

# Chapter 2: Editing the NFI Sample Squares in Forester

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## 2.0 Editing the NFI Sample Square in Forester

### 2.1 Toughbook Login

The Toughbook has been configured to a Forestry Commission standard. The first screen to appear at start-up is "Log On to Windows". Enter the username and password issued by the FC. Wait while Windows XP loads.

### 2.2 Opening ArcMap

On the Toughbook desktop, double-click on the GIS Editor icon and wait for ArcMap to open (this may take a couple of minutes).

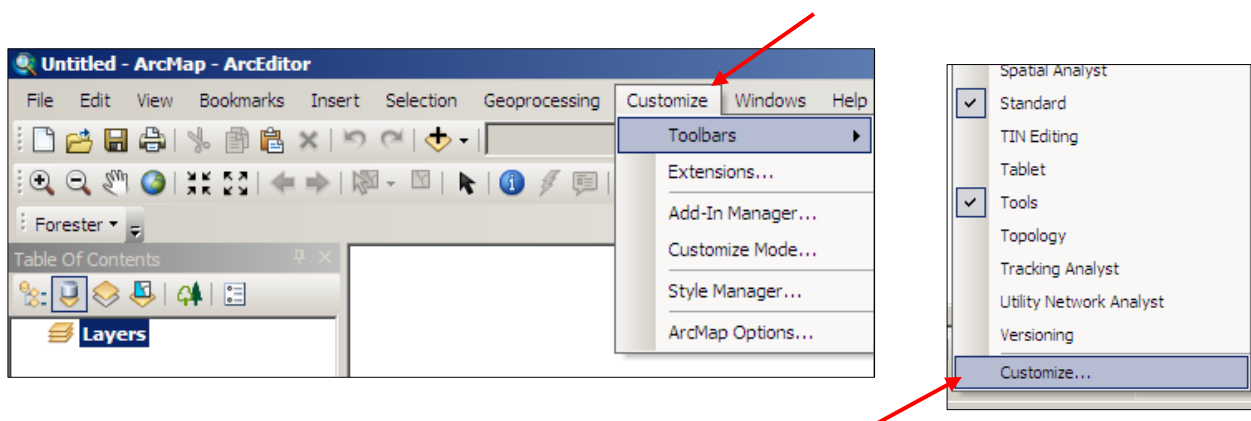


#### 2.2.1 Adding toolbars and individual tools

(This is only required the first time a user logs on).

##### 2.2.1.1 Adding toolbars

1. Click on "Customize" and select "Toolbars". Scroll down to the bottom of the toolbar list and click on "Customize".



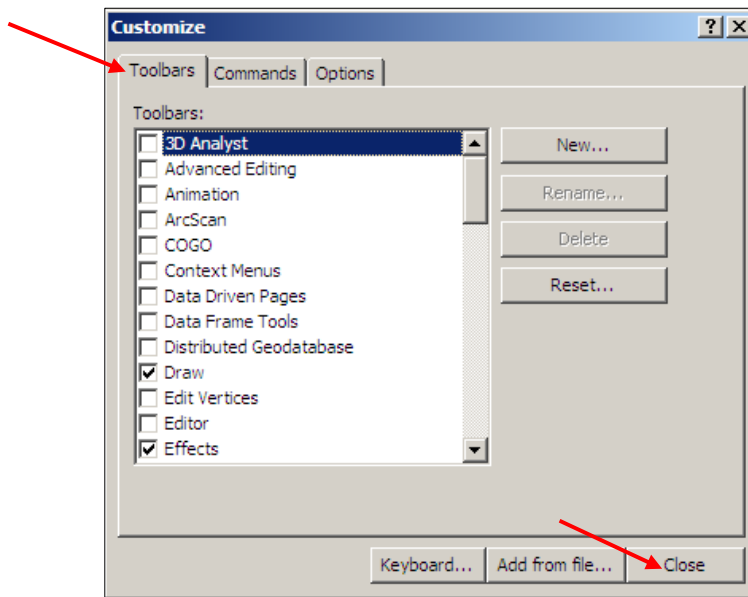
2-3 Remember to Save your Edit Session Regularly, Validate the information and Backup the Data



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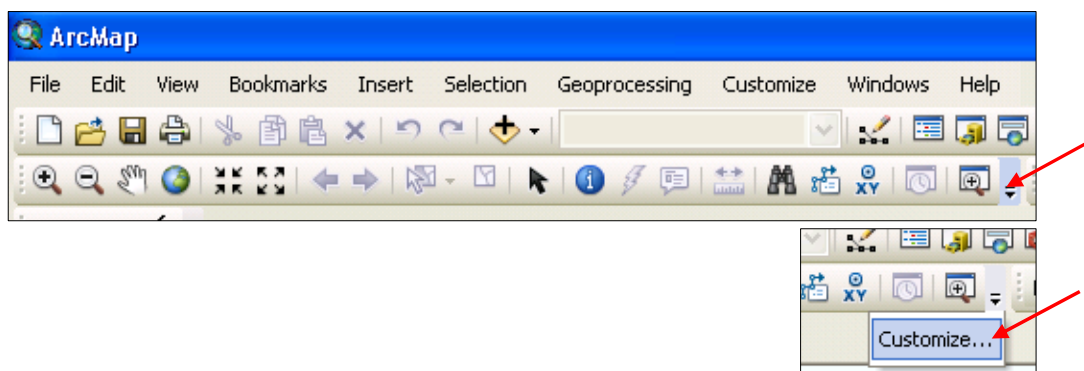
2. Select the "Toolbars" tab and scroll through the list. Forester, Main Menu, Standard and Tools should already be ticked. Place a tick against the "Draw" and "Effects" toolbars, and any others that may be of use. Click on the Close button.



## 2.2.1.2 Adding individual tools

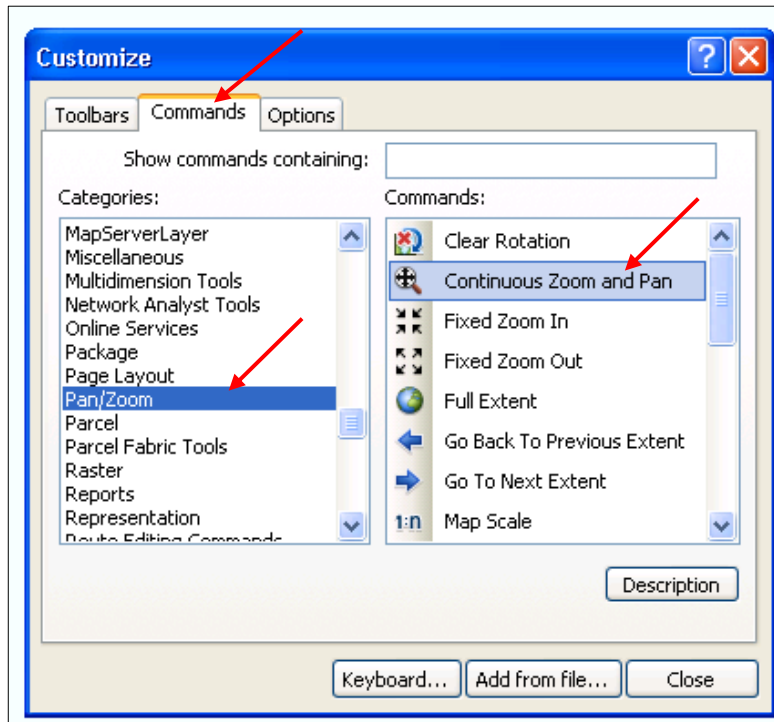
"Continuous zoom and pan" is a useful tool that may be added.

3. Call up the Customize box as outlined for "Adding toolbars" previously, or click on the drop-down button at the right side of any of the toolbars, and click on "Customize".

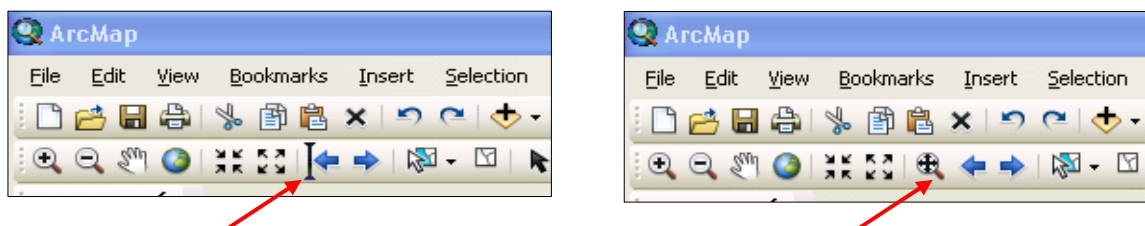


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4. Select the Commands tab. Scroll down through the Categories list on the left, click on "Pan/Zoom" and then click on "Continuous Zoom and Pan" in the Commands list on the right, so that it is highlighted in blue.



5. Click-and-drag the "Continuous Zoom and Pan" tool up out of the Customize box, and drop it **into** one of the **existing** ArcMap toolbars- a black pin will be displayed until the tool is dropped. The tool will **not** be added if it is dropped outside of an existing toolbar i.e. in the grey surrounding area.

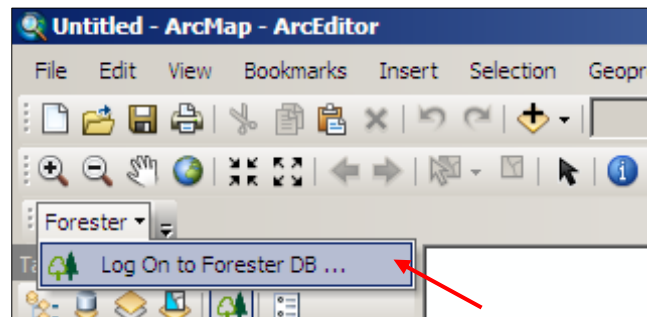


6. With the tool successfully added, close the Customize box.

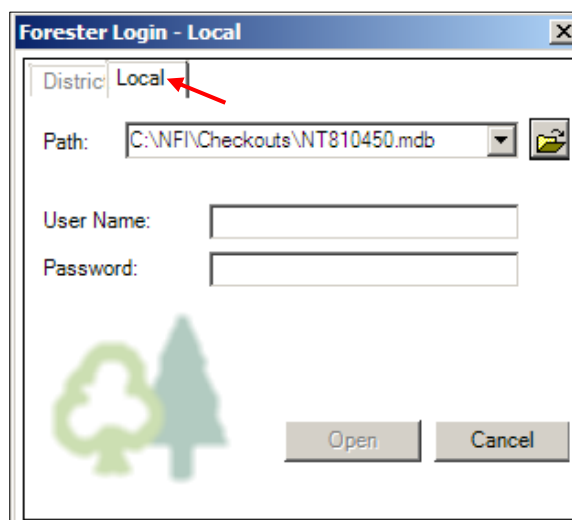
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## 2.3 Logging On to Forester and Loading in the Square Geodatabase

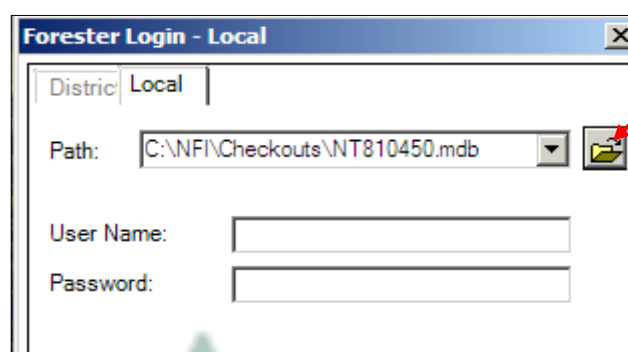
7. Click on the Forester button and then select "Log On to Forester DB....".



