

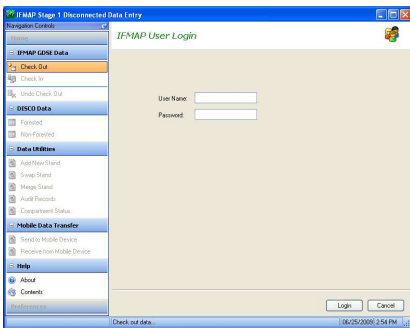
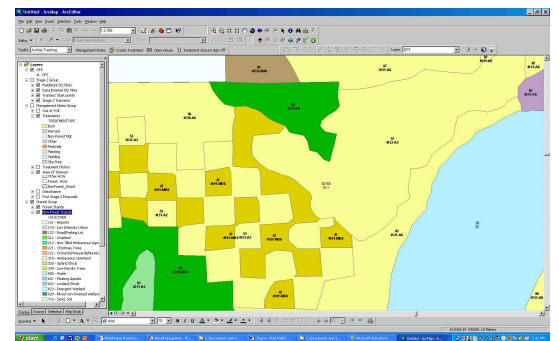
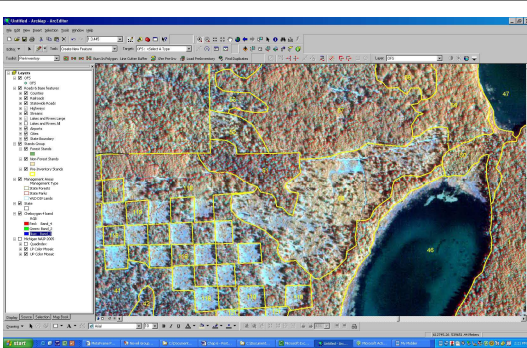
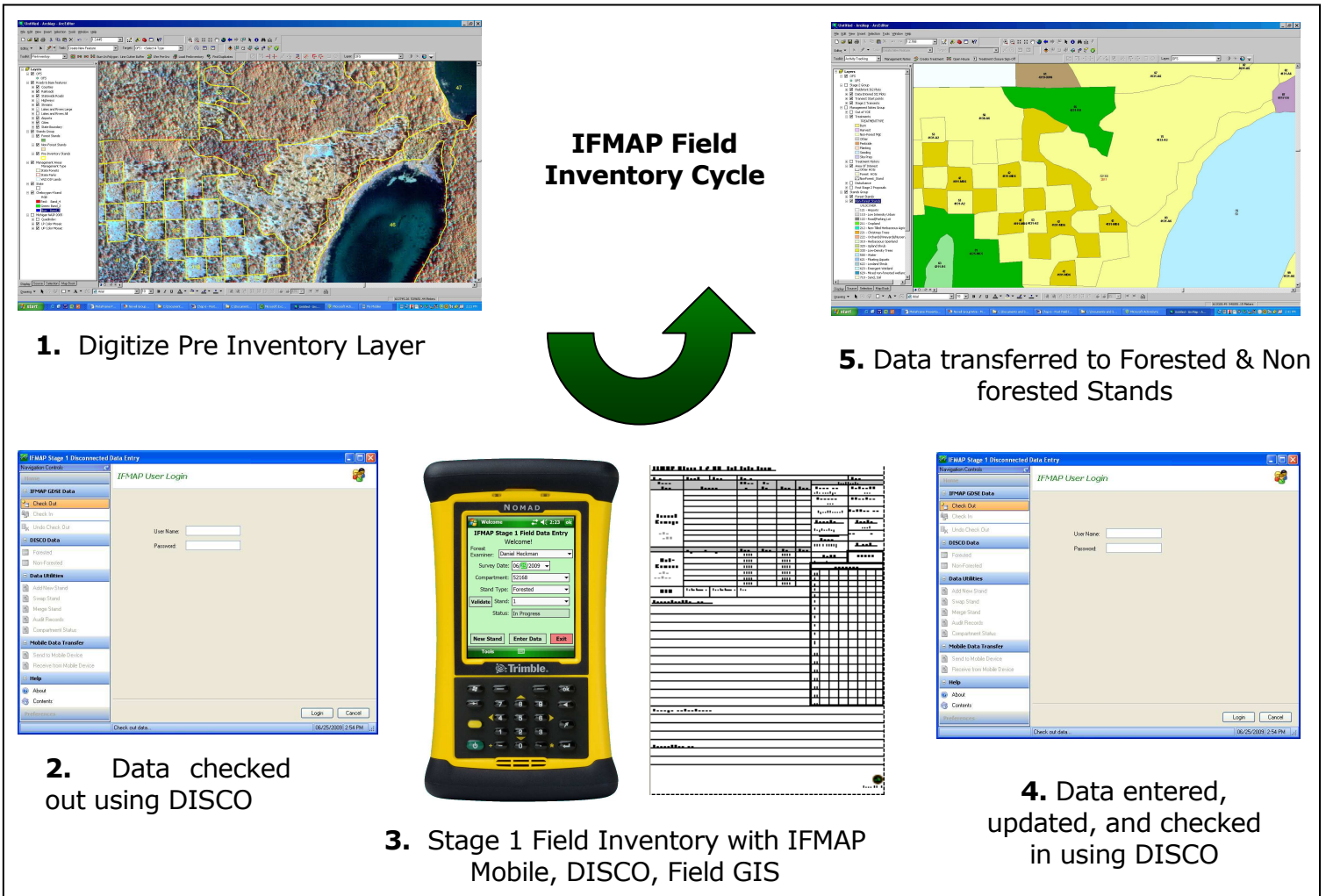
Chapter 7 – Field Inventory Edits and Stage 1 Data

