LP-Loblo	1	2.4	16	70-70%	Healthy-I	1-Live

Mid Tab Grid in SilvAssist Mobile

Adding or Modifying a Field

After clicking Add Field or Edit, you will be able to modify the field characteristics. These characteristics are described below.



Display Name and Feature Attribute

Display Name is the aliased name that will appear on SilvAssist Mobile. For tree grids this is the column header. These can be customized to your liking; however, they should be shorter abbreviations to avoid being cut off in the grid.

Feature Attribute is the column in the database that collected data is saved to. Since you should not collect different categories of data in the same attribute field, as items are selected from the Feature Attribute table, they are removed from being available for fields added in the future. Some fields such as StandId and PlotId are permanent fields in the database so there are no options to set their Feature Attribute.

Fields that begin with CC are custom columns that can be used for any data attribute you would like to collect. Their descriptions are below:

CCnvarchar – These are text (string) fields

CCnumeric – This is a numeric (float) field. This attribute type would accept decimal numbers. CCint – This is an integer (int) field. This attribute type accepts only whole integer numbers. CCbit – CCbit fields are true/false fields that use the binary system of 0/1 for false/true, respectively. CCdatetime – These fields are for collecting date/time data.

TCruise Feature Attribute

If Export to TCruise is enabled at the organization level, this field is used to map custom columns to the export file. Previously used columns will be filtered out of the dropdown.

Default Value

This is the default value that will appear when a new tree record is added in the grid. When you have a domain selected, only those values in the domain are available to use as a default value. For example, Tree Product is usually defaulted as "AA" for AutoAssign.

Domain

Domain is a list of domains you have previously set up in your Project. By selecting a domain from the dropdown menu, this will provide a pick list on the mobile device for the cruiser to choose from. As mentioned previously, the Default Value can only be a record from the domain.

Required

Checking "Required" makes this field a required data point for collection in the field. For example, each tree record must have a Dbh recorded so this field is checked on as required. The user would not be able to save the plot without entering the missing value. This is a built-in error check for SilvAssist Mobile so it does not need to be configured separately like other error checks.

Display Only

Check "Display Only" to disable editing for a field. This is used to have a field present for reference by the field user but will not allow them to change the value. For example, plot size would be shown as a reference in the Plot tab but would not be editable by the user.

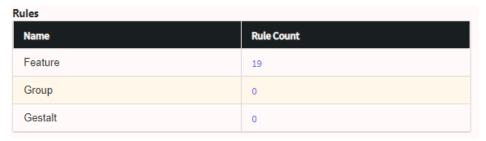
Is Visible?

"Is Visible?" is checked on by default. This determines whether this field will appear on the screen for SilvAssist Mobile users. This is helpful if you have a copied project template but do not need to show all fields for data collection. Rather than deleting from the template, you can simply hide the field from view.

When you have completed configuration, click the orange Save button to be returned to the Tab Details page.

Rules

Rules are the error checks that occur in SilvAssist Mobile when the user taps Save on a plot. There are three styles of rules that are incorporated in SilvAssist.

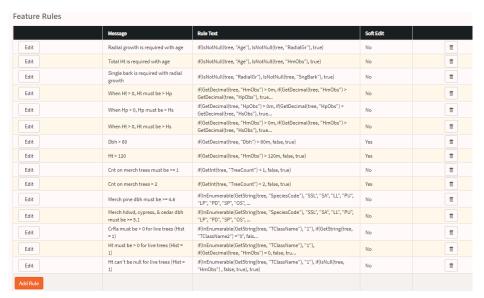


Rules

<u>Feature</u> – Most error checks will be at the feature level. Feature rules are error checks that check business rules for individual tree records. For example, a hard error check for Dbh must be greater than or equal to 4.6" for merchantable overstory trees or a soft error check for height > 120'
<u>Group</u>- Group rules check for conditions on a tab across trees. A typical example of this is "One total height per species is required" where it checks trees across species and ensures that at least one tree record for each species has a total height recorded.

