Instruction Manual
for SilvAssist
For ArcGIS

Version 3.0
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Introduction

In this instruction manual, we will be working from several assumptions and users should have an understanding of ESRI Geodatabase (GDB) management.

**Note: THE TOOL DOES NOT OPERATE WITH SHAPE FILES, so users should load their shape files into ESRI personal Geodatabase.

For Tools to Work Correctly there are several items that users should be aware of:

1. Features involved in area calculations or grid allocation plots are projected, e.g. units are in feet or meters not decimal degrees.

2. Inventory data is processed in TCruise and output using the LandMark Export DLL. This output format is an Access database. One can still use the allocator without having TCruise, but all reporting is dependent on data from TCruise.

3. If there are too many layers in the map, or layers with various projection systems, you may get errors. It is best to use a new map (mxd) with only the layers being used in analysis and without aliases for the layer names.

4. If you are in an edit session, any changes must be saved before you use the SilvAssist 3.0 Tools.

A demo geodatabase for training purposes is installed with SilvAssist. A geodatabase template is also available. They can be found on your computer at this location: C:\Program Files\F4 Tech\SilvAssist\GeoDatabases.

Additionally, this manual is for Version 3.0 as shown on the toolbar in ArcMap. If there are issues with your install, please contact your Authorized F4 Tech Business Partner.

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Preparing to Use SilvAssist

To utilize the SilvAssist Toolbar:

1. Open ArcGIS and right click on the toolbars.

2. The toolbar list will open (image at left) 
   Click on SilvAssist 3.0 to select

3. You should now see the SilvAssist 3.0 toolbar available. It will look like this

4. Now add stands and plots features from a geodatabase with the appropriate format. An example database can be found here:
   C:\ProgramFiles\F4 Tech\SilvAssist\GeoDatabases\Demo\SilvAssist_Test_Data

Polygon Selection

Many of the tools can be run on either a group of selected polygons or all polygons in a group. For example we can allocate Plots in a selected Stand(s) or we can allocate plots to all stands in the feature class

Polygons can be selected using the Select Tool and selecting the polygons by left clicking. To choose multiple polygons, use the select tool and hold the Ctrl and Shift keys as you left click on the polygons. (Selected plots example seen at left)
**Plot Allocator**

The plot allocator is used to generate plots. It has many customizable options including grid allocation and random plot selection. This section will cover those options.

**Requirements:**

A Polygon Layer (Stands) and Point Layer (Plots) with correct schema (can create if not present)

**Note: The demo dataset contains a Plots layer with the necessary fields. It can be found on your computer at this location:**
C:\Program Files\F4 Tech\SilvAssist\GeoDatabases\Demo

1. If you would like to allocate plots to a selected set of stands you should select those stands now.

**Operation**

2. Begin by clicking the Plot Allocator button in the SilvAssist 3.0 toolbar.
3. Choose the stand layer that contains the polygon you wish to use for grid generation. This can be found under “Select Polygon Layer”.

4. If you are generating a grid for selected polygons, check the option for “Use Selected Features” and then select “Next >>”.

5. Next, choose which point layer plots will be written to. A plot layer can also be created if one does not exist.

6. Choose a starting Plot ID. The allocator will designate a starting plot ID if plot layer has existing records. A field in the polygon can also be referenced for a starting plot ID. Plot ID’s must be unique.

7. Finally choose a numbering format for the allocated plots. (Examples of the numbering types can be seen left)

8. Click Next to Advance.
**Grid Type**

SilvAssist offers four (4) grid generation options:

- Auto
- Custom
- Simple
- Random

**Note:** The descriptions for each method are described in the “help” box. (You may see this by hitting the “Show Help >>” button).

Descriptions for each Grid Type will follow in this document.

**Auto Grid Type**

The purpose of the Auto Grid Generator is to quickly generate a predetermined number of plots. This method should be used for polygons where the number of desired plots is known.