Introduction

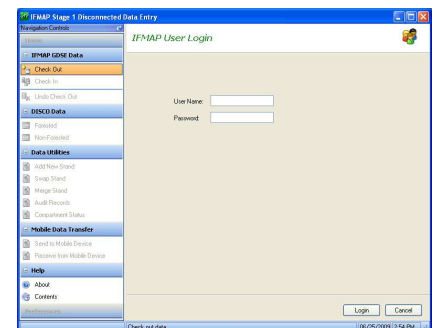
Once the stand examiner has their “DISCO data” checked in using the “Check In” tool in DISCO, there are a few tasks that need to be completed to populate the statewide Forested and Non-Forested Layer housed on the GDSE.

The “Check In” tool in DISCO has sent the data to the server in Lansing in tabular format. This data is housed there until the stand examiner is ready for the next step.

Each record in that table needs to have a shape to attach to, which are the stands you digitized in the Pre-Inventory Layer. The “Transfer Pre-Inventory Layer” is the tool that merges the DISCO data with the stands on the Pre-Inventory Layer, and creates a newly populated compartment in the Forested and Non-forested layers. It is important that we ensure that these two separate data sources can be easily merged and converted by first doing a little house keeping.



Stand	Area	Perimeter	Volume	Value	Area	Perimeter	Volume	Value
1000	1000	1000	1000	1000	1000	1000	1000	1000
1001	1001	1001	1001	1001	1001	1001	1001	1001
1002	1002	1002	1002	1002	1002	1002	1002	1002
1003	1003	1003	1003	1003	1003	1003	1003	1003
1004	1004	1004	1004	1004	1004	1004	1004	1004
1005	1005	1005	1005	1005	1005	1005	1005	1005
1006	1006	1006	1006	1006	1006	1006	1006	1006
1007	1007	1007	1007	1007	1007	1007	1007	1007
1008	1008	1008	1008	1008	1008	1008	1008	1008
1009	1009	1009	1009	1009	1009	1009	1009	1009
1010	1010	1010	1010	1010	1010	1010	1010	1010



This chapter is divided into 3 sections :

- Preparing to Transfer Pre-Inventory Data (using DISCO Audit Records)
- Populating Forested and Nonforested stand layers from the Pre-Inventory and DISCO data.
- Stage 1 Data Editing using the Stage 1 tools

Preparing to Transfer Pre-Inventory Data

The first task is to ensure that all stand boundary edits have been made to the Pre-Inventory layer based on the data collected in the field (DISCO Data).

Situations where data will need to be updated

If a **new stand** was created in either DISCO or MOBILE, it will obviously need a stand in the Pre-Inventory layer to be linked with.

Conversely, if a **stand was merged** in DISCO, the shape in the Pre-Inventory layer will also need to be merged into an adjacent stand.

If the edits to **stand boundaries** were only **adjustments** (no deleting or creating) then nothing has changed in the either data set, and no further steps are necessary in this sequence.

Edits to the **Pre-Inventory Layer attributes** must also be made if the Pre-Inventory Call of Forested or Non-Forested was changed (Swap stand), or the level 3 Non-forested call was modified (by doing a "double swap").

The **Audit Records** that were printed while using DISCO, before checking in your compartment, have kept track of all of these types of actions to help you efficiently address the stands that need attention in the Pre-Inventory layer. Remember to name each new stand with the exact name shown in the audit records.

The DISCO stands should contain the master list of all stands in the compartment, and consequently should be used as the basis for changes to the Pre-Inventory Layer. If for some reason it is necessary to make changes to the DISCO data, you may check the compartment back out, make the appropriate changes, then re-check it in. It may be necessary to use a co-worker's computer (who does not have any compartments checked out) to check out the data if you still have data from other compartments in DISCO.