8. In the Forester Login box, click on the Local tab.



9. Click on the yellow folder icon to browse to a square geodatabase.



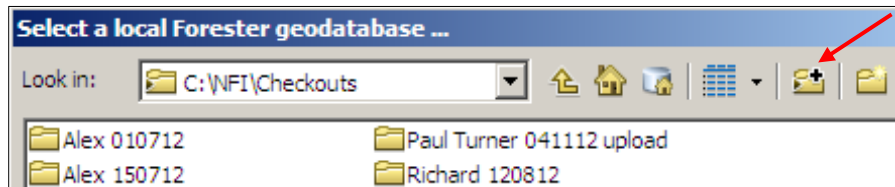
2-6 Remember to Save your Edit Session Regularly, Validate the information and Backup the Data



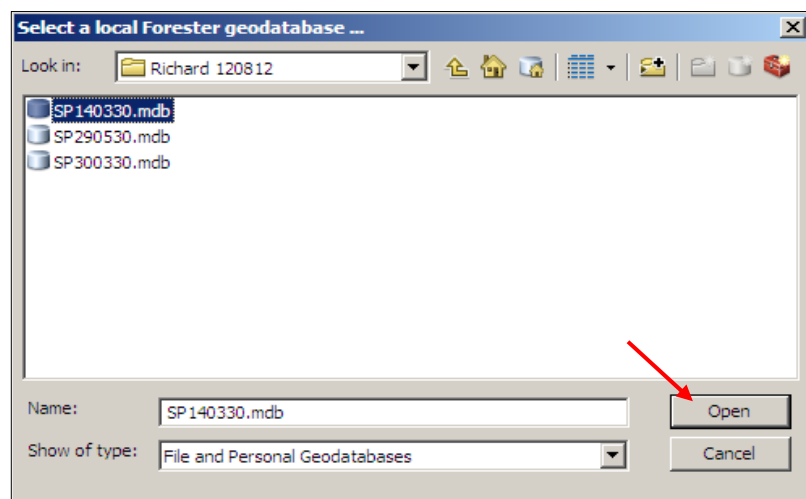
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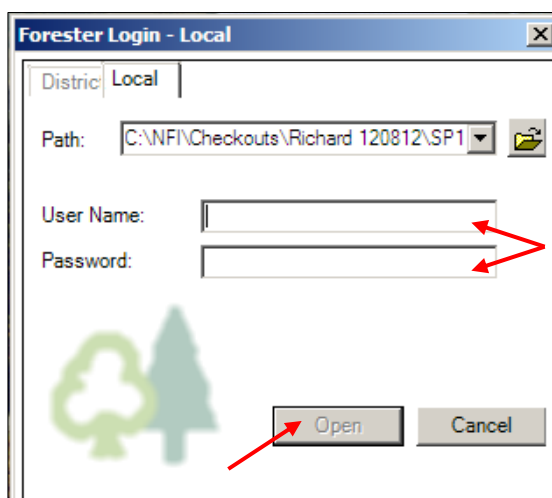
- Click on the "Connect To Folder" button at the top right of the box and navigate to C:\NFI\Checkouts (or simply select this pathway from the "Look in" field drop-down menu if already listed). **All squares for survey must be stored in Checkouts.**



- Select the square geodatabase to be loaded into Forester, and then click on the Open button.



- In the Forester Login box, enter username and password. Then click on the Open button and wait for the "Starting Forester" progress bar to complete.



**Note:** Login details will only work for the Bid Area(s) allocated to a survey team. Contract managers must contact the NFI Head of Surveys for new login details when temporarily required to work in another survey team's Bid Area.

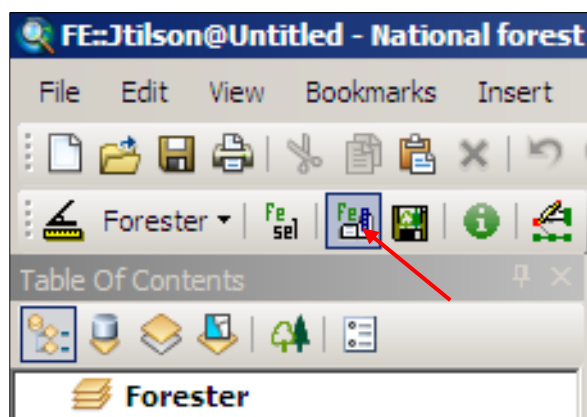
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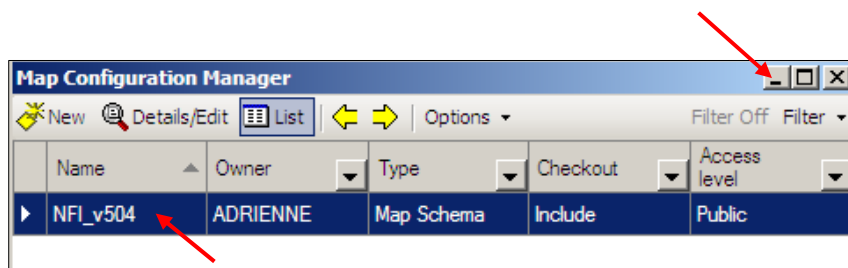
## 2.4 Opening the Map Schema to Load in Background Data

### 2.4.1 Opening the default NFI map schema

13. Click on the "Map Configuration Manager" button.



14. In the Map Configuration Manager box, double-click on the NFI map schema **name** to open it. Then **minimise** the Map Configuration Manager box (do **not** close it).



15. The background data automatically loads in. This includes the Ordnance Survey map and aerial photo image catalogues for the Bid Area, the NFI Woodland Maps for Scotland/England/Wales, and the grouped "Support info" layers (SSSI, Scheduled Ancient Monuments, Ancient Woodland, Beech Zone, Pine Zone, Coal Authority hazards etc.). Click on the + sign to the left of the "Support info" layer to expand down through the group.

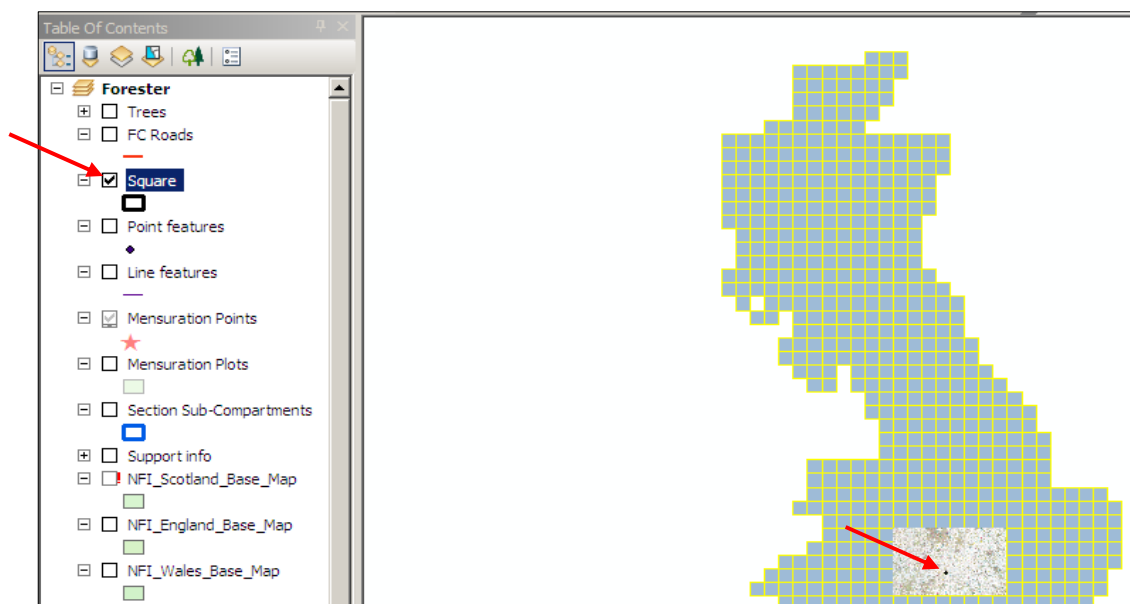


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## 2.4.1.1 Zooming in to the square

16. Tick the Square Layer on in the Table of Contents so that the square location is displayed on the map.



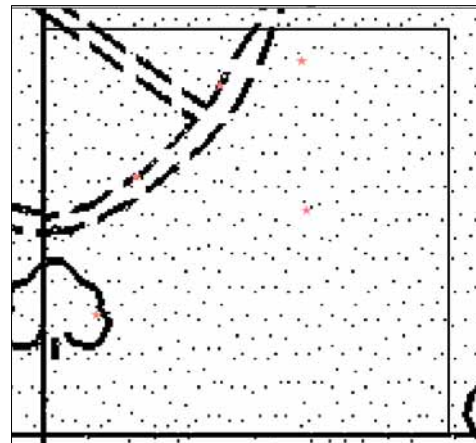
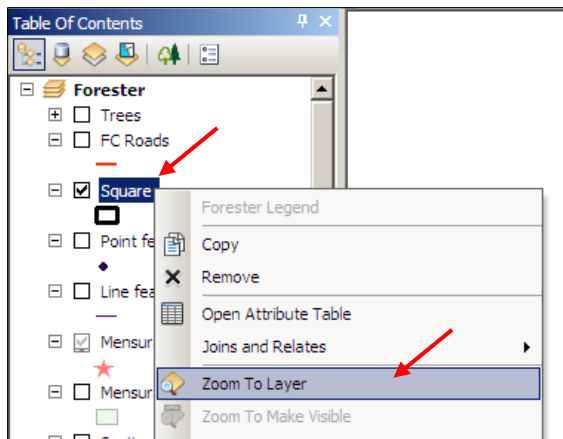
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17. Gradually zoom in closer to the square using the “Zoom In” button or by adjusting the map scale (select a scale from the drop-down list or type one in the box and press the Enter key).