1. Select the Auto option from the dropdown list named “Choose Grid Type”.

2. The number of plots can be read from a field in the polygon layer, or entered manually. To enter manually click the radio button called “Enter in # of Plots per Polygon”.

3. Next enter a ratio which will determine the spacing of plots and lines. A ratio of 1 will result in a square grid. A ratio >1 will result in a rectangle.

4. Click Next to Proceed
Now other options can be applied to further customize the Auto grid before it is run.

**Buffer**

5. SilvAssist allows the user to enter a buffer, if desired. This pushes plots away from polygon perimeters. If no buffer is desired simply leave the value at 0.

**Warning:** The use of a Buffer will introduce bias into the sample. Buffering from stand boundaries can reduce sampling in transition zones.

**Grid Azimuth**

6. The user has the option of assigning Azimuth to the grid at this point.
   a. If the user selects “None” then there will be a default Azimuth of 0°.
   b. If the user selects “Run Plots on Long axis of Polygon” the Azimuth will be determined by ArcMap as the axis between the two furthest points in the polygon.
   c. If the user selects “Enter Azimuth (0 to 360 degrees)” a value between 0 and 360 must be entered. This will be the azimuth assigned to all lines in the allocation grid.
   d. If the user selects “Select Field from a Polygon Layer” a value must be selected from the drop down that will appear. The value in this field must be numeric and between 0 and 360 and each stand can have a potentially different azimuth.
Spatial Overlay:
This option is used to push attributes from polygons into the points (plots) being allocated. The most common use is to push StandID values from Stands to Plots. Pushing StandID values is important for the reporting and relating data.

7. To use Spatial Overlay you will need to check the box titled “Disable Quick Plot Allocation Re-Run”. This means the plot Re-Run function will not be available after the initial run.

**NOTE: This functionality is also available as a stand-alone tool;**

8. Select values from the “From Polygon” drop down box to determine which value is pushed from the polygon.

9. Select values from the “To Point” drop down box to determine which field in the point feature the polygon value will be saved to.

10. Click Run to complete the allocation.

11. The final screen will allow you to review your allocation. If you don’t like the placement of points you can select “Re-Run Selected” to generate a new grid with a new random start point.
The result of the Auto grid type can be seen here (left). Each stand regardless of size receives the same number of plots (30 in this case). Also notice that each stand is allocated on an East-West orientation due to a choice of “None” in the Azimuth settings.

Custom Grid Type

The purpose of a Custom Grid is to generate a stand allocation based on spacing. This option should be used where the desired number of plots per polygon is unknown but the desired spacing per polygon is known.

1. Select the Custom option from the dropdown list named “Choose Grid Type”.

2. Select your units of measure from the dropdown list under “Choose Grid Units”.

3. The next set of options is found under “Choose Grid Preferences”.
   a. If you want to designate plot spacing then you should select the radio button next to “Enter Along Lines” and enter the spacing in the available fields
b. If you want plot spacing to be designated by a field in the stands feature you should select the radio button next to “Select Fields with Ratios” and select the correct fields from the available drop downs.

Now other options can be applied to further customize the Auto grid before it is run

**Buffer**
4. SilvAssist allows the user to enter a buffer, if desired. This pushes plots away from polygon perimeters. If no buffer is desired simply leave the value at 0.

**Warning:** The use of a Buffer will introduce bias into the sample. Buffering from stand boundaries can reduce sampling in transition zones.

**Grid Azimuth**
5. The user has the option of assigning Azimuth to the grid at this point.
   a. If the user selects “None” then there will be a default Azimuth of 0°.
   b. If the user selects “Run Plots on Long axis of Polygon” the Azimuth will be determined by ArcMap as the axis between the two furthest points in the polygon.
c. If the user selects “Enter Azimuth (0 to 360 degrees)” a value between 0 and 360 must be entered. This will be the azimuth assigned to all lines in the allocation grid.
d. If the user selects “Select Field from a Polygon Layer” a value must be selected from the drop down that will appear. The value in this field must be numeric and between 0 and 360 and each stand can have a potentially different azimuth.