Making Stand Boundary Modifications

Stand boundary modifications can and should take place as field work progresses. Initial delineation is done solely in the office. Once field work has begun, the user will need to make changes in the draft stand boundaries based on actual field conditions.

Field modifications: Simply hand-draw boundary modifications onto the field map or if using field GIS (Solo Forest), use the redlining tool to draw lines and drop notes. You may also use the sticky log feature to digitize each node of a stand boundary and later download that data for use in the GDSE. Make sure that stand numbers match what is recorded on the field sheets.

Note that IFMAP stand names can be descriptive if desired. For example, a stand split using names such as "Stand 23-Aspen" and "Stand 23-Oak", or "Stand 16-East" and "Stand 16-West". You may also want to add notes to the comments explaining why modifications were made to discuss with your counterpart (biologist/forester)

Making the changes at the office: The tools used for stand delineation are also used for boundary correction. There are three basic types of modifications:

- Adding new stands: See Chapter 2, page 16 and use the same procedures as "Creating the rest of the Stand Polygons". Ensure that stand numbers (names) match what you have in the DISCO Audit Records.
- Deleting Stands: Select the stand you wish to have consume the stand to be deleted. Click the Merge Feature button in the Pre-Inventory toolkit. Choose the stand to be deleted from the dropdown list. It too will be selected, click Merge. Verify Attributes in the attribute editor window.
- Changing stand boundaries: If field examinations reveal that stand boundaries need to be reshaped, first merge (chapter 2, page 16) the affected stands into one polygon and then split them with the correct configuration. Again, ensure that stand numbers (names) match what you have in the DISCO Audit Records.

Stand Attribute Modifications

Edits at this stage need to be very mindful of attribution. Attributes to complete/verify at this stage include:

Stand Numbers must match the field sheets, since the data entry is based on the Pre-Inventory stand number.

Forested/Non-Forested

must be set. This is extremely important, since it will determine whether the stand is transferred to the Forested layer or the Non-Forested layer.

The screenshot shows the 'Attributes' dialog box for a 'Pre-Inventory Layer'. The left pane shows a tree view with 'Pre-Inventory Stands' expanded, listing stand numbers 9 and 6. The main pane contains the following fields: 'Compartment: 63105', 'Stand Number: 9', 'Acreage: 3.2', 'Is field work complete? No', 'Forested Stand' (selected radio button), 'Non-Forested Stand' (unselected radio button), 'NonForest Code: <Select NF Code>', and a 'Comments' text area containing 'Large red pine trees in middle of young aspen - different at level 2 cover type and different by 2 size classes.'

Cover type set on Non-Forested stands. Be sure that it is a valid non-forest cover type.

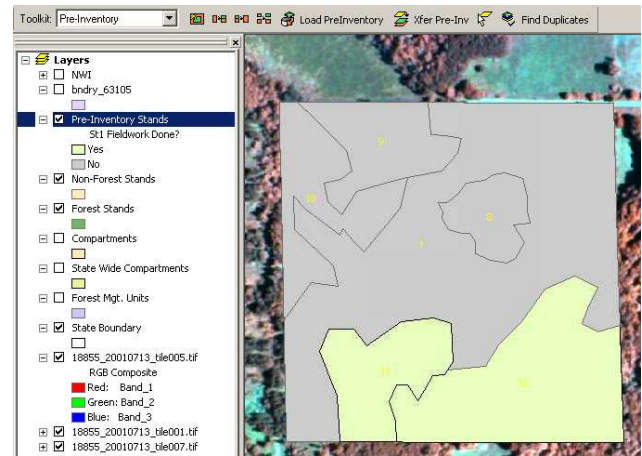
"Is field work complete" (optional) helps the examiner and managers track what stands have completed stage 1. This should be set to "Yes" if:

- You have completed the Stage 1 field inventory for that stand and the stand has a complete stage 1 field sheet,
- The stand number on the field sheet and in the attribute editor match,
- Changes to the boundary have been made if needed and the boundary is finalized, including creation of any multi-part polygons,
- The Forest/Non-forest attribute is set,
- If non-forest, a valid non-forest cover type has been coded.

If the Forest/Non-forest attribute has not been set, or if a non-forested stand does not have a cover type designation, the tool will not allow the "Is field work complete" field to be set to Yes.

In the illustration to the right, a portion of the compartment is not “done” – field work is not complete – for stage 1 data collection in the east.

The symbology for the pre-inventory stands layer is set to “St 1 Fieldwork done?” in the symbol picker. For more information on the symbol picker, see Appendix Z, page 21.



Transferring Pre Inventory data to Forested/Non-Forested stands

Once **all** of the above attributes and stand boundaries are finalized, the Pre-Inventory process concludes with the transfer of the Pre-Inventory Layer to the Non-Forested and Forested Layers.