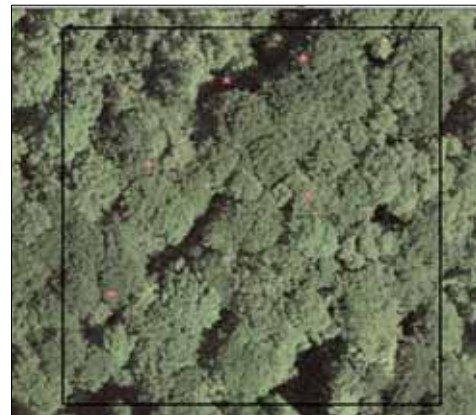


The appropriate OS map layers will switch off/on i.e. at 1:25000 scale the 50k layer switches off and the 25k layer switches on, at 1:24000 scale the 10k layer and aerial photo layer switch on, and at 1:10000 scale the 25k layer switches off.

18. To zoom directly to the square, right-click on the Square layer in the Table of Contents and then select, “Zoom To Layer”. The square is displayed with the OS10k map layer as a backdrop.



19. Tick off the “os10k” layer in the Table of Contents so that the aerial photo comes into view.



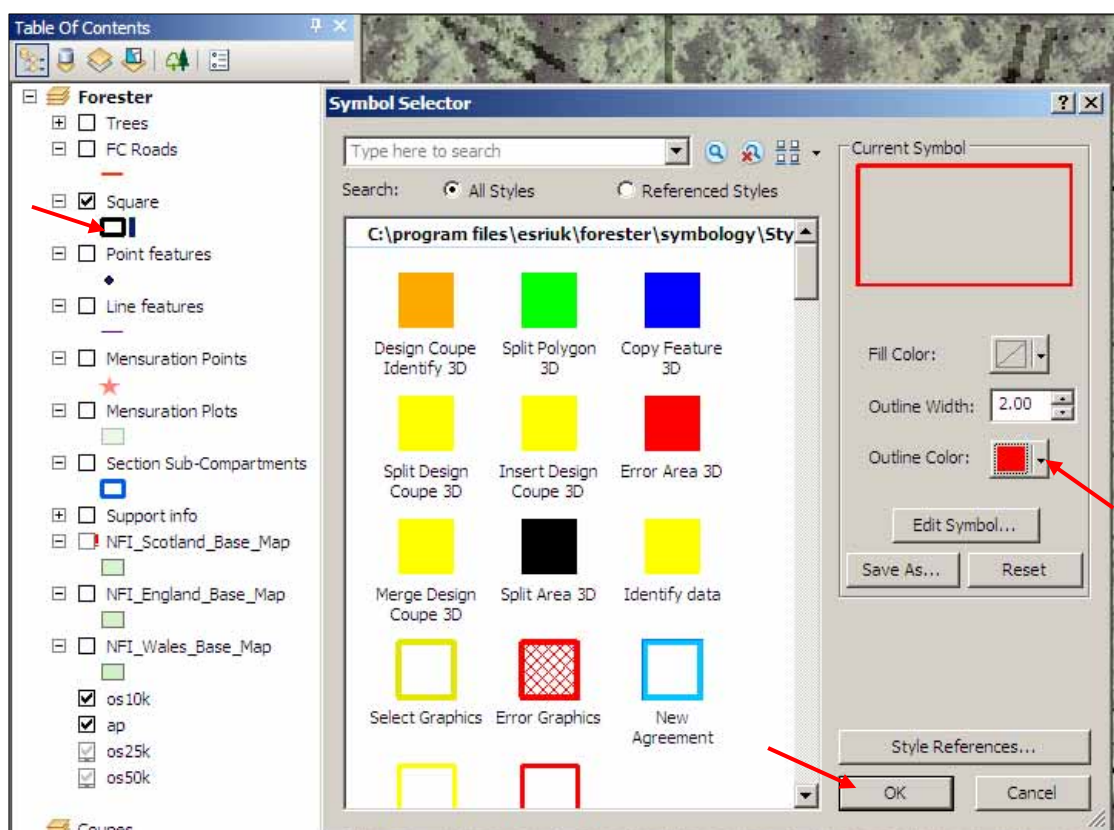
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## 2.4.2 Personalising the map schema

The NFI default map schema can be modified to individual preferences e.g. the surveyor can change the symbology of individual layers, make the OS10k layer transparent so that the aerial photo layer is visible beneath, change the order of the layers in the Table of Contents, and adjust the scale thresholds for the OS map and aerial photo layers coming into view.

### 2.4.2.1 Changing the symbology of individual layers

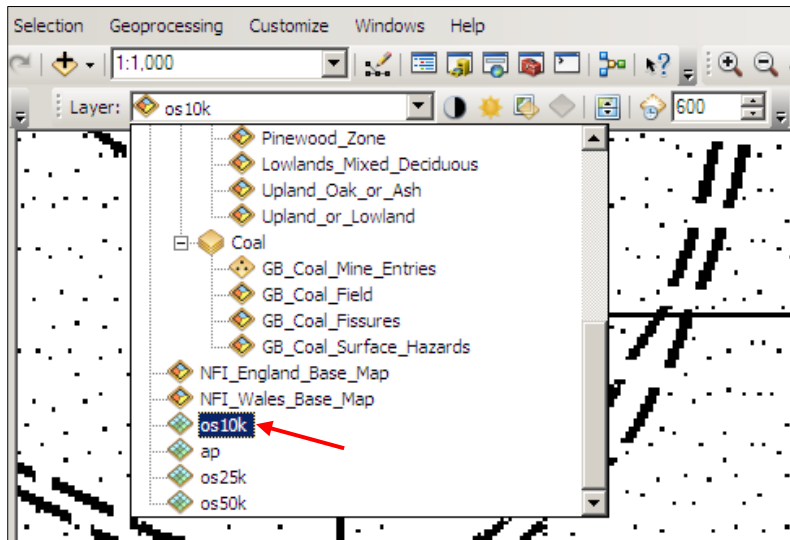
Simply left-click on the symbol beneath the layer name in the Table of Contents, adjust the settings in the "Symbol Selector" box and click the OK button to finish. In this example, the square boundary has been changed from black to red.



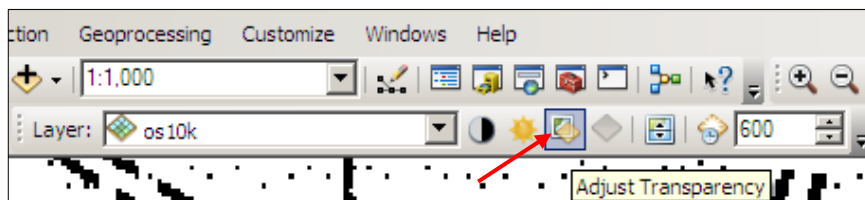
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## 2.4.2.2 Making the OS10k layer transparent

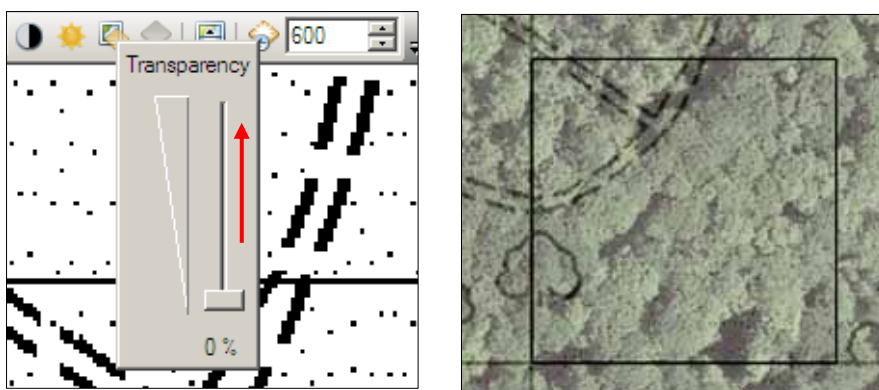
20. In the Effects toolbar, select "os10k" from the Layer drop-down menu.



21. Click on the "Adjust Transparency" button.



22. Slide the bar to set transparency at 70-80%.



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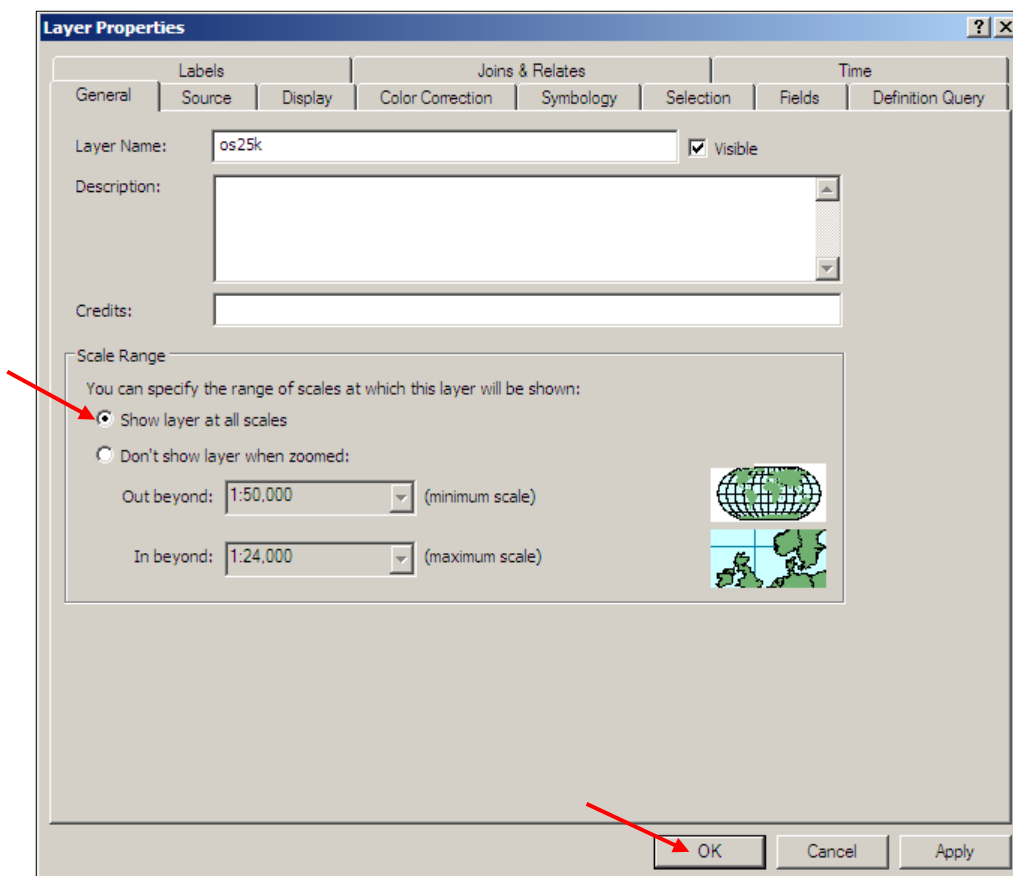
## 2.4.2.3 Changing the order of the layers in the Table of Contents

Click-and-drag a layer to a different position in the list.

