Chapter 5: Section Boundary Mapping in the Field

Contents

5.0 Section Boundary Mapping in the Field

Some of the NFI Squares issued by the FC come with Section boundaries already mapped. The boundaries relate to the different Interpreted Forest Types and Interpreted Open Areas which collectively make up the NFI GB Woodland Map.

The boundaries have been mapped using desk-based aerial photograph interpretation, at a coarse scale, and so it is highly likely that modification to the boundaries will be required during the field data collection.

Always ground-truth any pre-defined Section boundaries and carry out edits as necessary. The following Chapter details how to:

- Modify Sections by moving/adding/deleting individual vertices.

- Merge Sections i.e. join two or more Sections together.

- Split Sections i.e. split a Section into two, smaller Sections.

- Reshape Section boundaries by drawing a new shape that the Section will then adopt as the boundary. The newly drawn shape needs to cross the existing Section boundary twice to be accepted.

- Slide boundary nodes i.e. adjust the node that sits at the intersection of two or more Sections; without this tool it would be fiddly and involve multiple reshape/modify operations.

The tools all help facilitate editing of shared boundaries in such a way that the Section boundaries do not overlap and do not have any white space in-between them. There is no single tool that does everything, hence the need for several specialist tools to do the edits.

It is very important to get Section boundary mapping is correct before starting to input mensuration plot or point data. If a Section boundary is changed after entering plot/point data, the software will, in some cases, automatically delete all the plots/points for all Sections sharing that boundary and the data will be lost.

5.1 Modify Section Boundaries

5.1.1 Select the Section boundary to be modified

In the Forester Data Editor window, select "Section Sub-Compartment" from the Layer drop down menu, and "Modify Boundaries" from the Task drop down menu. Then click on the "Modify topology tool" button to the right of the Task box.
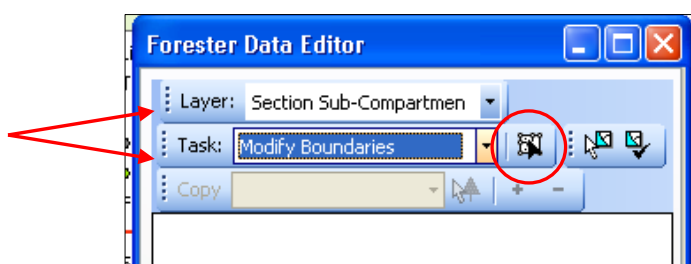

Left-click on the Section boundary to be modified and see it highlighted in blue. Double-click on the Section boundary and see the vertices displayed as tiny green squares. An "Edit Vertices" toolbar will also appear.
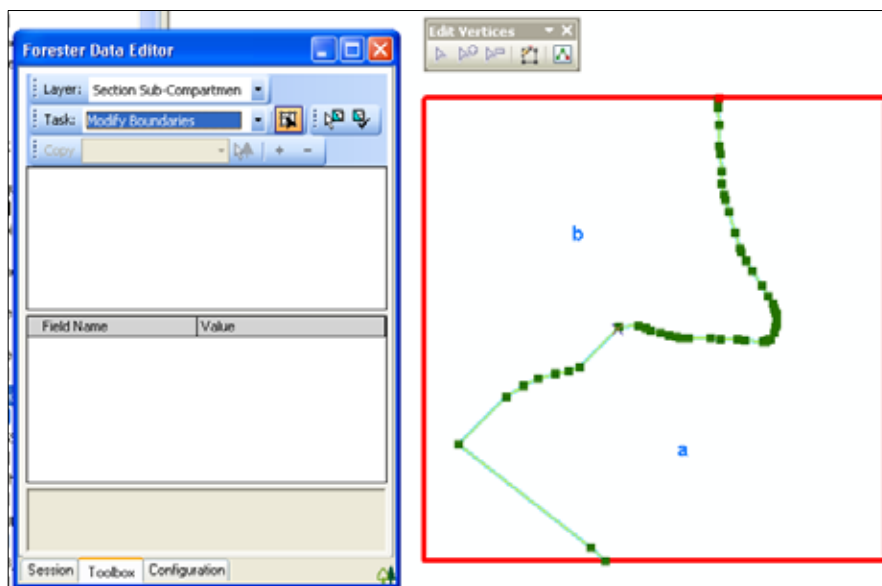
5.1.2 Move individual vertices