Pre-Inventory data for a compartment should **only** be transferred after Stage 1 field work is completed and a careful review of the GIS data has been done to make sure that stand boundaries and Pre-inventory attributes have been correctly updated. The examiner should seek out their counterpart’s (biologist/forester) final review before running this tool.

Note: Once the Pre-inventory stands are transferred, the Forested and NonForested stand designations can only be edited using the “Swapper” tool (see page 16 in this chapter).

1. Select the Pre-Inventory Toolkit and click on the ‘Xfer Pre-Inv’ button.



2. The tool will ask you to select a compartment to transfer the Pre-Inventory data from. A message box will show how many stands are available in that compartment to transfer. This tool is running several error checks to ensure the data sets are ready to merge together. If you receive any message other than “... ### stands are ready to be transferred...” then one of the following error checks may have been tripped:

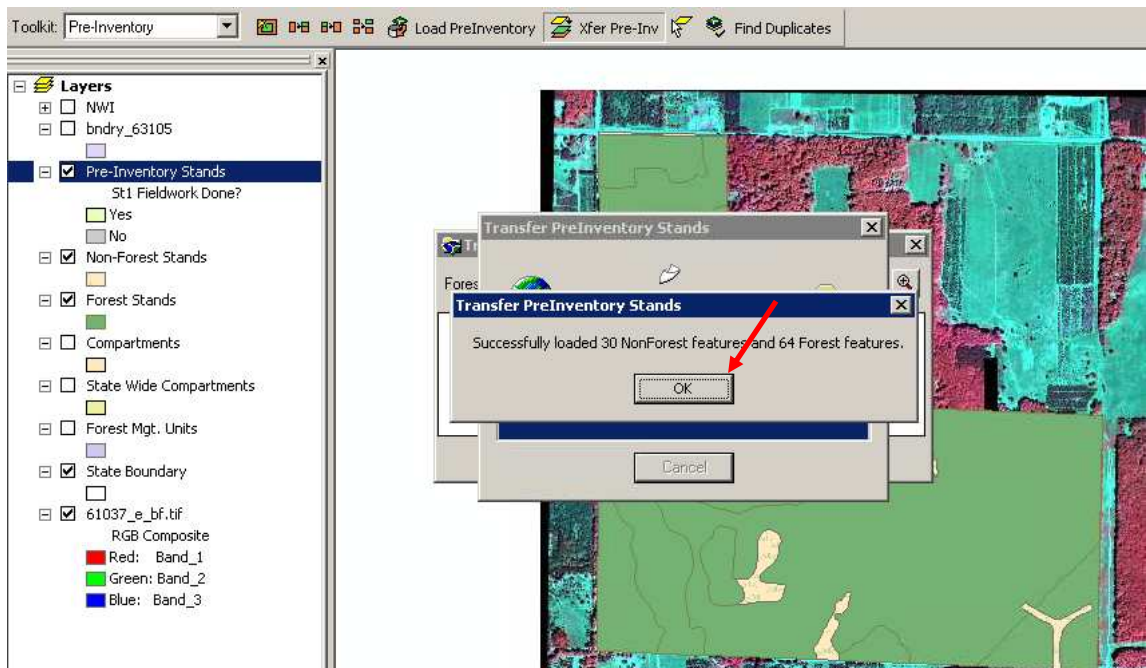
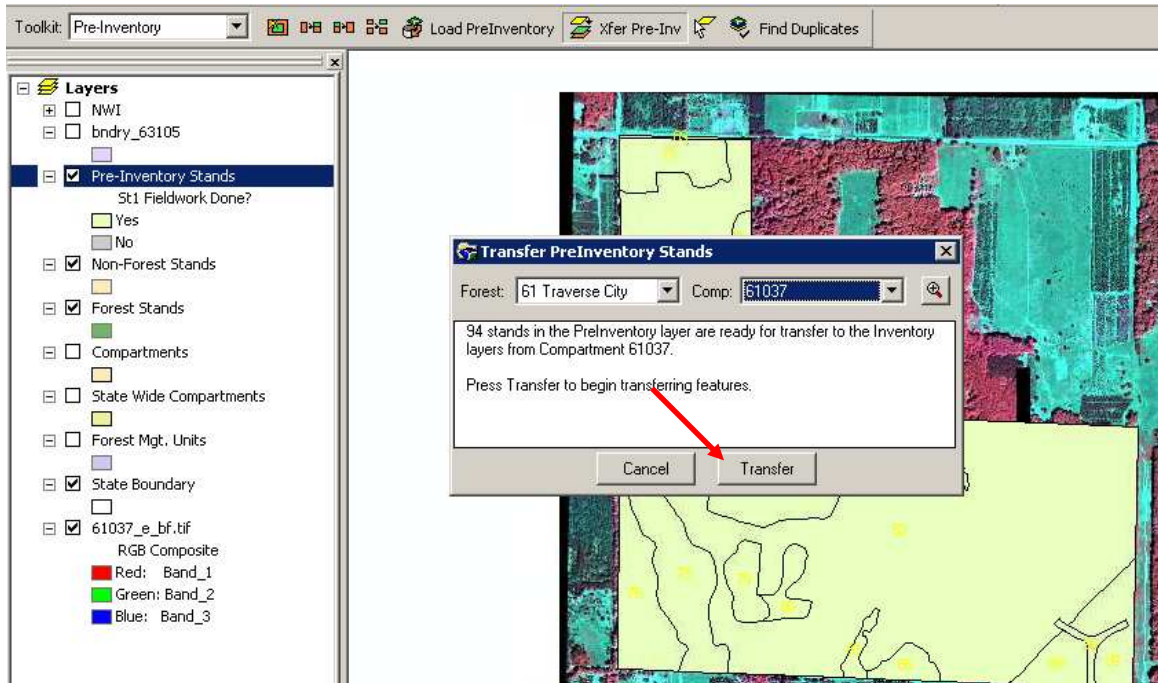
- a. Is there the same # of stands in each data set (DISCO stands and Digitized stands)?
- b. Is there the same Forested / Nonforested call for each stand in each data set?
- c. Is the same Pre-inventory covertime call made for all Nonforested stands?