## 2.4.2.4 Changing the scale thresholds for individual OS map and aerial photo layers

23. In the Table of Contents, double-click on the layer name (in this example os25k).

24. A Layer Properties box appears with the General tab selected. At the bottom left of the tab, the range of scales at which the layer to be shown can be specified i.e. the layer can be visible at all scales or the default scale thresholds can be adjusted using the drop-down lists.



25. Click on the OK button to finish.

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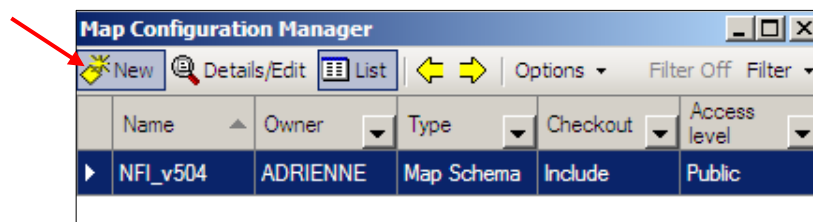
## 2.4.3 Saving the personalised map schema

The personalised map schema can be saved so that it is available for selection every time the particular square is loaded into Forester i.e. the personalised map schema will not over-write the original NFI map schema, it will just be listed alongside it in the Map Configuration Manager box.

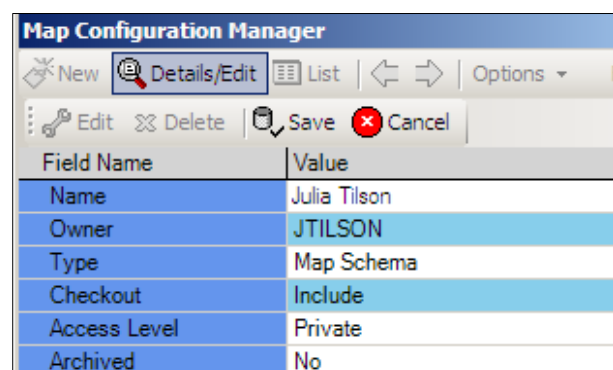
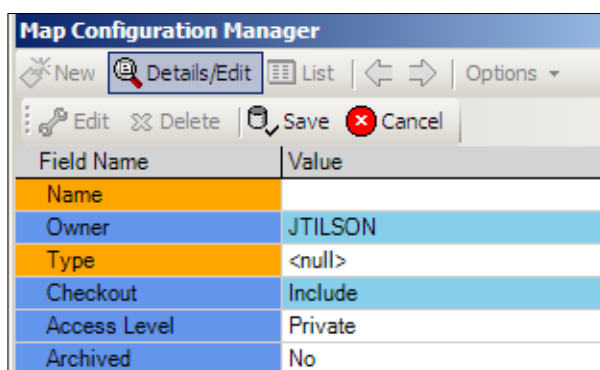
26. Restore the Map Configuration Manager box. To do this, left-click on the “Restore Up” button.



27. Click on “New” in the top left corner of the Map Configuration Manager box.



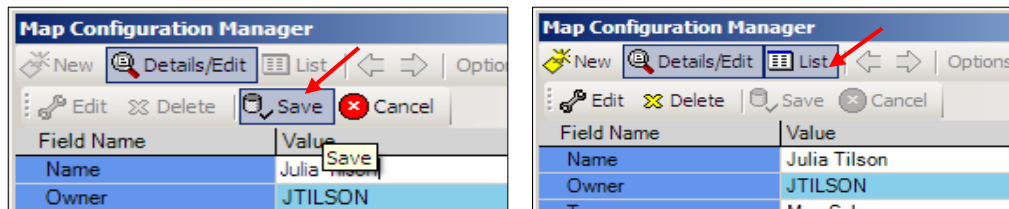
28. Complete the orange data fields: Name [surveyor name] and Type [select “Map Schema” from the drop-down menu].



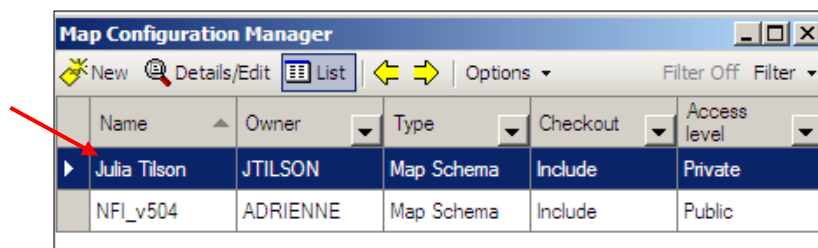


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29. Click on the Save button and then on the List button.



30. The personalised map schema has been saved and added to the list. When the square is next loaded into Forester, open the Map Configuration Manager and double-click on the name of the personalised map schema to open it.



31. Close the Map Configuration Manager box.

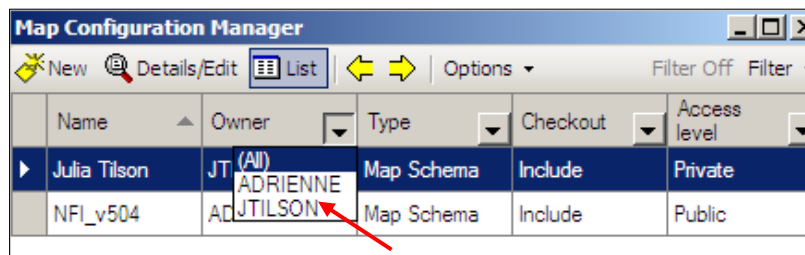
## 2.4.4 Importing the personalised map schema into other squares

The personalised map schema can be exported from the Map Configuration Manager box to a place on the Toughbook so that it is available to be imported into the next square to be surveyed (and the next, and the next) rather than having to modify the default NFI map schema every time a new square is loaded into Forester.

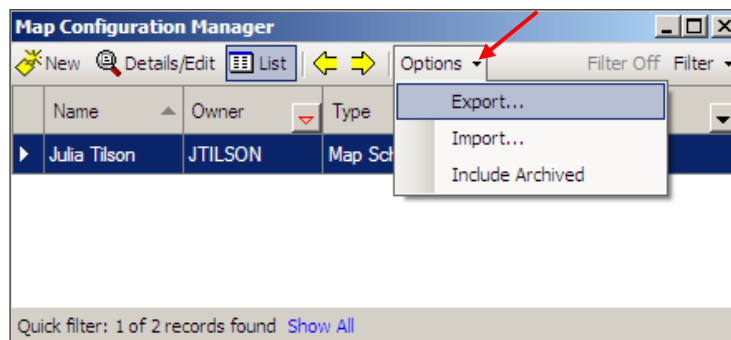
### 2.4.4.1 Exporting the personalised map schema

32. Load the square containing the personalised map schema into Forester and then click on the "Map Configuration Manager" button.
33. Apply a filter so that the personalised map schema is the only one listed in the box (i.e. the default NFI map schema becomes hidden). To do this, click on the drop-down button at the right of the "Owner" column and select the personalised map schema.

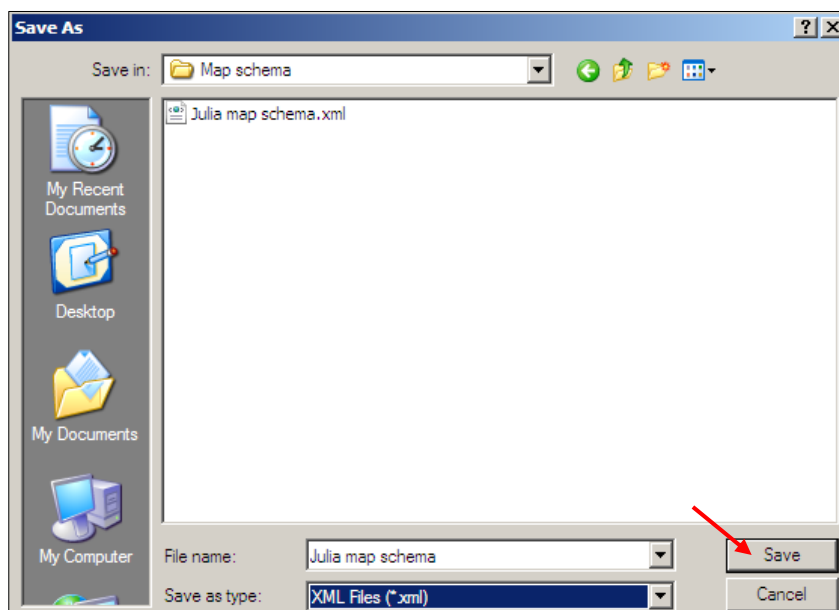
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34. Click on the "Options" button in the Map Configuration Manager box and select "Export".



35. In the Save As box, in the "Save in" field, navigate to the place on the Toughbook where the map schema is to be stored. Change the "File name" field as desired. In the "Save as type" field, select "XML Files (\*.xml)". Then click on the Save button.



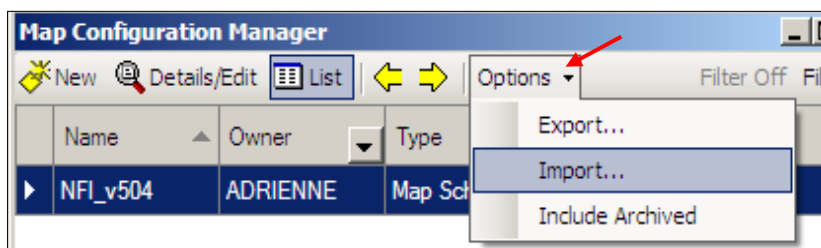


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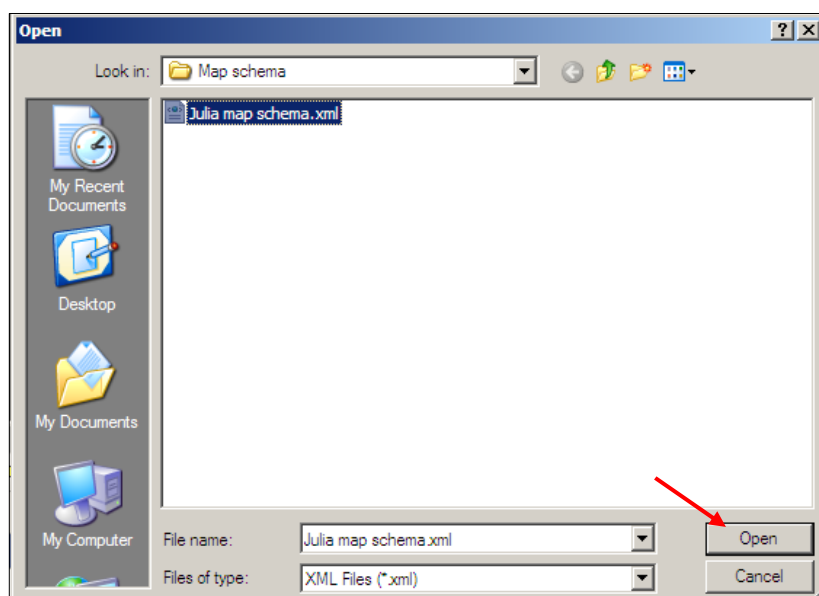
36. A message box appears confirming that 1 record has been exported. Click on the OK button.
37. Close the Map Configuration Manager box.