Click-and-drag individual vertices to their new positions. The modified Section boundary will be temporarily highlighted in yellow. Finish by clicking on the "Finish Sketch" button in the "Edit Vertices" toolbar, or by double-clicking away from the Section boundary.
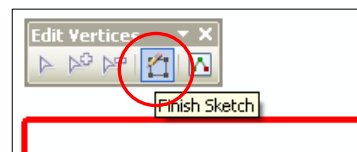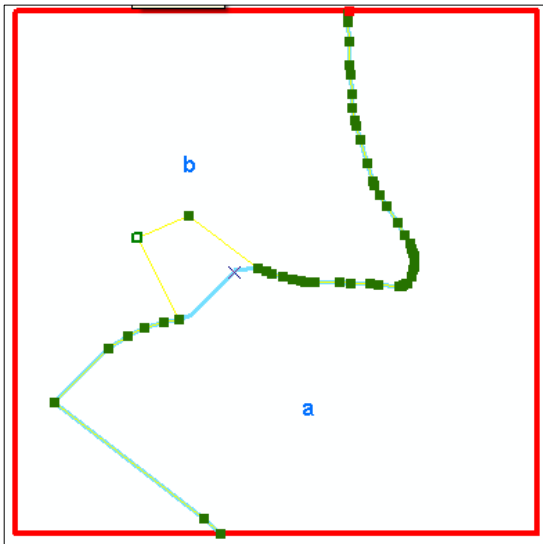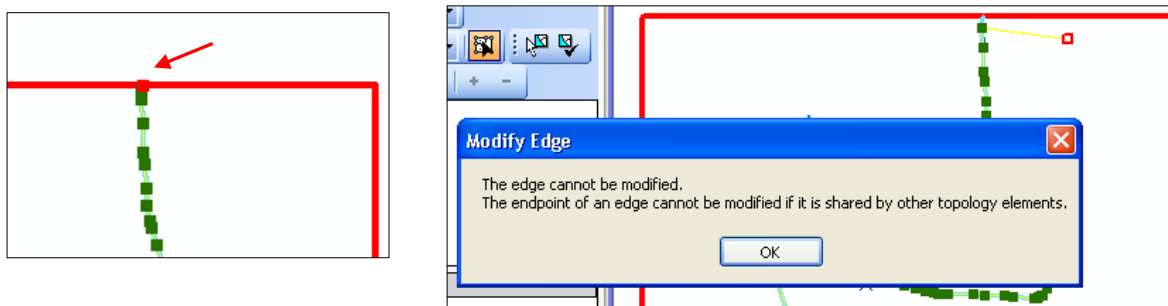

On the ArcMap toolbar, click on the "Clear Selected Features" button to get rid of the cross-hatching.
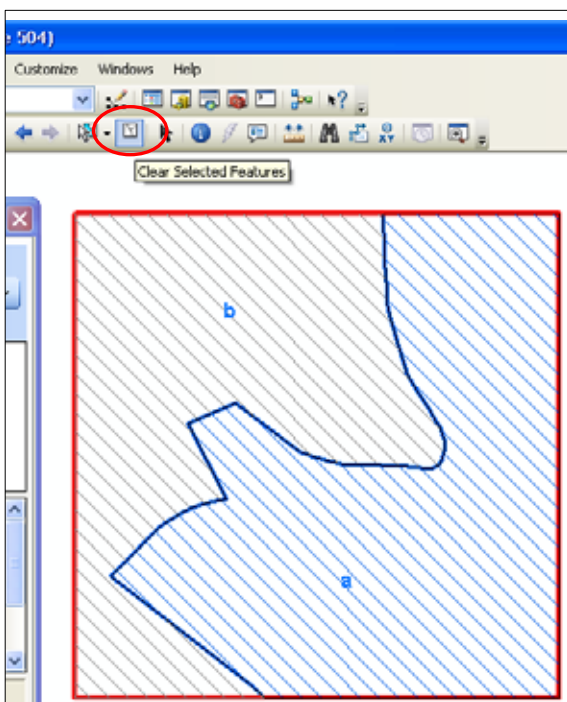
5.1.3 Moving nodes

Nodes are the little red squares that occur where a Section boundary intersects another Section boundary, or the Square boundary. They **cannot** be moved using the Modify Tool (a message box pops up stating this when trying to finish the operation).

Nodes **can** be moved using the Slide Node Tool**. See 5.5 Slide Section Boundary Nodes**, for instructions on how to do this.

5.1.4 Delete individual vertices

Right-click on the vertex to be removed, then select "Delete Vertex" from the pop-up menu. Finish by clicking on the "Finish Sketch" button in the "Edit Vertices" toolbar, or by double-clicking away from the Section boundary.
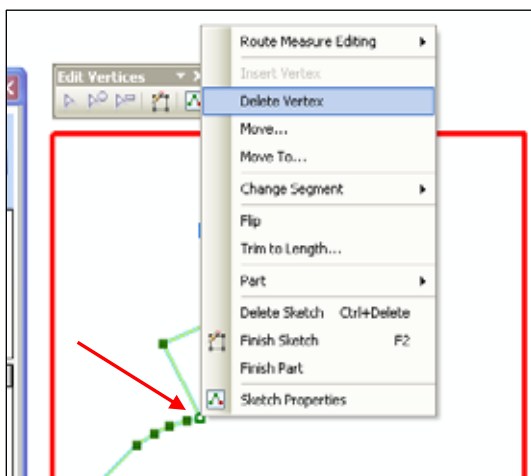
5.1.5 Insert individual vertices

Right-click on the Section boundary, at the point where a vertex is to be added, then select "Insert Vertex" from the pop-up menu. Currently unavailable (greyed-out) and to be reinstated at a later date.

5.1.6 Modifying Section boundaries after mensuration plots/points have been generated

Generally to be avoided, but it may be necessary to do this where, for example, during the course of navigating to and between mensuration plots, it becomes apparant that the Section boundary mapping is significantly adrift.

As long as the boundary modification does not result in any of the plots/points being transferred to a different Section, then the original set of plots/points is maintained, without loss of mensuration data already entered.

Where the boundary modification **would** result in any of the plots/points being transferred to a different Section, a message box will appear warning that the original set of plots/points for the affected Section(s) will be deleted if the modification is continued. If the decision is to continue with the modification, then a new set of plots/points to replace those that have been deleted must be generated. See Chapters 13.2 and 13.4 for instructions on how to do this.