<u>Gestalt</u> – Gestalt rules check for conditions between tabs. For example, a project may have had age subsamples randomly assigned across stands. These plots would be designated as such in one of the database columns e.g. CCbit01 with a value of 1 representing the age plot designation. This age requirement field could be placed on the Plot tab to show the cruiser that an age should be taken on this plot. The gestalt error check would then check the following condition: where CCBit01 on Plot is 1, require a record in at least one Age column for a tree record. If this condition was not met, the user could be presented with a soft error check reminding them that an Age is required at this plot.

The Rule Count shown is the total number of rules in that rule type. Click on the blue number to view the rules.



Feature Rules

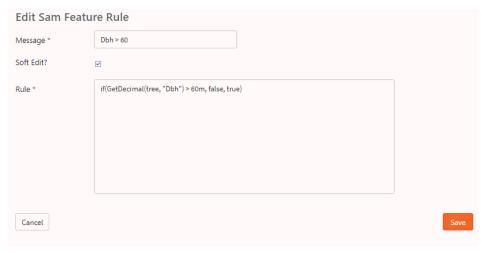
The Rules table consists of three columns:

Message - The message that is displayed to the user on SilvAssist Mobile as a popup window.

Rule Text – The logic syntax that forms the rule

Soft Edit – Determines if a rule is a soft edit.

To add a new rule, click the orange Add Rule button. To edit an existing rule, click the Edit button next to that rule.



Edit Rule

It is best to use abbreviations and keep the message shorter to optimize display on SilvAssist Mobile.

The Rule Text is the Boolean logic syntax that checks the data and determines its validity. The table below provides some examples of error checks and how they may be used. Contact F4 Tech for assistance implementing more complex rules.

Rule Syntax	Message	Error Description	Soft Edit?
if(GetInt(tree, "TreeCount") = 0, false, true)	Tree cnt must be >=1	Tree count cannot be 0 or blank	No
if(GetInt(tree, "TreeCount") > 50, false, true)	Repro cnt > 50	Warning that count is greater than 50	Yes
if(GetDecimal(tree, "Dbh") < 0.1m, false, true)	Submerch Dbh must be >=0.1	Tree Dbh must be greater than or equal to 0.1"	No
if(GetFloat(tree, "HmObs") < 4.5, false, true)	Submerch Ht must be >=4.5	Tree Ht must be greater than or equal to 4.5 ft.	No
if(GetFloat(tree, "HmObs") > 50, false, true)	Submerch Ht >50	Ht cannot be greater than 50 ft.	No
if(InEnumerable(GetString(tree, "SpeciesCode"), "SSL", "SA", "LL", "PU", "LP", "PD", "SP", "OS", "SR"), if(GetFloat(tree, "Dbh") > 4.5, false, true), true)	Submerch pine dbh must be <=4.5	Trees on Mid plot with Pine species code must have Dbh be less than or equal to 4.5"	No
if(InEnumerable(GetString(tree, "SpeciesCode"), "SSL", "SA", "LL", "PU", "LP", "PD", "SP", "OS", "SR"), true, if(GetFloat(tree, "Dbh") > 5.0, false,	Submerch hdwd, cypress, and cedar dbh must be <=5.0	Trees on Mid plot with Hardwood, Cypress, and Cedar species code must have Dbh be less than or equal to 5.0"	No
if(IsNotNull(tree, "Age"), IsNotNull(tree, "RadialGr"), true)	Radial growth is required with age	Radial Growth measurement is required when Age is recorded	No
if(IsNotNull(tree, "Age"), IsNotNull(tree, "HmObs"), true)	Total Ht is required with age	Total height measurement is required when Age is recorded	No
if(IsNotNull(tree, "RadialGr"), IsNotNull(tree, "SngBark"), true)	Single bark is required with radial growth	Single bark thickness measurement is required when radial grown is recorded	No
if(GetDecimal(tree, "HmObs") > 0m, if(GetDecimal(tree, "HmObs") > GetDecimal(tree, "HpObs"), true, false), true)	When Ht>0, Ht must be >Hp	When total height is greater than zero, that value must be greater than pulpwood height	No
if(GetDecimal(tree, "HpObs") > 0m, if(GetDecimal(tree, "HpObs") > GetDecimal(tree, "HsObs"), true, false), true)	When Hp>0, Hp must be > Hs	When pulpwood height is greater than zero, that value must be greater than sawtimber height	No
<pre>if(GetDecimal(tree, "HmObs") > 0m, if(GetDecimal(tree, "HmObs") > GetDecimal(tree, "HsObs"), true, false), true)</pre>	When Ht>0, Ht must be >Hs	When total height is greater than zero, that value must be greater than sawtimber height	No
if(GetDecimal(tree, "Dbh") > 60m, false, true)	Dbh >60	Warning that Dbh is greater than 60"	Yes
if(GetDecimal(tree, "HmObs") > 120m, false, true)	Ht >120	Warning that total height is greater than 120 ft.	Yes
if(GetInt(tree, "TreeCount") < 1, false, true)	Cnt on merch trees must be >=1	Tree count cannot be 0 or blank	No
if(GetInt(tree, "TreeCount") > 2, false, true)	Cnt on merch trees >2	Warning that tree count is greater than 2	Yes
if(InEnumerable(GetString(tree, "SpeciesCode"), "SSL", "SA", "LL", "PU", "LP", "PD", "SP", "OS", "SR"), if(GetDecimal(tree, "Dbh") < 4.6m, false,	Merch pine dbh must be >=4.6	Trees on Tree plot with Pine species code must have Dbh be greater than or equal to 4.6"	No