## 2.4.4.2 Importing the personalised map schema to a new square

38. Load a new square into Forester and then click on the “Map Configuration Manager” button. See just the default NFI map schema listed.
39. Click on the “Options” button in the Map Configuration Manager box, and select “Import”.

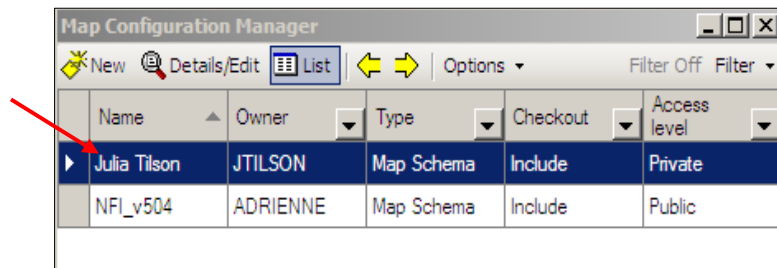


40. In the Open box, in the “Look in” field, navigate to the place on the Toughbook where the personalised map schema is stored. Click on the map schema .xml file name so that it is highlighted in blue and then click on the “Open” button.



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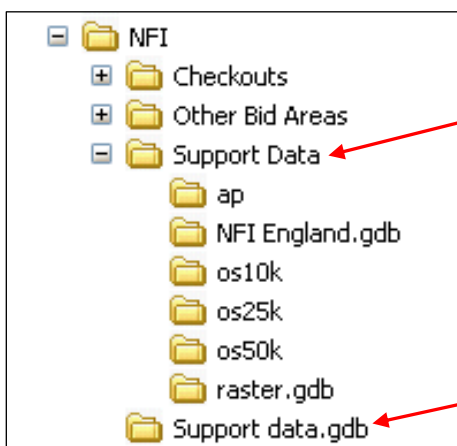
41. A message box appears confirming that 1 record has been imported. Click on the OK button.
42. The personalised map schema is now listed in the Map Configuration Manager box. Double-click on the schema name to open it.



43. Close the Map Configuration Manager box.

## 2.4.5 Background data folder structure

Background data for a particular Bid Area comes in 2 parts: a “**Support Data**” folder and a “**Support data.gdb**” folder. These 2 folders **must** be stored within **C:\NFI** as shown below.



This holds the Ordnance Survey map and aerial photo image catalogues for the Bid Area and the relevant NFI Woodland Maps.

This holds the “Support info” data which appears in the ArcMap Table of Contents.

Do **not** alter the folder structure or the folder names. The map schema will not be able to find the data and a red exclamation mark will appear against the layer name in the Table of Contents.

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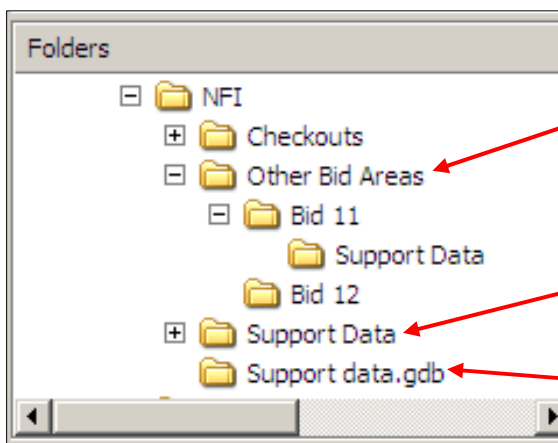
## 2.4.6 Swapping between Bid Areas

The Toughbook can hold background data for up to **two** Bid Areas at once without unduly slowing down. The Support Data folder for the Bid Area that the surveyor is actively working in **must** be held within **C:\NFI** in order for the map schema to find the data. Only one Support Data folder is permitted within C:\NFI at any time. The Support Data folder for the 2<sup>nd</sup> Bid Area that the surveyor is **not** actively working in can be temporarily stored within **C:\NFI\Other Bid Areas** as shown below.

When the surveyor wants to undertake work in the 2<sup>nd</sup> Bid Area, the Support Data folder for the 1<sup>st</sup> Bid Area must be moved out from C:\NFI (into the "Other Bid Areas" folder) so that the Support Data folder for the 2<sup>nd</sup> Bid Area can be moved into C:\NFI.

Because the Support Data folder name cannot be modified, it is necessary to create Bid Area sub-folders within the "Other Bid Areas" folder to avoid risk of over-writing one Support Data folder with another during the swap. This will also eliminate any confusion over which Support Data folder belongs to which Bid Area.

In this example, the surveyor is actively working within Bid Area 12 so the Support Data folder for Bid Area 11 is temporarily stored in the "Other Bid Areas" folder.



The Support Data folder for the 2<sup>nd</sup> Bid Area is temporarily stored here.

The Support Data folder for the **active** Bid Area must be held here.

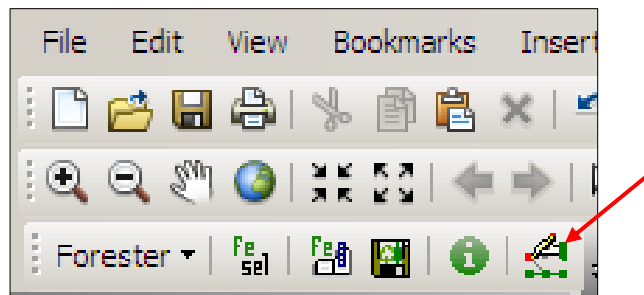
This folder is the same for all Bid Areas so doesn't ever need to be moved.

Surveyors working in **more than two** Bid Areas will have to store the Support Data folders for the additional Bid Areas on an external hard drive and swap them with those held on the Toughbook as needed. Data transfer generally takes 1-1.5 hours per Bid Area.

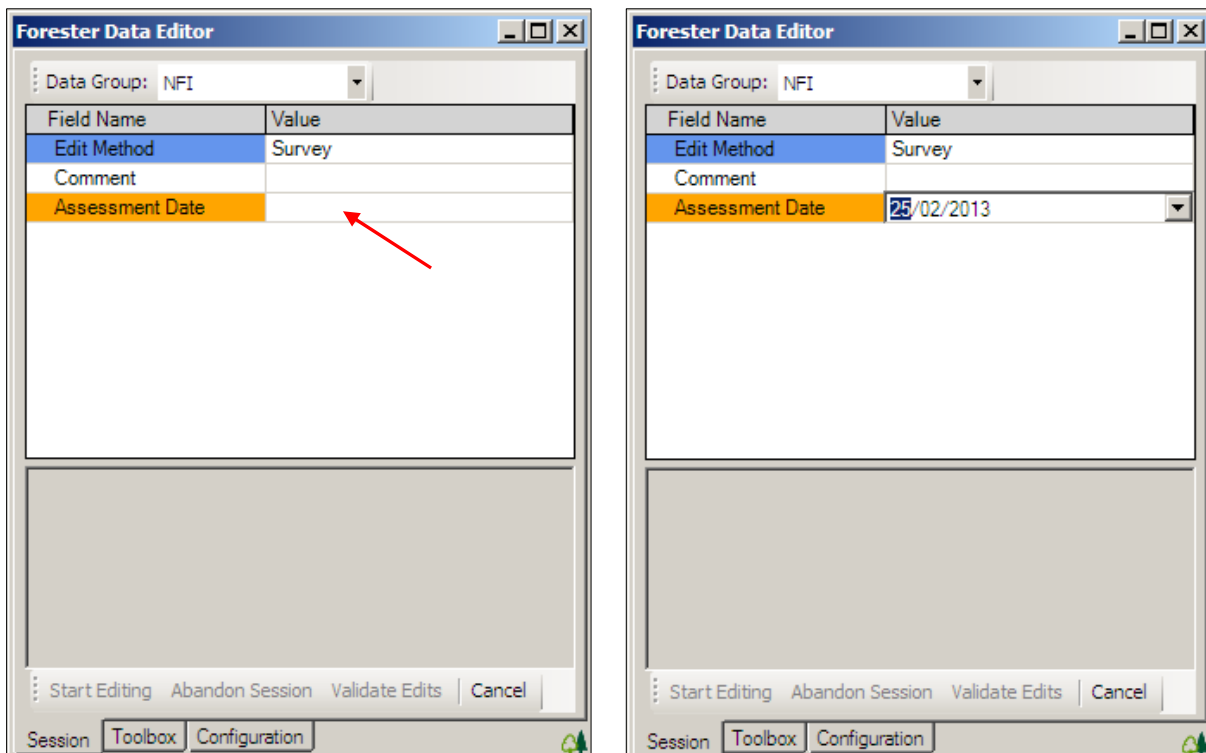
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## 2.5 Starting the Forester Data Editor Session

44. Click on the "Forester Data Editor" button.

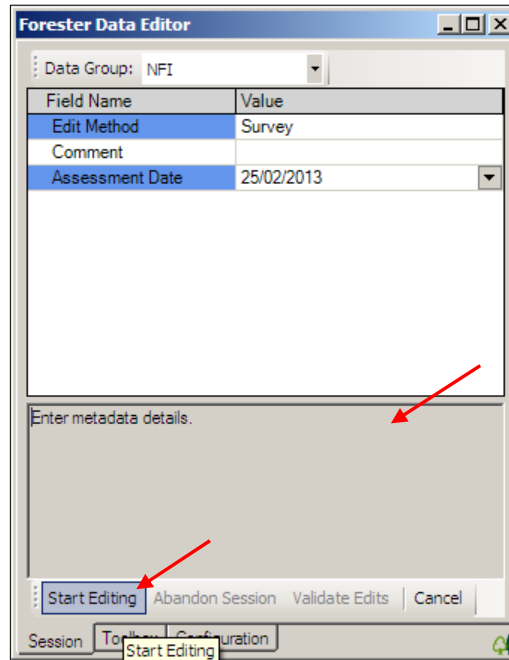


45. The Forester Data Editor window opens with the Session tab automatically selected. Complete the orange "Assessment Date" data field. To do this, simply click in the white Value field to the right and the software will automatically fill-in the current date.