**Spatial Overlay:**
This option is used to push attributes from polygons into the points (plots) being allocated. The most common use is to push StandID values from Stands to Plots. Pushing StandID values is important for the reporting and relating data.

6. To use Spatial Overlay you will need to check the box titled “Disable Quick Plot Allocation Re-Run”. This means the plot Re-Run function will not be available after the initial run.

**NOTE:** This functionality is also available as a stand-alone tool;

7. Select values from the “From Polygon” drop down box to determine which value is pushed from the polygon.

8. Select values from the “To Point” drop down box to determine which field in the point feature the polygon value will be saved to.

9. Click Run to complete the allocation.
10. The final screen will allow you to review your allocation. If you don’t like the placement of points you can select “Re-Run Selected” to generate a new grid with a new random start point.

The result of the Custom grid type can be seen here (left). Unlike the Auto grid each stand is allocated plots at a specific spacing instead of a set number per stand. This results in an even spacing with a new random start point for each stand. Each stand has a different number of plots allocated dependent on area.
Simple Grid Type
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 don’t 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.

1. Select the Custom option from the dropdown list named “Choose Grid Type”.

2. Select your units of measure from the dropdown list under “Choose Grid Units”.

3. The next set of options is found under “Choose Grid Preferences”.
   a. If you want to designate plot spacing then you should select the radio button next to “Enter Along Lines” and enter the spacing in the available fields
   b. If you want plot spacing to be designated by a field in the stands feature you should select the radio button next to “Select Fields with Ratios” and select the correct fields from the available drop downs.

4. Click Next to proceed
**Note: It may be faster to allocate using compartment or property boundaries than using the Simple allocation across a great many stands.

Now other options can be applied to further customize the Auto grid before it is run.

**Buffer**

5. When allocating a Simple grid type the user cannot enter a buffer distance. This means the option will be inactive.

**Grid Azimuth**

6. The user has the option of assigning Azimuth to the grid at this point.
   e. If the user selects “None” then there will be a default Azimuth of 0°.
   f. If the user selects “Run Plots on Long axis of Polygon” the Azimuth will be determined by ArcMap as the axis between the two furthest points in the polygon.
   g. If the user selects “Enter Azimuth (0 to 360 degrees)” a value between 0 and 360 must be entered. This will be the azimuth assigned to all lines in the allocation grid.
   h. If the user selects “Select Field from a Polygon Layer” a value must be selected from the drop down that will appear. The value in this field must be numeric and between 0 and 360 and each stand can have a potentially different azimuth.
Spatial Overlay:
This option is used to push attributes from polygons into the points (plots) being allocated. The most common use is to push StandID values from Stands to Plots. Pushing StandID values is important for the reporting and relating data.

7. To use Spatial Overlay you will need to check the box titled “Disable Quick Plot Allocation Re-Run”. This means the plot Re-Run function will not be available after the initial run.

**NOTE:** This functionality is also available as a stand-alone tool;

8. Select values from the “From Polygon” drop down box to determine which value is pushed from the polygon.

9. Select values from the “To Point” drop down box to determine which field in the point feature the polygon value will be saved to.

10. Click Run to complete the allocation.

11. The final screen will allow you to review your allocation. If you don’t like the placement of points you can select “Re-Run Selected” to generate a new grid with a new random start point.
The result of the Simple grid type can be seen here (left). Unlike the Auto grid plots are allocated at a specific spacing instead of a set number per stand. Unlike the Custom grid the distribution is uniform across all selected stands instead of having a new random start point in each polygon (stand). Each stand has a different number of plots allocated dependent on area and shape of the polygon.

**Random Grid Type**

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.

1. Select the Custom option from the dropdown list named “Choose Grid Type”.

2. You can select from two options to determine the number of plots in each stand.
   a. The first option is to read values from a Field in the polygon layer.
   b. The second option is to enter a number of points to be allocated to each selected stand
Now other options can be applied to further customize the Auto grid before it is run.