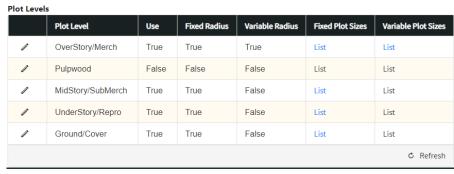
		,	
if(InEnumerable(GetString(tree, "SpeciesCode"), "SSL", "SA", "LL", "PU", "LP", "PD", "SP", "OS", "SR"), true, if(GetDecimal(tree, "Dbh") < 5.1m, false, true))	Merch hdwd, cypress, & cedar dbh must be >=5.1	Trees on Tree plot with Hardwood, Cypress, and Cedar species code must have Dbh be greater than or equal to 5.1"	No
<pre>if(InEnumerable(GetString(tree, "TClassName"), "1"), if(GetString(tree, "TClassName2") ="0",</pre>	CrRa must be > 0 for live trees (Hist=1)	Crown ratio field cannot be left blank	No
<pre>if(InEnumerable(GetString(tree, "TClassName"), "1"), if(GetDecimal(tree, "HmObs") < 16, false,</pre>	Ht must be >16 for live trees (Hist=1)	Total height is required on all live trees	No
if(InEnumerable(GetString(tree, "TClassName"), "1"), if(IsNull(tree, "HmObs"), false, true), true)	Ht can't be null for live trees (Hist=1)	Total height is required on all live trees	No
if(InEnumerable(GetString(tree, "SpeciesCode"),	When Hs>0, Hs must be >=16 for SW	Merch. Sawtimber height must be greater than or equal to 16 ft.	No
if(InEnumerable(GetString(tree, "ProductCode"), "AA", "PW"), if(GetDecimal(tree, "HpObs") > 0m, if(GetDecimal(tree, "HpObs") < 16m, false, true), true), true)	When Hp>0, Hp must be >=16 for PW & AA	Merch. Pulpwood height must be greater than or equal to 16 ft.	No
<pre>if(InEnumerable(GetString(tree, "SpeciesCode"),</pre>	When Hs>0, Hs must be >=24 for CNS	Merch. CNS height must be greater than or equal to 24 ft.	No
if(GetDecimal(tree, "Dbh") > 0m, if(GetDecimal(tree, "Dbh") > 4.5m, true, false), true)	If dbh>0, dbh must be >=4.6	If Dbh is provided for an off plot tree, it must be greater than or equal to 4.6"	No
if(GetDecimal(tree, "StumpHt") = 0m, false, true)	StumpHt must be >0	Stump height cannot equal 0"	No
if(GetDecimal(tree, "HmObs") > 0m, if(GetDecimal(tree, "HmObs") > 15.9m, true, false), true)	If Ht>0, Ht must be >=16	If Ht is provided for an off plot tree, it must be greater than or equal to 16 ft.	No
<pre>if(GetDecimal(tree, "Dbh") > 0m, if(GetDecimal(tree, "StumpD") > GetDecimal(tree, "Dbh"), true, false), true)</pre>	If Dbh>0, StmpD must be greater than Dbh	If Dbh is provided for an off plot tree, it cannot be greater than the stump diameter	No
<pre>if(GetDecimal(tree, "HmObs") > 0m, if(GetDecimal(tree, "StumpHt") < GetDecimal(tree, "HmObs"), true, false), true)</pre>	If Ht>0, Ht must be greater than Stmp Ht	If Ht is provided for an off plot tree, it must be greater than the stump height	No
if(GetDecimal(tree, "StumpHt") > 4.4m, false, true)	StmpHt must be <4.5	Stump height must be less than 4.5 ft.	No
<pre>if(GetDecimal(tree, "Dbh") > 0m, if(GetDecimal(tree, "OffPlot") = 1, true, false),</pre>	If Dbh>0, Offplot must be true	If Dbh is provided for an off plot tree, Op must be set to 1- True	No
<pre>if(GetDecimal(tree, "HmObs") > 0m, if(GetDecimal(tree, "OffPlot") = 1, true, false),</pre>	If Ht>0 Offplot must be true	If Ht is provided for an off plot tree, Op must be set to 1-True	No
if(GetDecimal(tree, "StumpD") = 0m, false, true)	StumpD must be >0	Stump diameter must be greater than 0"	No