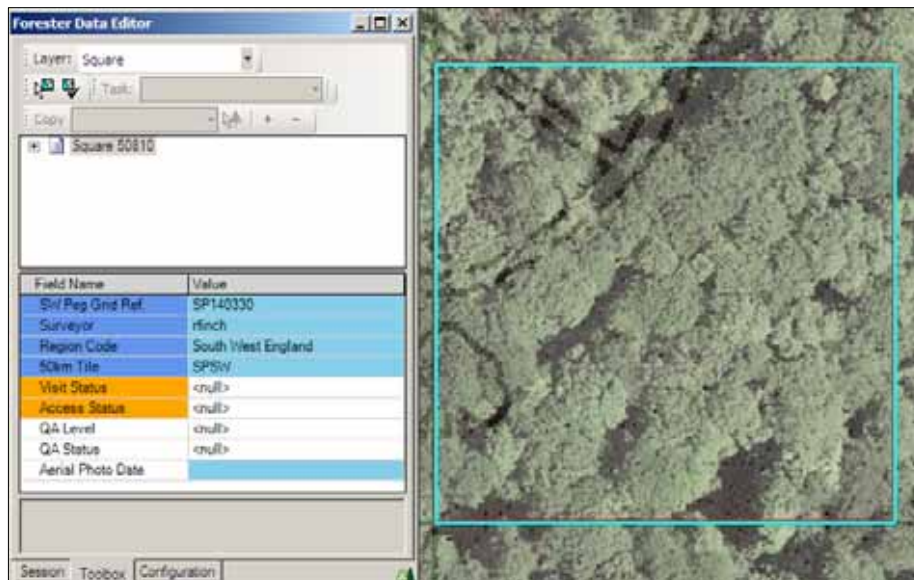


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46. Click within the grey area beneath and then click on the “Start Editing” button.



47. The Forester Data Editor session opens with the square fully zoomed in.



48. Minimise the Forester Data Editor window so that the Table of Contents is in view. Tick on **all** of the GIS layers, including those grouped under the “Support info” layer. Restore the Forester Data Editor window.

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## 2.6 Validating Edits

At the end of every field survey session, and on completion of the square, surveyors are required to use a series of software validation tools to highlight sources of error in their data.

There are **three** software validation tools, which should be used in combination.

- The “Validate features in edit area” tool is used for detecting sources of error within an **individual Layer across the square as a whole**. So, for example, all Section Layer errors for the square are highlighted in one go.
- The “Show Invalid Items” tool is used for detecting sources of error within an **individual Section**, but only for the Section Layer and Mensuration Plot/Point Layer data. So, for example, all Plot Layer errors within the Section are highlighted in one go.
- The “Validate Edits” tool is used for detecting sources of error **within all Layers across the square as a whole** i.e. all errors relating to any Layer are highlighted in one go.

The validation tools do **not** currently screen the **Point Feature** Layer data for errors, so this must be done manually by the surveyor.

### 2.6.1 Validation errors

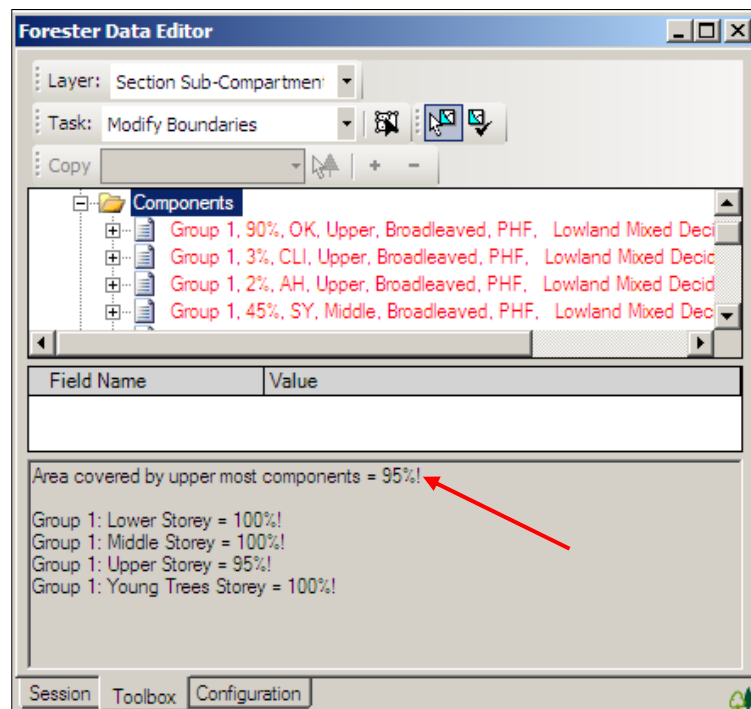
Sources of error highlighted by the software validation tools are termed “validation errors”. These are displayed in **red font** in the top half of the Forester Data Editor window. Wherever a folder or a record is displayed in red font, this indicates that an error is buried somewhere in the data, and the cause **must** be investigated.

Validation errors are most often caused by mandatory data fields not being completed, in which case the empty data field remains orange.

Field Name	Value
SW Peg Grid Ref.	SP140330
Peg Location	SW
Peg GPS Loc.	SP1400033010
Peg Comments	
Peg Loc. Origin	<null>
Landscape Loc.	Middle Slopes

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Validation errors may also occur as a result of a survey protocol rule being broken. In the example below, the Component % areas for the upper storey do not sum to 100% of the Section and so an error message is displayed in the grey area at the bottom of the Forester Data Editor window.



**Genuine** validation errors **must** be corrected prior to submitting the square to the FC. In the rare event that a validation error cannot be fixed because the software rules are out of sync with what has been recorded, then this **must** be flagged up in an e-mail to the NFI Geospatial Data Manager and the NFI Head of Surveys.

## 2.6.2 Using the “Validate features in edit area” tool

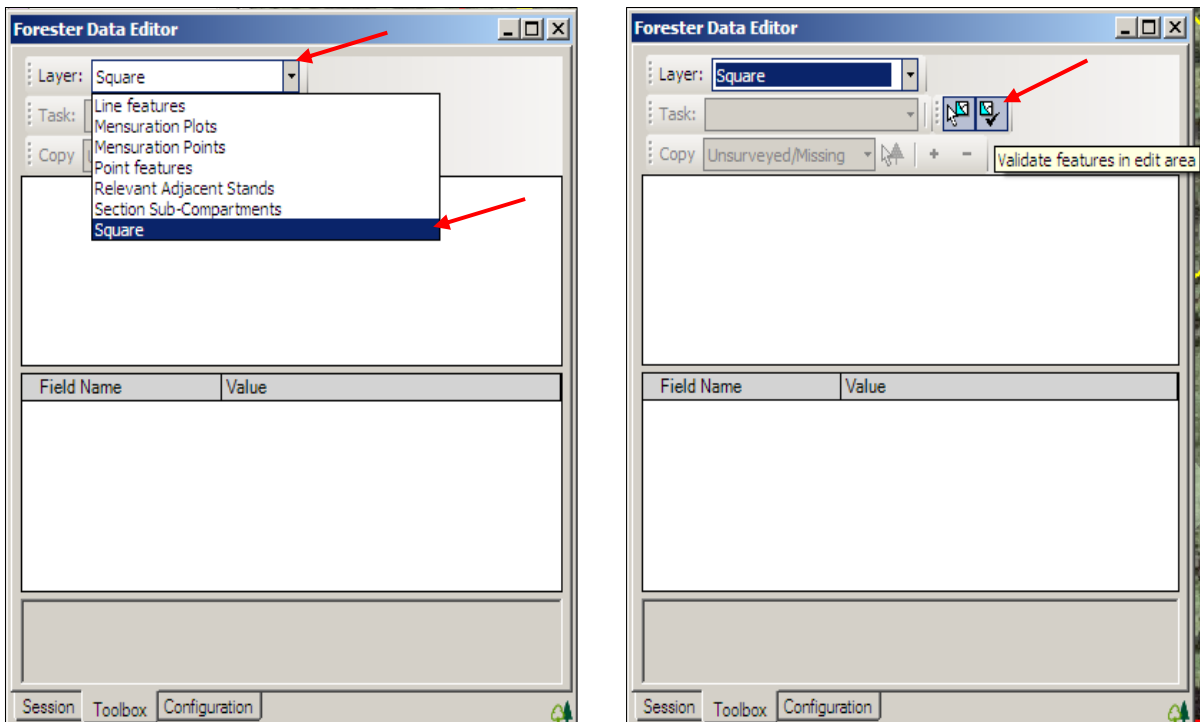
The “Validate features in edit area” button is located on the Toolbox tab at the top of the Forester Data Editor window.



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## Checking for errors in the Square Layer data

49. In the Forester Data Editor window, select "Square" from the Layer drop-down menu and then click on the "Validate features in edit area" button.



50. A message box appears advising whether errors were found. Click on the OK button.



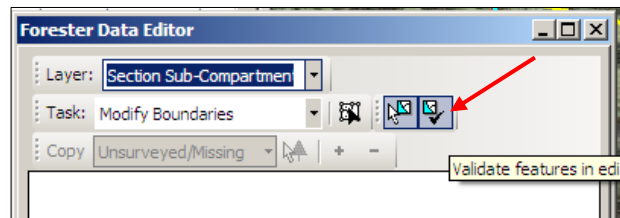
51. If errors are found, scroll down through the square data fields to locate these i.e. search for empty (orange) data fields.
52. Enter the missing data and then click on the "Validate features in edit area" button to ensure that all errors have been corrected.



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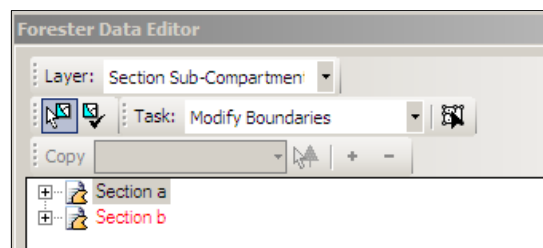
Checking for errors in the Section, Mensuration Plot and Linear Feature Layer data

53. In the Forester Data Editor window, select "Section Sub-Compartmen" from the Layer drop-down menu and then click on the "Validate features in edit area" button.

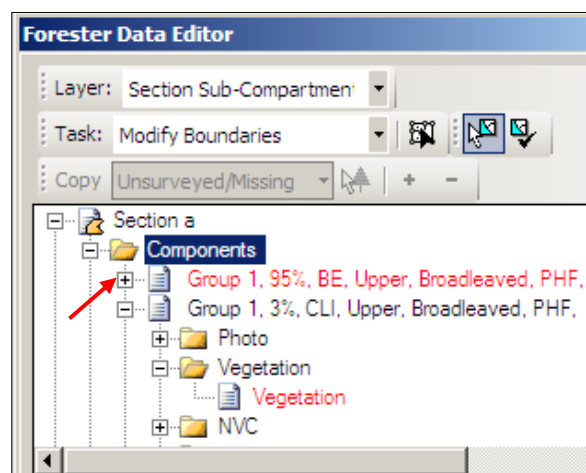


54. A message box appears advising whether errors were found. Click on the OK button.

55. Sections containing errors are listed in the Forester Data Editor window.

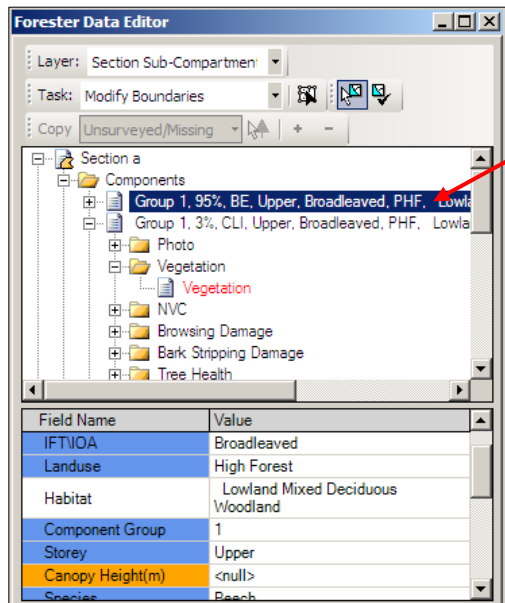


56. Fully expand the data for each listed Section by clicking on the folder + signs.



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57. Click on anything displayed in **red font** to investigate the source of the error.