**Buffer**

3. SilvAssist allows the user to enter a buffer, if desired. This pushes plots away from polygon perimeters. If no buffer is desired simply leave the value at 0.

**Warning**: The use of a Buffer will introduce bias into the sample. Buffering from stand boundaries can reduce sampling in transition zones.

**Grid Azimuth**

4. The user has the option of assigning Azimuth to the grid at this point.
   a. If the user selects “None” then there will be a default Azimuth of 0°.
   b. If the user selects “Run Plots on Long axis of Polygon” the Azimuth will be determined by ArcMap as the axis between the two furthest points in the polygon.
   c. If the user selects “Enter Azimuth (0 to 360 degrees)” a value between 0 and 360 must be entered. This will be the azimuth assigned to all lines in the allocation grid.
   d. If the user selects “Select Field from a Polygon Layer” a value must be selected from the drop down that will appear. The value in this field must be numeric and between 0 and 360 and each stand can have a potentially different azimuth.
Spatial Overlay:
This option is used to push attributes from polygons into the points (plots) being allocated. The most common use is to push StandID values from Stands to Plots. Pushing StandID values is important for the reporting and relating data.

5. To use Spatial Overlay you will need to check the box titled “Disable Quick Plot Allocation Re-Run”. This means the plot Re-Run function will not be available after the initial run.

**NOTE: This functionality is also available as a stand-alone tool;**

6. Select values from the “From Polygon” drop down box to determine which value is pushed from the polygon.

7. Select values from the “To Point” drop down box to determine which field in the point feature the polygon value will be saved to.

8. Click Run to complete the allocation.

9. The final screen will allow you to review your allocation. If you don’t like the placement of points you can select “Re-Run Selected” to generate a new grid with a new random start point.
The result of the Random Grid can be seen here (left). Each stand has received 30 plots which were randomly placed. You can see that in some stands distribution is more even but in other there is significant clumping.
Spatial Overlay

The Spatial Overlay tool transfers polygon (stand) attributes fields to point (plots) attribute fields. This should be done if changes were made to the polygon such as a split or a boundary change. It is especially important to run an overlay if your polygon IDs (such as stand ID) have been changed. The overlay tool maintains the database relationships that allow SilvAssist to relate the correct stands to plots and trees. The overlay check boxes in Reporting and Analytics and GnY Utility should be checked if any spatial or attribute changes have been made to polygon features.

1. Begin by clicking the Spatial Overlay button in the SilvAssist 3.0 toolbar.

2. Select the polygon feature from the “From Polygon layer” dropdown box.

3. Select an origin field within the selected polygon feature. This will be the data that will be pushed to the Point (Plots) feature.
4. Select the point feature from the “To Point Layer” dropdown box.

5. Select the destination field within the selected point feature. This is where the overlay data will be stored.

6. If the Spatial Overlay is to be restricted to selected plots then the “Use Selected Features” checkbox.

7. Click the “Set Items” button to move the selected values to the list window at the bottom of the form.

8. If there are additional values to overlay repeat Steps 3 through 7 until all values appear in the list window at the bottom of the form.

9. Click Run to overlay the selected values.
**Waypoint Converter**

The Waypoint Converter converts point features created by the Plot Allocator into a waypoint file compatible with Trimble Forestry Automation’s SOLO Forest and SOLO Field. The waypoint file is required in the LandMark Systems patented RTI tool when using SOLO Forest or SOLO Field.

**Note:** Before running this utility, make sure your point layer has a PLOTID Field. StandID and Cruiser Fields are optional.

1. Begin by clicking the Waypoint Converter button in the SilvAssist 3.0 toolbar.

2. Select the Points layer to be converted by selecting the points feature (Plots) from the “Set Point Layer” dropdown box.