In the example below, the original Section A plots are maintained because they are clear of the boundary modification, whereas the original Section B plots are deleted because at least one of the plot centres subsequently falls within Section A.
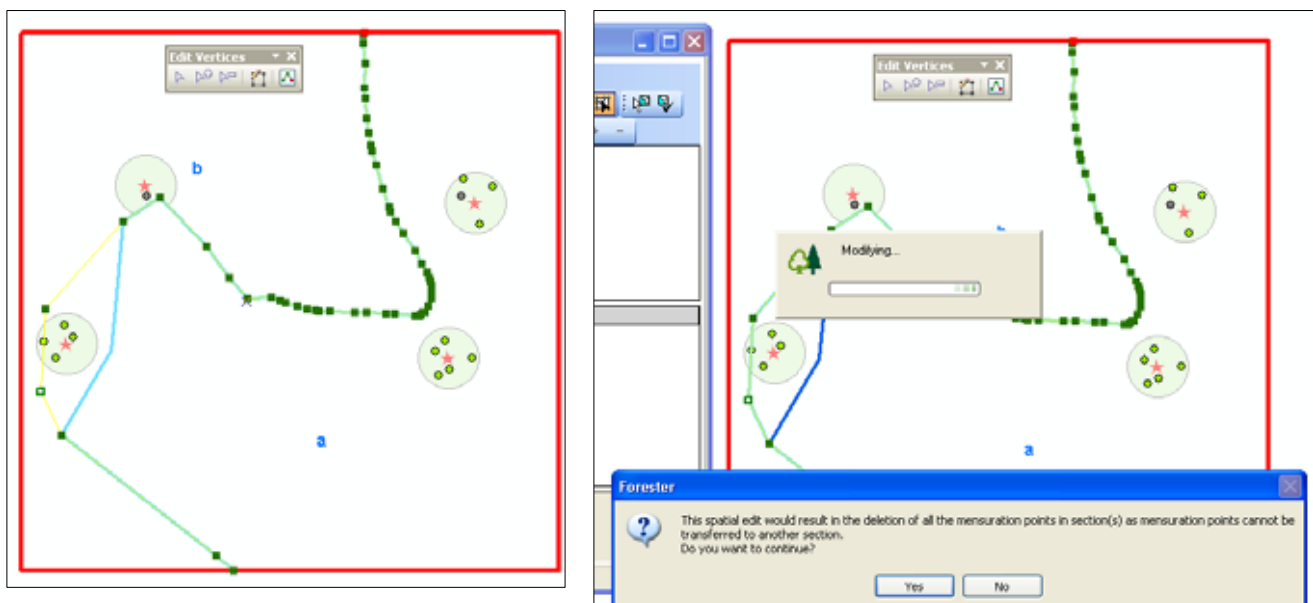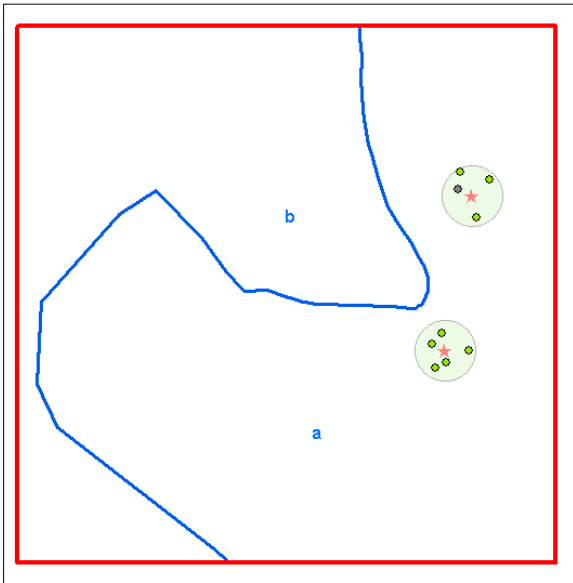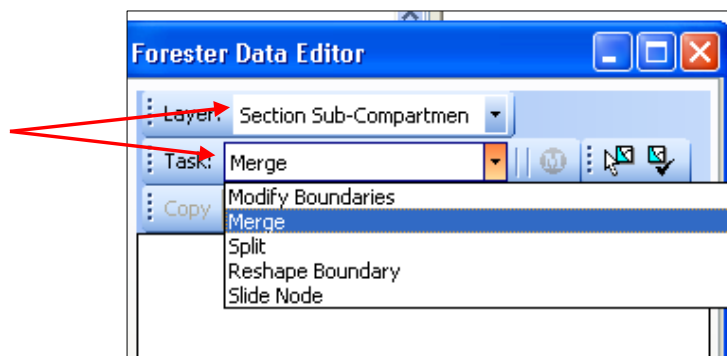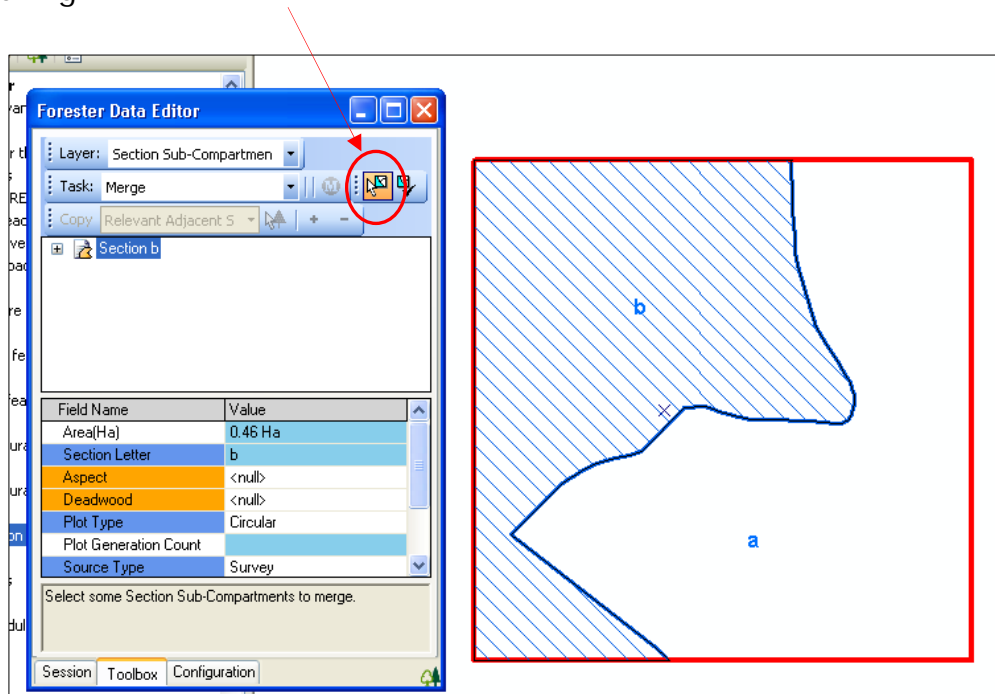
5.2 Merging Sections