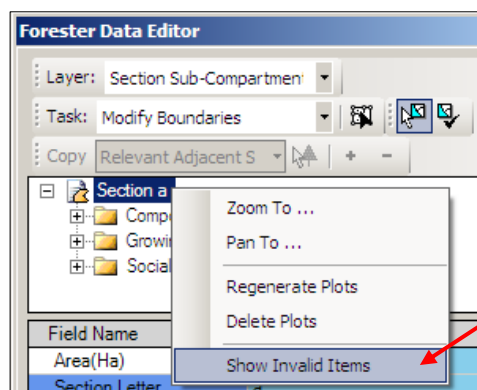


58. Correct the data so that the red font turns to black. Click on the “Validate features in edit area” button again after each sequence of corrections.

59. In the Forester Data Editor window, change the Layer field to “Mensuration Plots” or “Linear Features”. Then click on the “Validate features in edit area” button and follow the same procedure as outlined in steps 2-6.

## 2.6.3 Using the “Show Invalid Items” tool

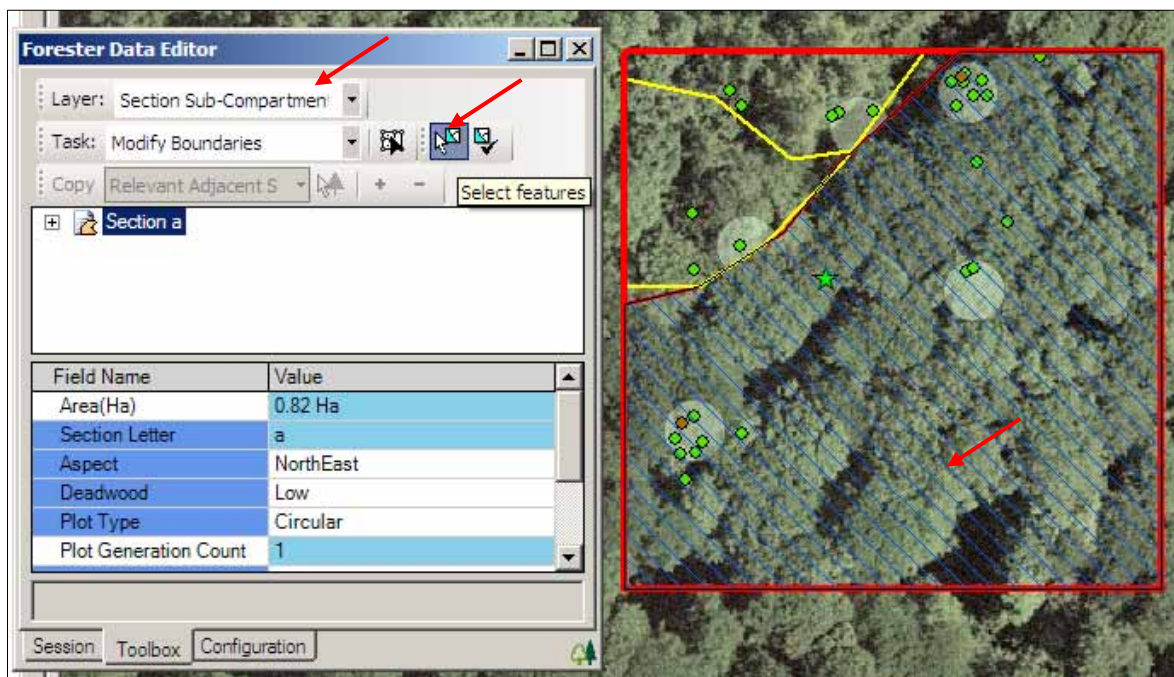
The “Show Invalid Items” tool is accessed by right-clicking on the Section name in the Forester Data Editor window.



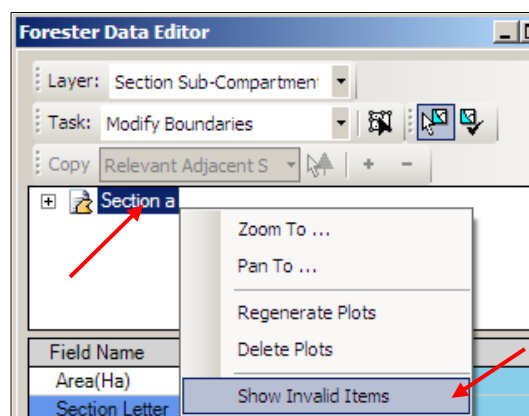
# NFI Survey Manual Chapter 2: Editing the NFI Sample Square in Forester

## 2.6.3.1 Checking for errors in the Section data for an individual Section

60. Select the Section. To do this, in the Forester Data Editor window, select "Section Sub-Compartmen" from the Layer drop-down menu, click on the "Select features" button to the right of the Task box and then left-click anywhere in the Section on the map. The Section name will appear in the Forester Data Editor window.

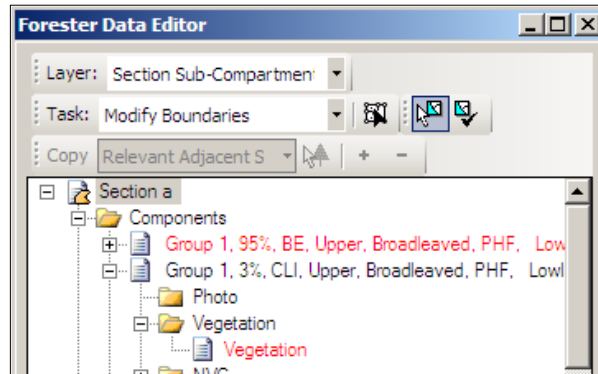


61. Right-click on the Section name in the Forester Data Editor window and select "Show Invalid Items".



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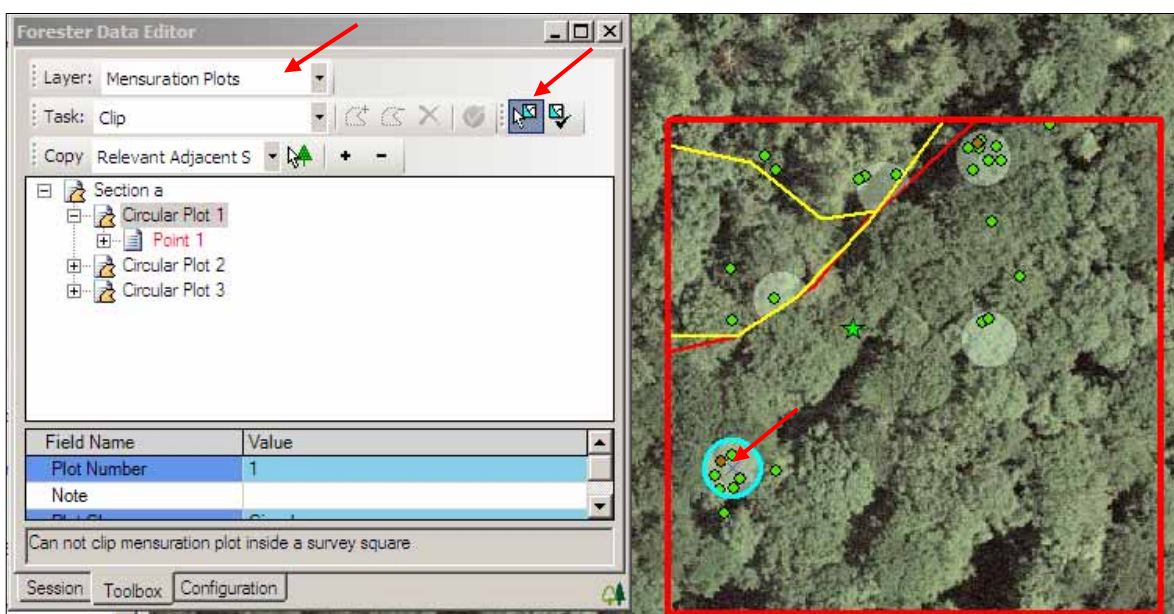
62. The Section folder automatically opens with the data expanded to show sources of error, which are highlighted in **red font**.



63. Click on anything displayed in **red font** to investigate the source of the error.
64. Correct the data so that the red font turns to black. Right-click on the Section name and select "Show Invalid Items" after each sequence of corrections.

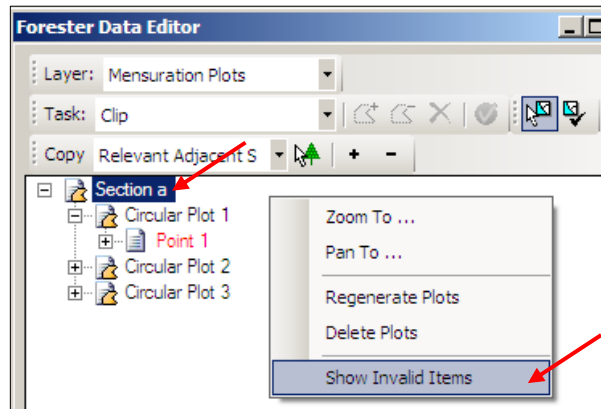
## 2.6.3.2 Checking for errors in the Plot data for an individual Section

65. Select the Plots. To do this, in the Forester Data Editor window, select "Mensuration Plots" from the Layer drop-down menu, click on the "Select features" button to the right of the Task box and then left-click in any of the Plots on the map. The Section name and Plots are listed in the Forester Data Editor window.