if(IsNull(tree, "Dbh"), if(GetDecimal(tree, "OffPlot") = 0, true, false), true)	Offplot Dbh cannot be null	If Op is set as 1-True, Dbh cannot be left blank	No
if(IsNull(tree, "HmObs"), if(GetDecimal(tree, "OffPlot") = 0, true, false), true)	Offplot Ht cannot be null	If Op is set as 1-True, Ht cannot be left blank	No

Sample Error Check Rules

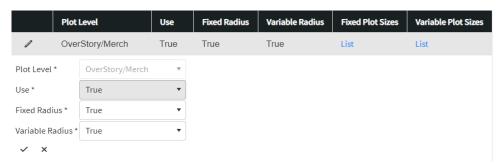
11.5.3 Configure Available Plot Levels and Sizes

Configurations in this table determine which plot levels (types) and sizes are available for use in the Plot Allocator. The five available plot layers are: Overstory/Merch, Pulpwood, Midstory/Submerch, Understory/Repro, and Ground Cover. Each of these levels can be turned on or off depending on which types of plot data you are collecting in a particular project. These levels can include either or both fixed and variable radius plot sizes. **Note**: This configuration only pertains to the Plot Allocator in the Edit Map. Plot sizes could still be modified in a direct data connection or in SilvAssist Mobile if configured properly.



Plot Levels Table

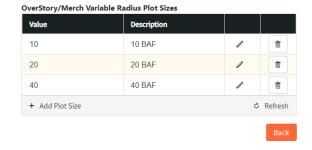
Click the Pencil edit icon next to the plot level you wish to edit. Setting a value to True enables that item. For example, if Use is True, then that plot level will appear as an option in the Allocation Parameter window. Setting Fixed or Variable radius options to True will populate that option in the allocator. One of these options must be set to True.



Editing Plot Level Settings

Editing Plot Size lists is similar to editing Domains (section 11.3.6). Click the List link in the plot level you wish to edit and input the values you wish to see in the Allocator. Value is the record that is input into the database and used for calculations and displayed to the user in SilvAssist Mobile. Description is the value that is displayed to the user in the Allocation Parameters window. **Note**: Fixed radius plot sizes must have a Value of 1 or less and is your plot radius expressed in decimal form. For example, $1/20^{\text{th}}$ acre is input as 0.05. Variable radius values must have a whole number value greater than 1.





Fixed Radius Plot Size

Variable Radius Plot Size