In the Forester Data Editor window, select the "Section Sub-Compartment" from the Layer drop down, and "Merge" from the Task drop down menu.

Click on the "Select Features" button to the right of the Task box, then left-click **in** the first of the Sections that are to be merged. The Section is now highlighted in blue hatching.

On the keyboard, hold the Shift key down and left-click in the Section that is to be merged with the first Section. Both Sections are now highlighted in blue and grey hatching, and the Section names are listed in the Forester Data Editor window.
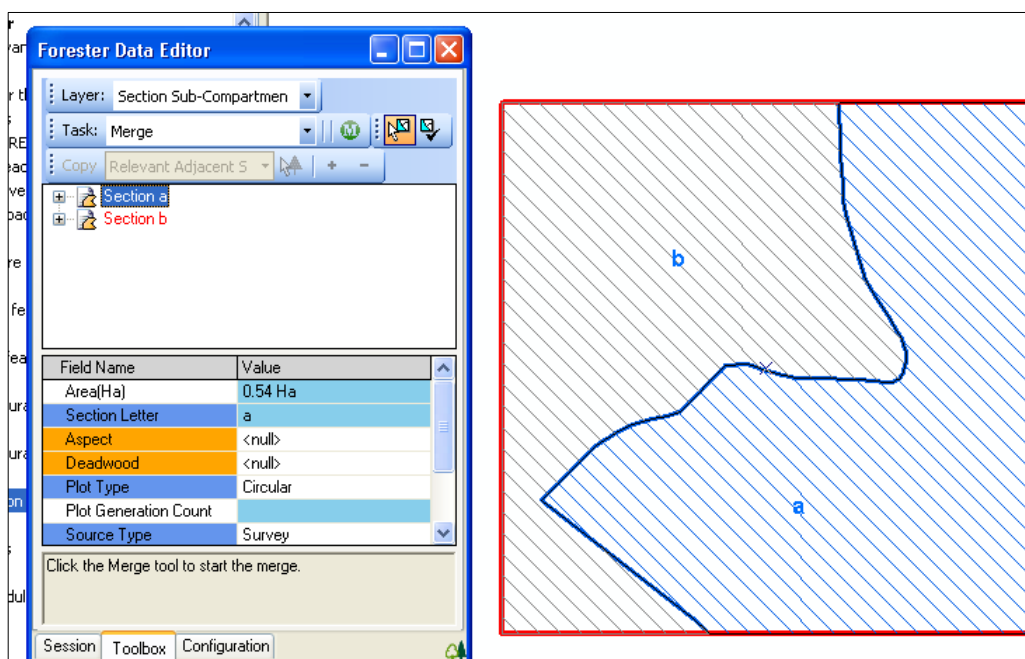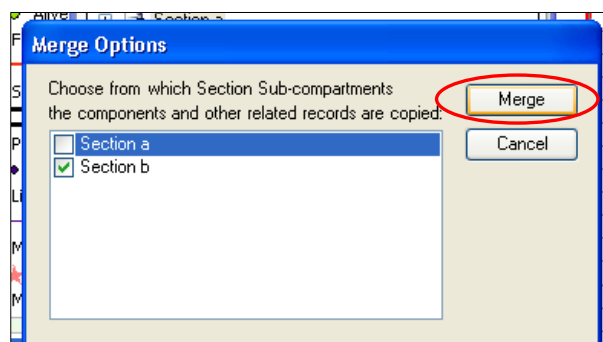