3. If you would like to convert only Plots which were spatially selected click the “Use Selected Features” checkbox. The number of selected features will be displayed.
4. Select the location and name of the waypoint file that is to be generated by clicking on the folder icon, browsing to a location and assigning a name.

5. Click Run to generate the Waypoint file.
**Plot Loader**

The plot loader is used to bring forest inventory data from the field into your geodatabase. This allows data to be centrally located as well as correctly related so the user can use other tools in the SilvAssist toolbox. This section will cover its use and options.

**Note:** this tool sets up table relationships between spatial and tabular data so that reports and statistics produced from the toolbar will work. Data must be loaded using this tool for the other toolbar functions to work.

**Requirements**

A Polygon Layer (Stands) and Point Layer (Plots) with allocated plots (A new point layer can be created if coordinates are present in the LandMark Export Plot table.

A LandMark Export from TCruise. (For more information regarding the LandMarkExportRNF.dll for TCruise, please contact your local LandMark Systems Business Partner.)

**Note:** If inventory data has not previously been loaded in the geodatabase and a plot and tree table (tabular) does not exist, they will be created by the application in the correct format.

**Note:**

**Operation**

1. Begin by clicking the Plot Allocator button in the SilvAssist 3.0 toolbar.
2. First, start by selecting a Plots Layer from the drop down menu. Any point feature class in the ArcMap document will be available.

3. Next select a Stands Layer from the drop down menu. Any feature class in the ArcMap document will be available.

4. You will now need to select one or more LandMark Export databases that contain the inventory data. You may select a LandMark Export in two ways:
   a. Click the browse button and navigate to the file location the click Add.
   b. Drag and Drop the LandMark export from an open window into the LandMark Export Database(s) list box.
   c. If you add the wrong file simply highlight that selection and click Remove.

5. Finally you can choose to activate some Load Options
   a. Click the “Overwrite Existing Data” box to replace previously loaded data with new data
   b. Click the “Load Grade Table” box to load and use the TreeGrdVol table from the LandMark Export. This is only used when tree grading is employed. **Note: TreeGrdVol is an optional table generated in TCruise
c. If multiple loads could occur there is the option to include a load tag in the “LoadName Text” text box. This can be any string of characters that identifies the batch of data.

6. After all settings are correct, click on Run. A status window will be displayed while the run is processing and a success window will pop up when the load is complete. The status window will show you a count of the Plot and Tree records that were read, loaded and rejected.

7. Any errors in the data to be loaded (i.e. duplicate plot id’s, plots missing plot id’s, plots missing lat./long.), a message box will pop up indicating that there are errors and you will be prompted for a location to save the error log (text file). Open this error log for a list of errors that must be corrected before data can be loaded successfully.

**Note: Loaded plots (spatial) are flagged with a “Y” in the “Active” field. This is used to indicate to reporting tools that the Plots should be included. This “Y” value in the “Active” field is necessary for the reports to function properly.

8. To delete data that has previously been loaded use the Delete Inventory option
9. Select how the data should be deleted. There are three options:
   a. Choosing to delete by PlotID will delete data from individual plots that are selected
   b. Choosing to delete by Selected Plot Features will delete plot information contained in any Plots that are selected beforehand
   c. Choosing to delete by load name will allow you to delete data according to the “LoadName Text” that was entered during the load process

10. Once a delete method is selected, the groups that are available for delete will be listed in the All Items column

11. Highlight any groups to be deleted and click the >> button. The selected group will be added to the Items to Delete column.

12. If you want to delete the spatial plots as well as the tabular plot data check the “Delete Plot Spatial Features”

13. When all Items to Delete and options are completed click the Delete button to proceed

14. Click Yes to confirm data deletion
Reports and Analytics

The Reports and Analytics Tool is used to generate reports on the data that has been loaded with the Plot Loader Tool. It has many customizable options including report type. This section will cover those options.