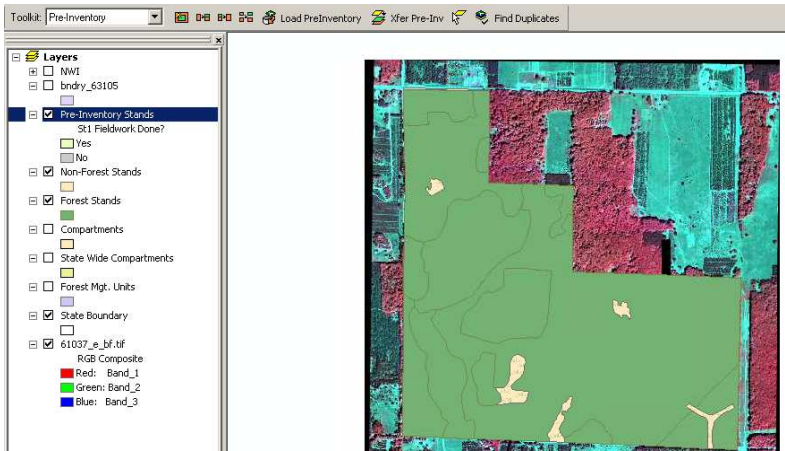
If any of the above criteria are not met, a message will list which stands need changes made to them.



Make the necessary changes noted in the message and try again.

When the message box shows how many stands are ready to be transferred, the Transfer button will become active.

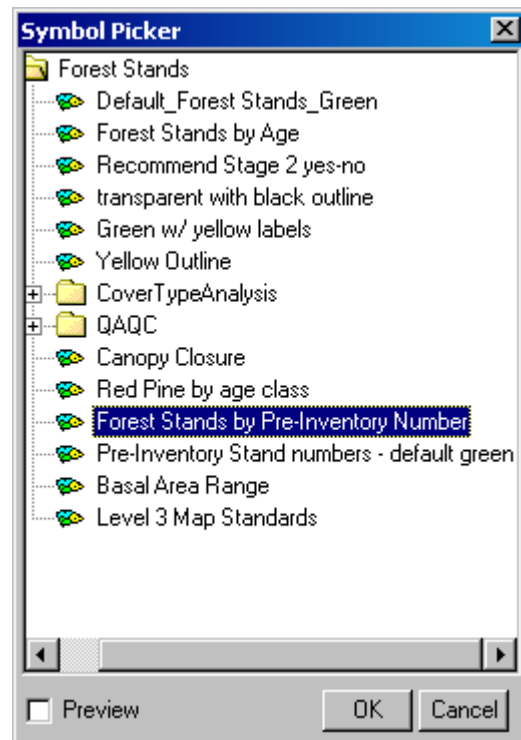




3. After the transfer is completed a message box will inform the user how many forested and non-forested stands were created by the transfer. Pre-inventory stands are divided into features in the Non-forested Stands layer and the Forested Stands layer. Pre-Inventory stands for that compartment are deleted. The new Forested and Non-forested layer stands are renumbered geographically.