In the Forester Data Editor window, click on the green "Merge edit tool" button immediately to the right of the Task box. A "Merge Options" box appears.
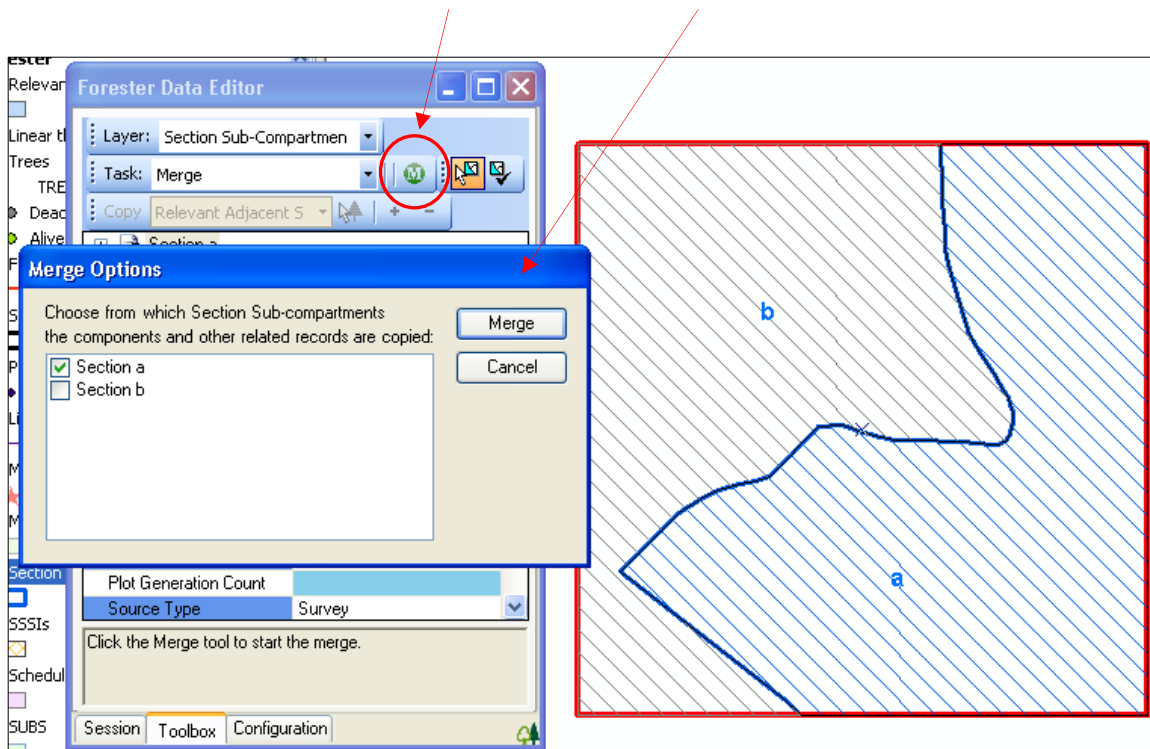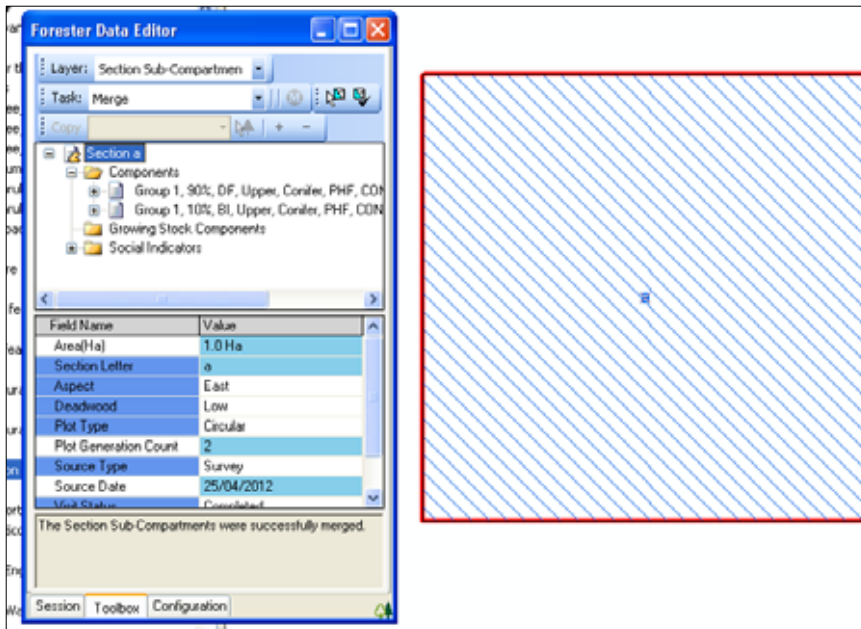

In the "Merge Options" box, place a tick against the Section(s) to copy data across from (obviously this is only relevant where the Sections already contain some Component data). Then click on the "Merge" button.

In the above example, Sections A and B will be merged into one, and the original Section B Component data will be copied across to the newly merged Section.