Requirements:

- A Polygon Layer (Stands)
- Point Layer (Plots)
- Loaded Inventory Data (Plot and Tree)

For the Reports and Analytics Tool to work properly, the inventory data must be in the correct format and loaded into the geodatabase with the Plot Loader. This ensures relationships between spatial data and calculated volume data is correctly established.

If changes are made to polygon boundaries, the Spatial Overlay Tool should be run before reports are generated.

**Note: The reporting and analytics tool only incorporates data which is flagged as active. This is done automatically by the plot loader and consists of a “Y” in the “Active” Field of the Plots feature.

Operation

Reports can be run on all polygons or on a selected group of stands. Selections must be made before running the Reports and Analytics Tool.
1. Select the Reporting and Analytics button on the SilvAssist Toolbar

2. Select the point layer that reports will be based on from the “Plots Layer” dropdown box in the Report Options area

3. Select the polygon layer that reports will be based on from the “Stands Layer” dropdown box in the Report Options area

4. Select the acres field in the chosen stands layer from the “Acres Field” dropdown in the Report Options area

5. Select the reporting field which reports should be created from. Stand ID is a common reporting field.
6. If multiple grouping fields are desired check the “Join Multiple Fields” box then click build. Repeat for each reporting field which will be listed in black.

7. If stands were selected at the start click the “Use Selected Stand Features” check box to limit reporting to this selection. The number of selected features will be displayed to the right.

8. Click the “Settings” button to open the Reports Setup menu.

9. There are three options for customizing your report in the Reports Setup menu (optional).
a. Click Company Information and you will see the Setup Company Information screen. Once this information is entered and saved it will be retained for future use of the Reporting and Analytic Tools

1. In this screen enter your organization's name, address and contact information

2. If your company has a logo browse to its location and you will see it displayed in the lower left corner

3. Click Save

b. Click Stumpage Value and you will see the Setup Stumpage Values screen.

1. Each Species group and product will be listed in the lower window

2. The active group name and product name will be displayed in the “Group Name” and “Product Name” windows

3. Enter the correct value in “Price” and select a unit of measure in “Unit”

4. Click Next Record to save and move to the next species and product
c. Click Groups to Classes and you will see the Setup Groups to Classes screen

1. Initially you will see no text in the “Current Classes” window. Enter a new class name such as Pine and click “add”. The class will move down to the window. Repeat with each class you would like to define

2. For each Group Name you will now need to assign one of the established classes from the dropdown boxes in the “ClassName” column. You can see that Pine has been selected for Longleaf Pine and Loblolly Pine groups.

3. When completed click Save then Exit

10. Select the type of report that you would like to produce. You have three options:

**Note:** Any report created from data with coded domain values (such as domains set up in Arc Catalog) will be reported using the input data not the coded results.

**Note:** The Excel Pivot Report will also be output to the geodatabase as a database table. Statistics reports will contain metadata in a separate Excel sheet.

**Note:** If you choose to view the data for all stands in the Excel Pivot Report, the report will sum the average per acre data, thus causing an incorrect report. Total volumes will report correctly.
a. Select Crystal Reports if you would like to produce a report using a premade Crystal Reports Template

1. You will be prompted to select one of the premade templates. Choose the option that contains your preferred grouping of values.

2. Click Run

3. Crystal Reports will be opened on your machine and you will be prompted to provide values. Enter a Report Title in the Discrete Values dropdown/textbox.

4. Click Next

5. Select the first Volume Unit that you would like to report on from the “Discrete Values” dropdown

6. Click Next
7. Select the second Volume Unit that you would like to report on from the “Discrete Values” dropdown

8. Click Next

9. If you want to see graphs choose “Yes” from the “Discrete Values” dropdown

10. Click Finish to generate your report.

b. Select Excel Pivot Reports if you would like to produce a stand and stock table that will be output to Excel

1. Under Display Options verify the Report Title and Report Image is appropriate. Changes can be made to the Report Title. Report Image must be changed from the Settings (click <<Back to change)