4. Save your edits!

The renumbering that has taken place enables any end user of the stands layer to easily locate stands by the number. The pre inventory numbers often get fairly scrambled as field adjustments take place. Each time you add a new stand, the system automatically generates a label with the next available number in sequence, which you have the ability to modify. The renumbering will start at the NW corner of the compartment and sequentially renumber toward the SE. The new stand numbers have replaced the Pre-Inventory number as a label for the forested and nonforested stand layers, but it is important to know that you can view the stands labeled with the pre-Inventory number for management purposes. For instance, if you need to make changes to the data by referencing field sheets that were



numbered with the Pre Inventory #, use the symbol picker for the forested stands to label them as such. The pre inventory number is still a valid identifier of stands and has not disappeared from the data set; it is simply not used as a label from this point forward in the inventory process.

Stage 1 Data Entry Tools

Once the compartment's Pre-Inventory Layer is transferred into the Non-Forested and Forested layers, additional information may be added to each stand by using the stage 1 data entry tools. This tool set was designed as the primary data entry method for stand examiners before DISCO was in place, which enabled "disconnected editing". The user no longer needs to be connected to the network in order to perform data entry, nor do they need to complete all field work prior to beginning data entry. These online stage 1 data entry tools still hold a valuable place in the IFMAP inventory system for adding or editing data that exists in the forested and non forested layers. Comments, additional stand data, edits to existing stands, or new information (Inventory updates) will be entered into the database using these tools.

Data entry is by definition an edit because the user is editing the tabular data associated with a stand. Therefore, all data entry must occur "within an edit session" and edits are only saved when the Edit session is saved.

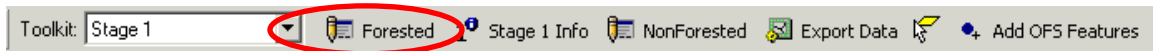
Forested and Non-Forested stands have different data entry needs and different data entry forms.

Using the Forested Data Entry Form

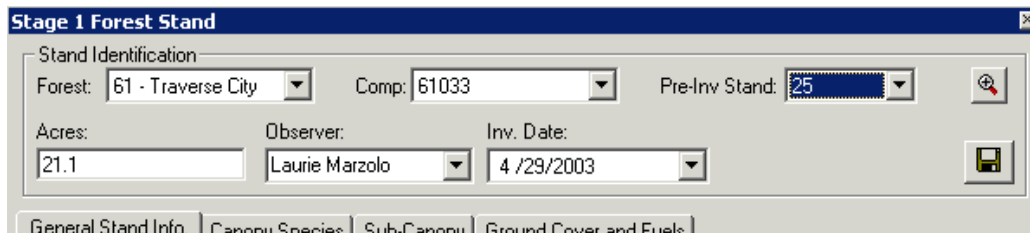
1. Start an edit session (save often). Set the target layer to the Forested Layer.




2. Select the Stage 1 Toolkit and click the 'Forested' button.



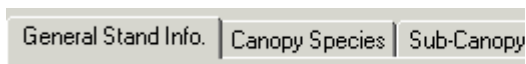
3. Choose a compartment and stand from the top of the data entry form before entering the data. The acres will be pre-populated, so begin by entering the Examiner and Inventory Date in the appropriate fields.



Stand Identification		
Forest:	61 - Traverse City	Comp: 61033
Pre-Inv Stand:	25	
Acres:	Observer:	Inv. Date:
21.1	Laurie Marzolo	4 /29/2003

4. The zoom to stand button  may be used to view the stand in question.

5. The forested data entry form has three tabs – General Stand Info, Canopy Species, and Sub-Canopy.



6. Select the General Stand Info tab and enter the information from the Stage 1 data sheet:

7. Select the Canopy Species tab and enter the Canopy Species information. Each time you wish to enter a new species, click the "Add New" button.

Species/Group	% Cover	Size Class	DBH	Age
Unspecified	0	Unspecified	0	0

8. Click on the row to highlight it, which allows entry of the values using pick lists.

9. For Species Selection, first select a Name Type – common genus and species, scientific name, or common name. Following are three ways to get the same result – Bigtooth Aspen.

The first screenshot shows the 'Species Selection' dialog with 'Name Type' set to 'Com. Genus & Species', 'Common Genus' set to 'Aspen', and 'Common Species' set to 'Bigtooth'.

The second screenshot shows the 'Species Selection' dialog with 'Name Type' set to 'Scientific Name', 'Genus' set to 'Populus', and 'Species' set to 'Grandidentata'.

The third screenshot shows the 'Species Selection' dialog with 'Name Type' set to 'Common Name' and 'Common Name' set to 'Bigtooth Aspen'.

10. Once you have selected the species, the remainder of the species data can be entered. Continue until all species are entered. "Update" after each species and save your session often.

The screenshot shows the 'Canopy Species' tab in a software interface. It includes a 'Species Selection' dialog with 'Name Type' set to 'Com. Genus & Species', 'Common Genus' set to 'Aspen', and 'Common Species' set to 'Quaking'. Below the dialog are input fields for '% Cover' (70), '% Rem.' (0), 'Size Class' (Pole/Sapling), 'DBH' (5), and 'Age' (32). To the right are 'Add New', 'Delete', and 'Update' buttons. Below these is a table of canopy species.