5.2.1 Merging Sections after mensuration plots/points have been generated

This will always result in deletion of the original set of plots/points within the Sections being merged, and therefore loss of any mensuration data entered prior to the merge. In such a case, a new set of plots/points **must** then be generated for the newly merged Section. See Chapters 13.2 and 13.4 for instructions on how to do this.
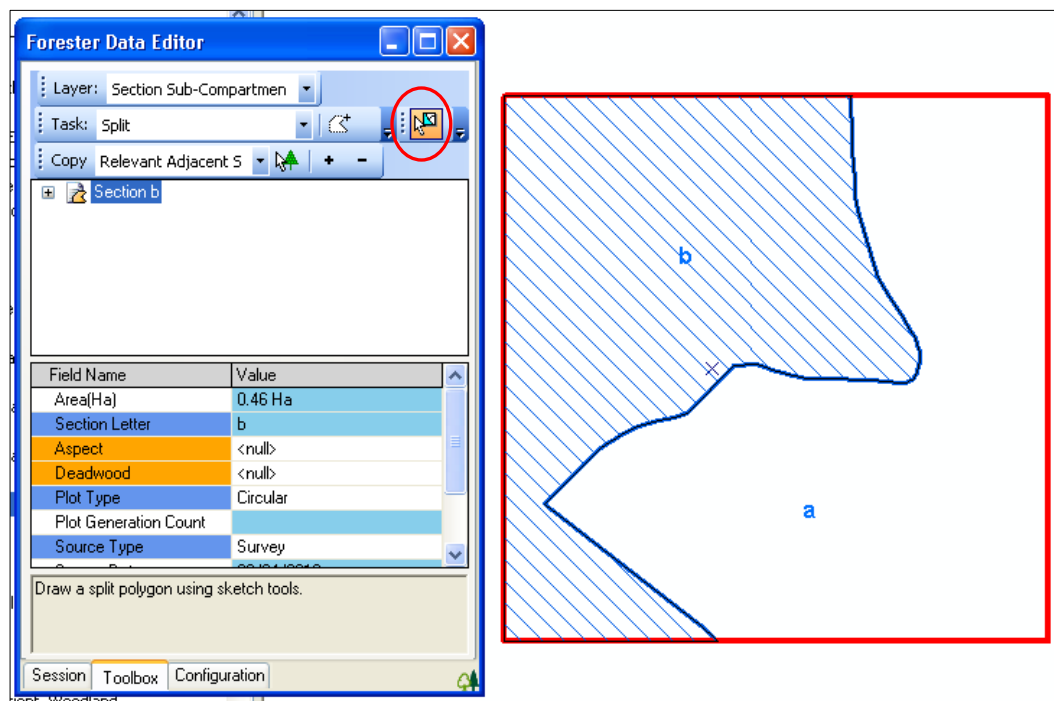
5.3 Splitting Sections

In the Forester Data Editor window, select "Section Sub-Compartment" from the Layer drop down menu, and select "Split" from the Task drop down menu.
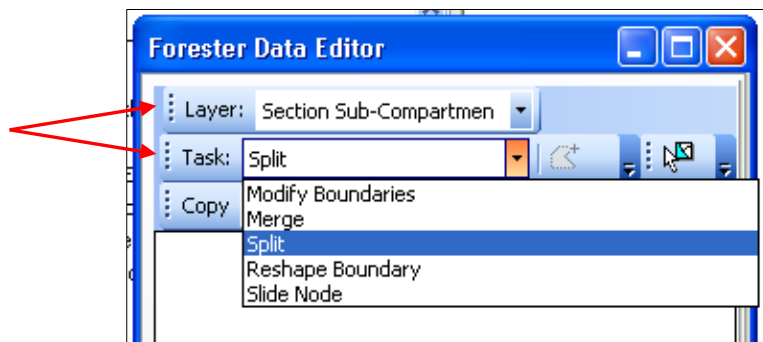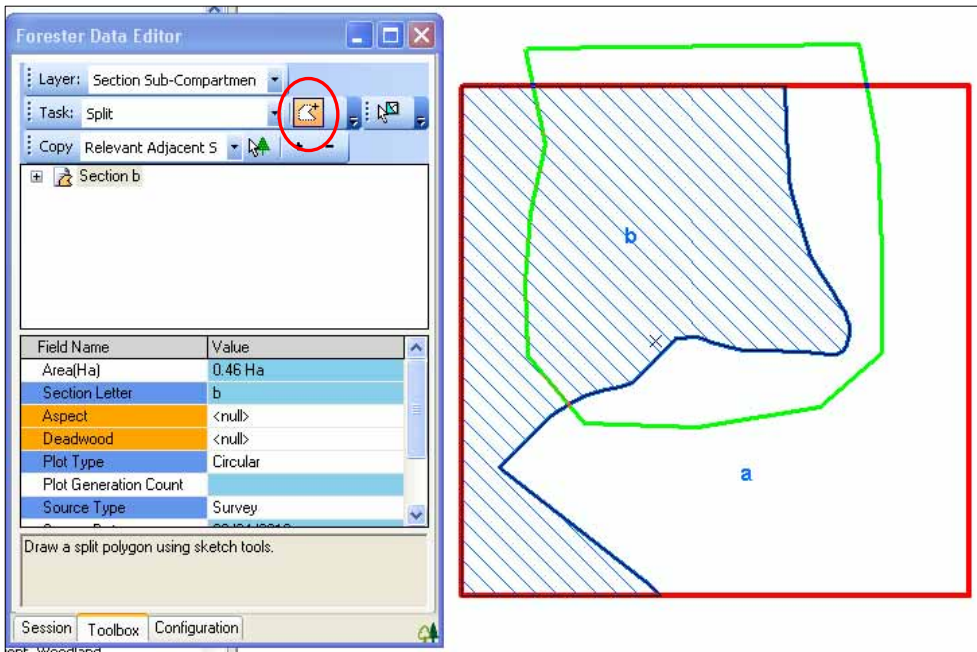

Click on the "Select Features" button to the right of the Task box, then left-click **in** the Section to be split. The chosen Section is now highlighted in blue hatching.