2. To include non-merchantable trees uncheck the box next to “Exclude Non-Merch” under Report Options

3. Click Run to output Stand & Stock Report to Excel
c. Select Statistics Report if you would like to produce a statistics report output to Excel

1. Select the field to base statistics on from the “Stat Field” dropdown

2. Select a unit of measure from the “Stat Unit” radio buttons.

3. Refine grouping by selecting any combo of the “Stat Sub Level” checkboxes

4. Select a Confidence Level % from the dropdown box

5. Enter an Allowable Error % from the dropdown box

6. The active default constraints are listed in the “Constraints List”. To remove an active default, highlight and click Remove.

7. To add additional constraints choose from dropdown
8. New constraints can be built using the Advanced button

9. Select a value field from the "Constraint" dropdown

10. Select a mathematical operation from the "Operator" dropdown

11. Enter a numeric value in the "Value" dropdown

12. Click Add

13. Click Run to generate a Statistics Report in Excel
**Growth and Yield**

The Growth and Yield Tool is used to convert data in the geodatabase to input data for the Forest Vegetation Simulator. It has many customizable options which this section will cover.

**Requirements:**

To operate correctly this tool requires a correctly formatted geodatabase containing a polygon layer (Stands) and related inventory database tables (Tree and Plot). The inventory data must be loaded with the Plot Loader Tool.

**Note:** This tool does not produce grown tree data. It produces an input shapefile that can be used with the Forest Vegetation Simulator. This is a free program and download files as well as documentation can be found here: http://www.fs.fed.us/fmsc/fvs/

**Operation:**

Growth and Yield can be run on all polygons or on a selected group of stands. Selections must be made before running the Growth and Yield Tool.
1. Select the Growth and Yield Utility button on the SilvAssist Toolbar

2. Select the points layer (Plots) from the dropdown list

3. Select the polygon layer (Stands) from the dropdown list

4. Select the grouping field from the “Project by” dropdown list
5. If you would like to create growth and yield input for a selected group of stands, check the “Use Selected Features” checkbox.

6. If you want to run an overlay check the “Run Spatial Overlay” checkbox. This must be run if any spatial changes have occurred to polygons.

7. Click Species Match to define species.

8. The Species Matching window will be displayed. Choose the regional variant that your data is located in from the “Choose Variant” dropdown.

9. For each species in the “Data” list do the following:
   a. Highlight the species name in the “Data” pane by left clicking it.
   b. Highlight the species name in the “FVS” pane that corresponds to the “Data” species by left clicking it.
   c. Click the “<><Match>>” button to relate the two. The two species names will be placed in the “Matches” pane.
Note: You can load existing or create new species match files from the file menu.

10. Select a Variant and National Forest by expanding the item lists and highlighting the name of the Forest.

11. Click the “Set” button and the values will be moved to the Variant and Forest data fields (grey boxes).

12. Click the folder icon and browse to the output location

13. Enter a project name in the “Name” textbox

14. Click Run
Events Management

The Events Management Tool streamlines the process of entering and maintaining event data. Events are physical actions that take place in a geographic area (stand) such as harvests, burns, site prep and inventory. This event data is related to spatial data through unique polygon IDs which can be leveraged to view events across the landscape.

Requirements:

To operate correctly this tool requires a correctly formatted geodatabase containing feature classes of any geometry (points, polylines, and/or polygons).

Event data will be stored in tables in the geodatabase and each event will have a separate table. There will be several required fields for each event table. The required fields for all events will be ID, Layer (spatial layer record is associated with), Event Type, Status, and Event Date.

**Note: Each event entry will be assigned an ID that is related back to the feature class. This ID is not a StandID because changes in the Stands attribute table could orphan records in event tables or incorrectly assign them to other polygon features. This ID is more like an Object ID and is internally managed.