Species/Group	% Cover	Size Class	DBH	Age
Black Cherry	5	Pole/Sapling	4	0
Bigtooth Aspen	15	Pole/Sapling	5	0
Red Maple	3	Sapling/Pole	4	0
Sugar Maple	7	Pole/Sapling	4	0
Quaking Aspen	70	Pole/Sapling	5	32

11. Enter the Sub-Canopy Species using the same procedures. Species are grouped by type – convenient groupings such as trees, lowland shrubs, vines, etc. Select the type first. Then, select the name type – common genus and species, scientific name, and common name. Finally, select the species.

General Stand Info. Canopy Species Sub-Canopy

Sub-Canopy

Species Selection

Type: Unspecified Name Type: Common Name Common Name: Unspecified


Density: Unspecified Avg. Height: Unspecified Size: Unspecified Age: 0

Add New
Delete
Update

Sub-Canopy Species

Species/Group	Density	Avg. Height	Size	Age
Black Cherry	Low Density	Variable	Sapling	0
Maples	Low Density	Variable	Sapling	0
Hornbeam (Musclewood)	Low Density	3 - 10 feet	Tall Shrub	0
Unspecified	Unspecified	Unspecified	Unspecified	0

12. Once you have selected the species, the remainder of the species data can be entered. Continue until all species are entered. "Update" after each species and save your session often.

13. After all data for all tabs is entered, press the save icon  on the data entry form to save the changes for that stand. "Save Edits" from the Editor pull-down menu before leaving the Edit session.

Using the Non-Forested Data Entry Form

Non-forested data collection usually does not occur until later in the IFMAP cycle; instruction is given here on how to enter the data, but keep in mind that it will more likely be entered after snow off conditions.

To enter data for Non-forested stands:


1. Start an edit session (save often) and set the target layer to the Non-Forested Layer.



2. Select the Stage 1 Toolkit and click the 'NonForested' button.



- Choose a compartment and stand from the top of the data entry form before entering the data. The acres will be pre-populated, so begin by entering the Examiner and Inventory Date in the appropriate fields.

- The zoom to stand button  may be used to view the stand in question.
- The non-forested data entry form has three tabs – General Stand Info, Trees and Shrubs, and Ground Cover.

- Select the General Stand Info tab.
- Survey type will default to "Pre-inventory". If you did not field examine the stand, move on to the next stand. If you do have Non-Forested Stage 1 field data, you must change this field to either "field", "edge", or "remote" before the tool will allow you to proceed with data entry.
- If available, enter the rest of the general stand information from the Stage 1 data sheet:

Enter the Trees and Shrubs data from the field sheet. Each time you wish to enter a new species, click the "Add New" button.

Click to highlight the row, which allows entry of the values using pick lists. To select a species, first select the species "type" – convenient groupings such as trees, lowland shrubs, vines, etc. Highlight the species box and type the first letter of the desired species name (e.g. "N" for Nannyberry under Lowland Shrubs). To continue scrolling through the available "N" records keep hitting the "N" button.

9. Click Update to save (note – this does not permanently save the information until the edit session is saved).

10. Continue with additional species until all trees and shrubs are entered.

Species	Abundance	Distribution	Size Class
Mixed Grasses	Medium: 10-40%	Multiple clumps	Ground Cover
Chokeberry, Black	Trace: <2%	Multiple clumps	Shrub
Leatherleaf	Low: 2-10%	Multiple clumps	Shrub
Broom Sedge	Trace: <2%	Multiple clumps	Ground Cover
Blackberry	Trace: <2%	Along perimeter	Shrub
Blueberry	Trace: <2%	Multiple clumps	Shrub
Spotted Knapweed	Low: 2-10%	Multiple clumps	Ground Cover
Bracken Fern	Trace: <2%	Along perimeter	Ground Cover
Sedges	High: 40-70%	Multiple clumps	Ground Cover

11. Enter the Ground Cover data from the field sheet using the dropdown menus:

General Stand Info. | Trees and Shrubs | **Ground Cover**

Grass / Sedge: High: 40-70%

Low Shrub: Low: 2-10%

Forb / Fern: Low: 2-10%


Moss / Lichen: Trace: < 1%

Seedlings: Trace: < 1%

Water: Trace: < 1%

Snow: None: 0%

Barren: Trace: < 1%

12. After all data for all tabs is entered, press the save icon  on the data entry form to save the changes for that stand. "Save Edits" from the Editor pull-down menu before leaving the Edit session.