In the Forester Data Editor window, click on the "Add to Polygon Edit Tool" button immediately to the right of the Task box. Click around the area to be split off, starting and finishing outside the Section.
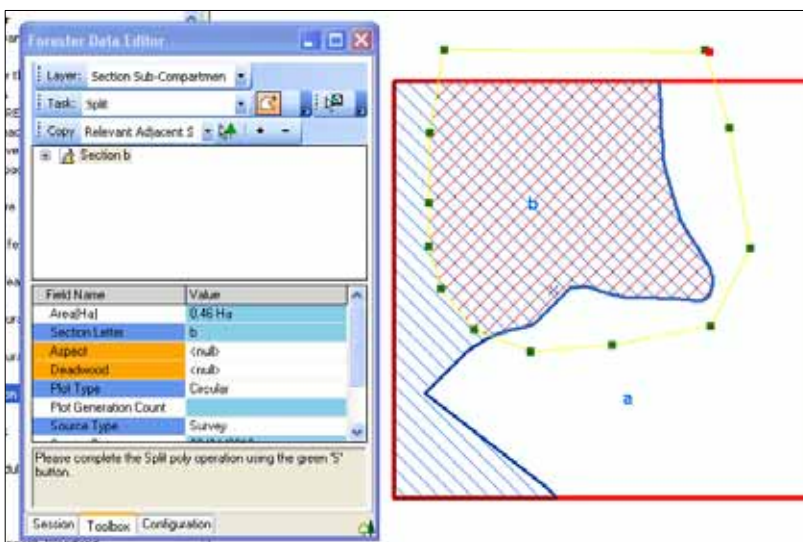
To re-draw the split, click on the "Select Elements" button on the ArcMap toolbar and have another go.

Double-click to finish the drawing. The new split-off Section is highlighted in red cross-hatching.

To complete the Split operation, click on the green "Split Edit Tool" button located to the right of the Task box. This button may be hidden if the Forester Data Editor window is too narrow, in which case click on the Split toolbar drop-down button (or simply widen the window by dragging the margins).
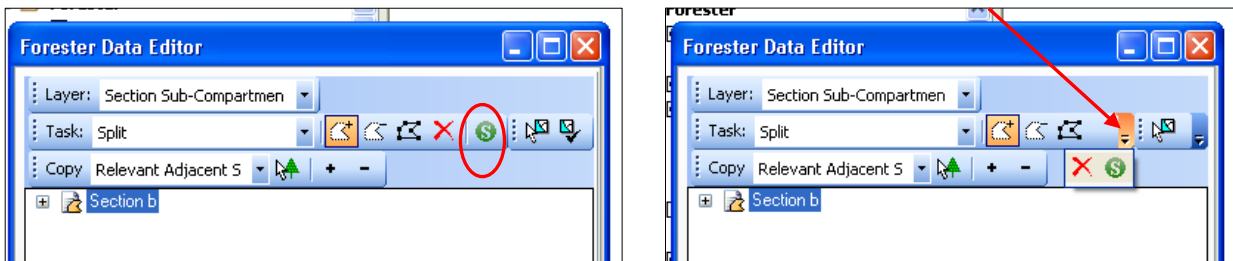

The software will ask whether any attributes and Components are to be copied to the new split-off Section. If "Yes", the Component data in the original Section will be copied across into the new Section, which means the bulk of the data entry has been completed, but it is **vital** to remember to **edit** the Component and sub-Component data in **both** Sections.