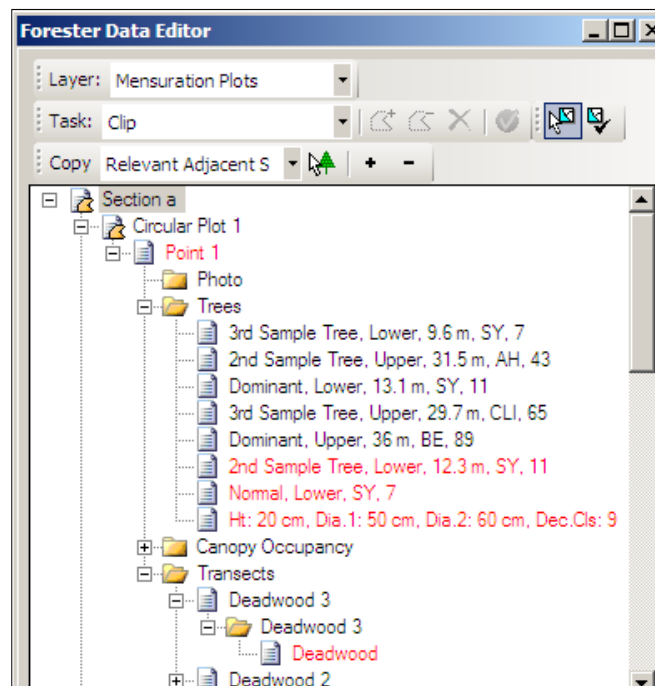


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66. Right-click on the Section name in the Forester Data Editor window and select "Show Invalid Items".



67. The Plot folders automatically open with the data expanded to show sources of error, which are highlighted in red font.

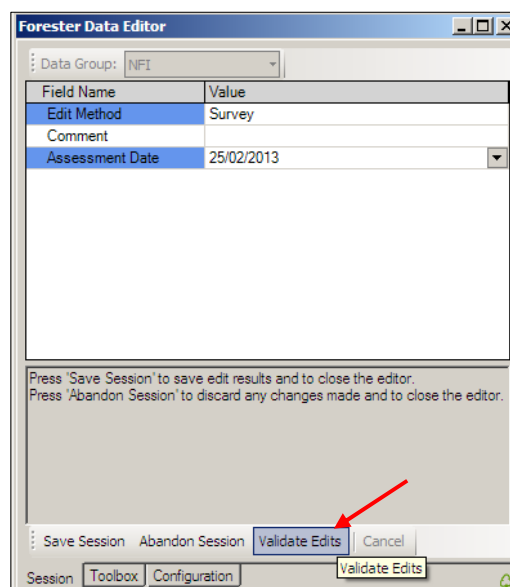


68. Click on anything displayed in red font to investigate the source of the error.
69. Correct the data so that the red font turns to black. Right-click on the Section name and select "Show Invalid Items" after each sequence of corrections.

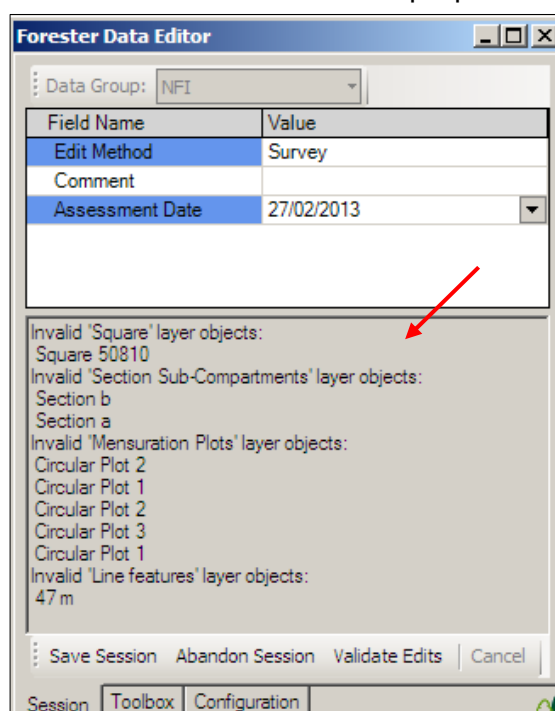
# NFI Survey Manual Chapter 2: Editing the NFI Sample Square in Forester

## 2.6.4 Using the “Validate Edits” tool

70. Surveyors MUST click on the “Validate Edits” button located on the Session tab at the bottom of the Forester Data Editor window before leaving a completed square to ensure all the validation checks are made. Note that the check for components matching plot trees is only carried out when using this button.



71. An error listing appears in the grey area at the bottom of the Forester Data Editor window. Use the other software validation tools to pinpoint the errors.





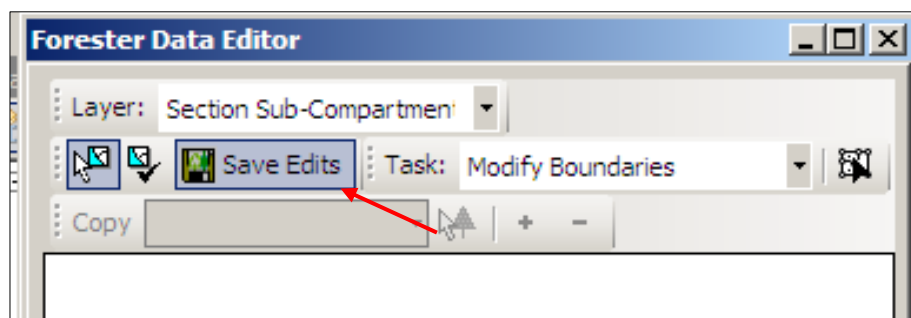
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## 2.7 Saving Edits

Surveyors are strongly advised to **save** edits at **regular** intervals to avoid risk of losing data. A number of events can occur in the field e.g. software failure, Toughbook failure, loss of battery power, which could potentially result in hours of extra work recapturing data or possibly repeating the entire survey. There are two ways of saving edits:

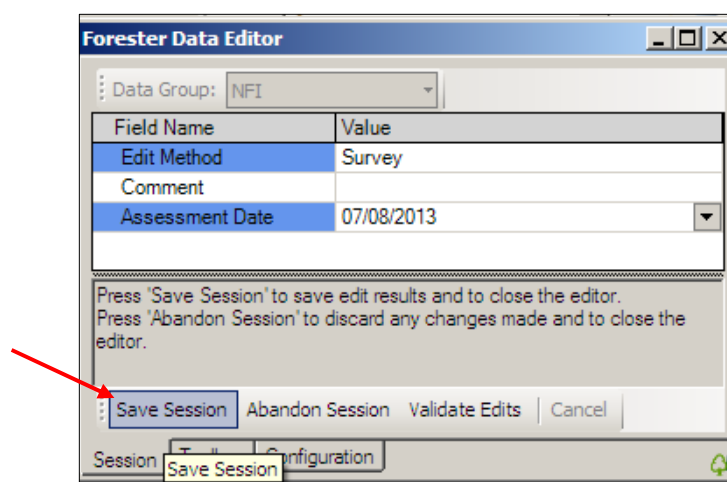
### 2.7.1 Using the Save Edits button

In the Forester Data Editor window, click on the Save Edits button to save the data **without** exiting the Forester Data Editor session.



### 2.7.2 Using the Save Session button

72. In the Forester Data Editor window, click on the "Save Session" button at the bottom of the Session tab to **save and exit** the Forester Data Editor session.



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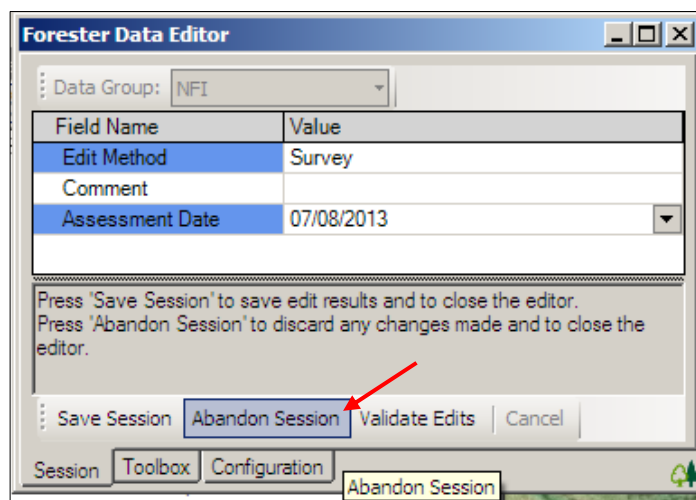
- 73. In the "Save Session?" box, click on the Yes button.
- 74. To resume editing, click on the "Forester Data Editor" button and start a new Forester Data Editor Session.



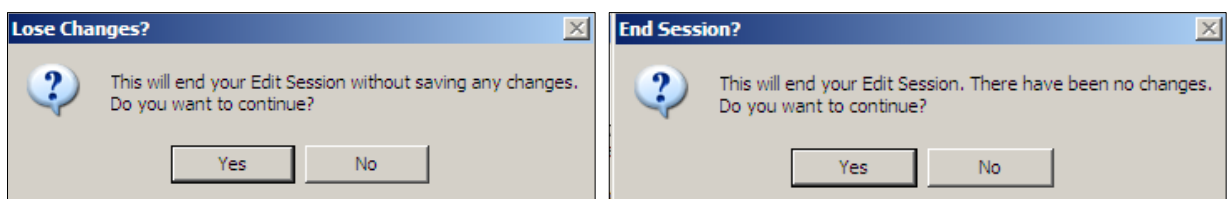
## 2.7.3 Abandoning the Forester Data Editor session

Sometimes it may be desirable to close the Forester Data Editor session **without** saving edits. To do this:

- 75. In the Forester Data Editor window, click on the "Abandon Session" button at the bottom of the Session tab.



- 76. In the "Lose Changes?" or "End Session?" box, click on the Yes button.



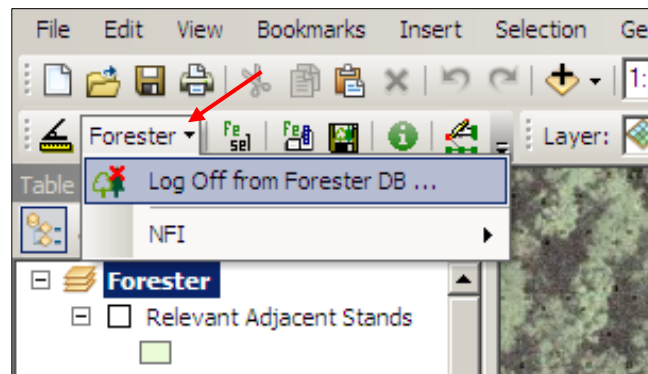


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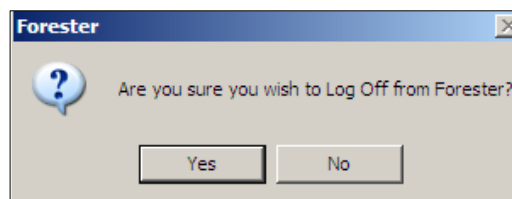
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## 2.8 Logging Off from Forester

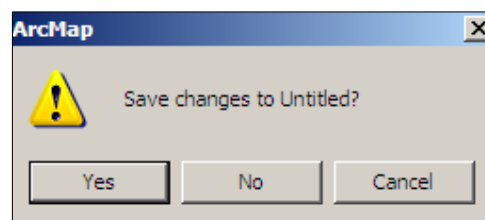
77. Click on the "Forester" button, and then select "Log Off from Forester DB...".



78. In the "Forester" box, click on the Yes button.



79. In the "ArcMap" box, click on the No button.



80. Close the ArcMap window.