Forested/Non Forested Swapper

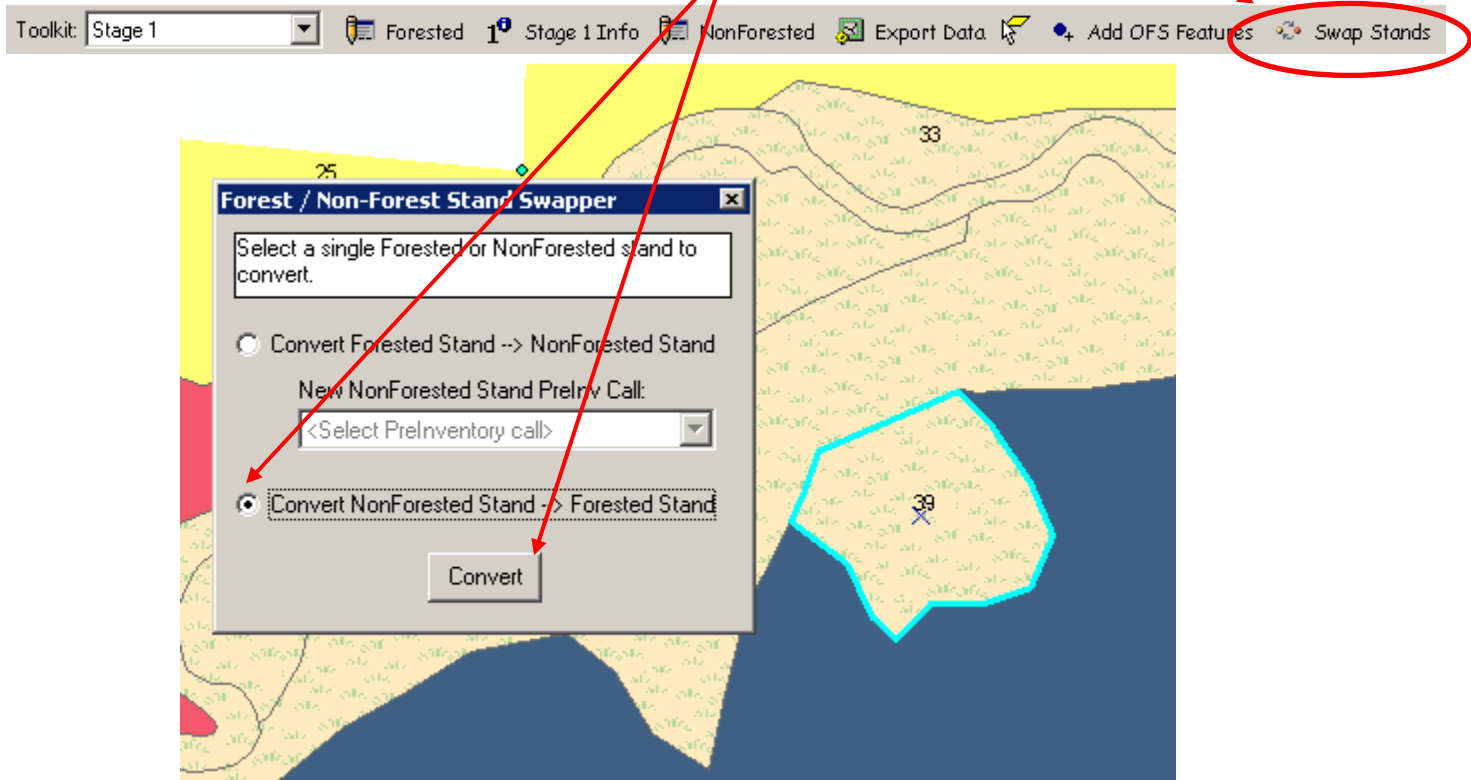
If in the course of doing data entry, it is discovered that a forested stand is misclassified as non-forested or vice-versa, the "Swap Stands" tool (Stage 1 Toolkit) should be used to change that stand to Forested from Non-Forested, or Non-Forested to Forested.

Non-Forested to Forested

To convert a Non-Forested Stand to Forested, follow these steps:

1. Begin an edit session.
2. Make 'Non-Forested Stands' your selection layer.
3. Use the selection tool to select the stand to be converted.

4. Click the "Swap Stands" button on the Stage 1 Toolkit.
5. Click the radio button that says "Convert NonForested Stand → Forested Stand", and press the Convert button.



Forested to Non-Forested

The process for converting a Forested stand to Non-Forested is the same as above, except that a "Pre-Inventory Call" must be assigned to the newly created Non-Forested Stand. The tool will not allow you to convert a stand to Non-Forested until a Pre-Inventory call is assigned from the drop-down list. Follow the same procedures from Pre-Inventory delineation to determine this Non-Forested call (See Chapter 2).