**Note: Event tables will be created with a standard set of fields. These fields can be modified, and additional fields can be created using Arc Catalog. If you want your data to be validated you can also set up domains that will populate dropdown boxes

Operation:

Events Management must be run on a selected group of polygons, polylines or points or all features in the layer.
1. Select the Event Management button on the SilvAssist Toolbar

2. Select the layer that events will be recorded for from the dropdown box

3. Select the Area/Length/Measure field in the layer from the dropdown box

4. Select an ID that will be displayed to the user such as Stand ID for the dropdown box.
5. To create a new Event Table enter a name in the textbox and click the “Create” button.

6. All created event tables will be available in the “Event Type” dropdown. Select the layer where the event will be stored.

7. Click Add.

8. The Add New Event(s) window will open. Enter data in the open fields of the lower window (Event Type, Status and Event Date).

9. Click Save and the event will appear in the upper window.

10. If all events have been entered click “Exit”. If there are more click “<<Back”.

11. Click OK.
12. If one of the events in the selected stands needs to be edited click the “Edit” button.

13. Select from the available events that are listed.

14. Make edits in the lower fields. (Existing values will be visible)

15. Click Save

16. When all edits are completed you may exit the application or return to the main menu and produce a report. To return to the main menu and produce a report click the “Back” button
17. Reports can be created from all events or from events associated with selected stands. To report on only selected stands click the “Report Selected Features” checkbox. To report on all events leave the box unchecked. Click Report.

18. The Events Report interface will open. Click the checkbox next to each of the event types that you would like to report on.

19. If you want your event report in database table format click on “Geodatabase Table”. If you want your event report in an excel spreadsheet click on the “Excel”.

20. Enter a name for the output in the Table Name textbox if Geodatabase Table is selected.

21. Click Run

22. Click “Back” to go back to the main events form.
Customizing Events Tables

When event tables are created by the Event Data Management Tool, they will contain several default fields as follows: ID, Layer (spatial layer record is associated with), Event Type, Status, and Event Date. Arc Catalog can be used to create additional fields in the tables to track additional data about the event. Arc Catalog will also be used to create domains and assign the domains to fields in the tables. Domains can help validate data and will result in dropdown lists instead of test entry for field edits.

Adding New Fields

1. Open Arc Catalog and navigate to the location of your stored geodatabase.

2. Locate the Event Table that you would like to add fields to and right click the table name.

3. From the menu select the Properties option at the bottom of the list.

4. The Table Properties window will open. Select the Fields tab from the top of the window.
5. Enter your new field(s) under “Field Name” and choose a data type from the dropdown list under “Data Type”

6. In the Field Properties window select a Domain from the dropdown list if one is desired for the new field

7. Click “Apply” to save the additional field names

8. Click OK to exit the interface

Creating Field Domains

1. Open Arc Catalog and navigate to the location of your stored geodatabase

2. Locate your geodatabase and right click on the geodatabase name

3. From the menu select the Properties option at the bottom of the list

4. The Database Properties window will open. Select the Domains tab from the top of the window
5. Enter new domain(s) under the “Domain Name” column and a description under “Description”

6. In the Domain Properties window make sure the Field Type is Text and the Domain Type is Coded Values (like the image left)

7. In the Coded Values window enter coded values and their description (display value)

8. Click Apply to save domains

9. Click OK to exit the interface

10. To assign the domain to a field
    Navigate to the table in Arc Catalog

11. Right Click the table name and select Properties from the menu

12. Click the Fields tab at the top of the window

13. Click on the “Field Name” of the field that you would like to assign the domain to

14. Under Field Properties the options for the selected field will be displayed. Select one of the domains that has been created from the dropdown in the Domain option field
15. Click Apply to save the assigned domain

16. Click OK to exit the Table Properties window
3059 Highland Oaks Terrace
Tallahassee, FL  32301 info@thinkf4.com
850-385-3667
For additional Support options, tips or post a question: see our online community at
http://community.thinkf4.com/f4_tech

Or on the SilvAssist product page:
http://www.thinkf4.com/solutions/silvassist-20