The software will perform the Split operation and the new Section will be highlighted in blue hatching.
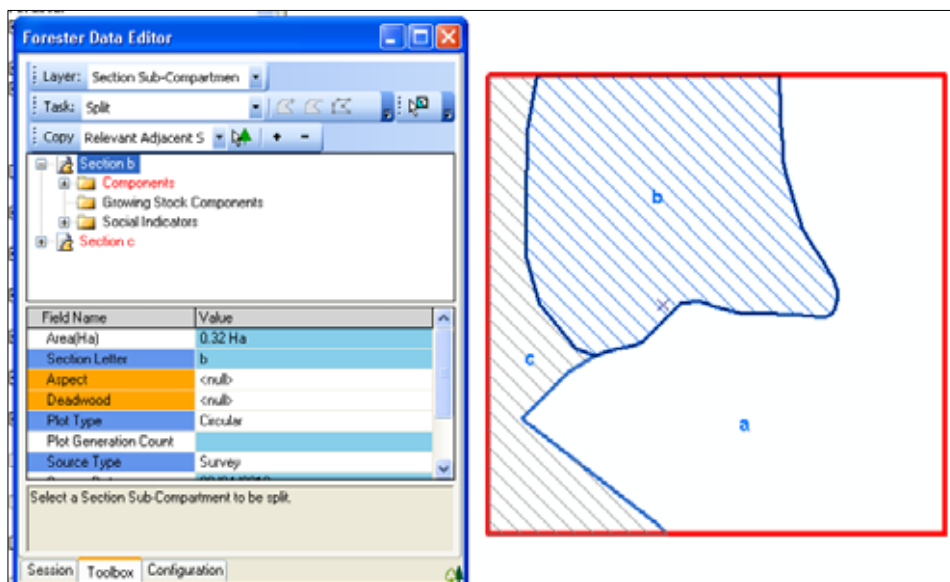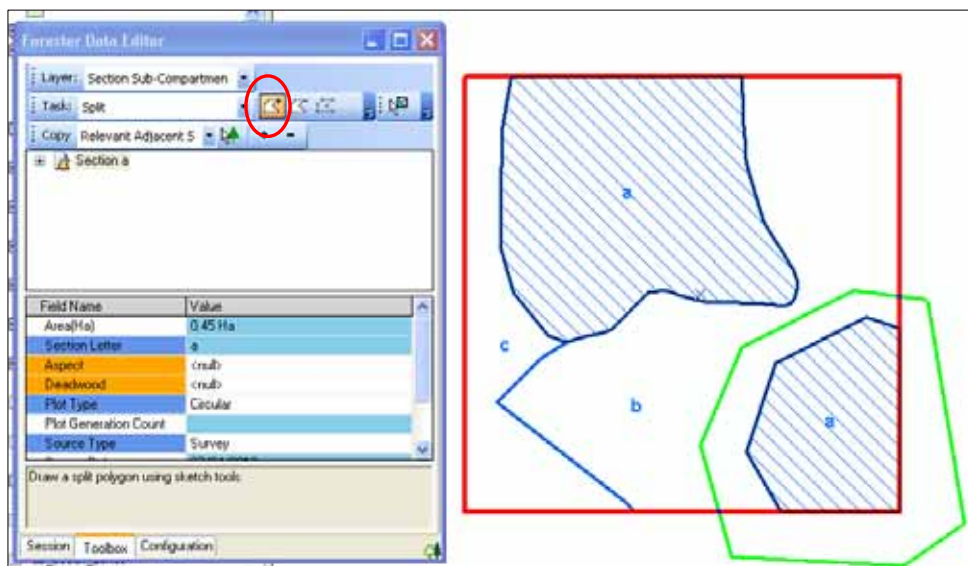

On the ArcMap toolbar, click on the "Clear Selected Features" button to get rid of the cross-hatching.
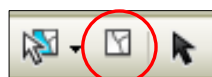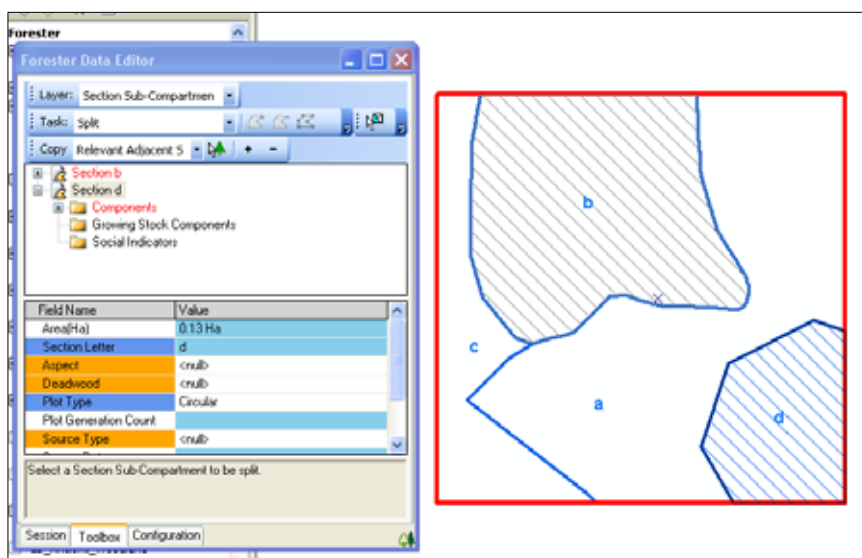
5.3.1 Exploding a multi-part Section

Follow the Split procedure as outlined earlier, click around the multi-part to be split off, starting and finishing outside the Section.

In this example, multi-part Section A is exploded into new Sections B and D.

## 5.3.2 Splitting Sections after mensuration plots/points have been generated

This will always result in deletion of the original set of plots/points within the Section being split, and therefore loss of any mensuration data entered prior to the split. In such a case, surveyors **must** then generate a new set of plots/points for the two new Sections. See Chapters 13.2 and 13.4 for instructions on how to do this.

5.4 Reshape Section Boundaries

In the Forester Data Editor window, select the "Section Sub-Compartment" from the Layer drop down menu, and "Reshape Boundary" from the Task drop down menu.
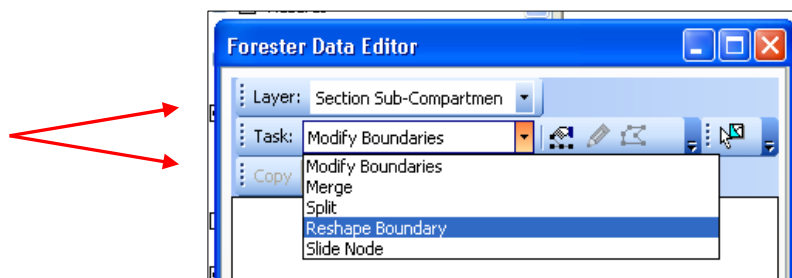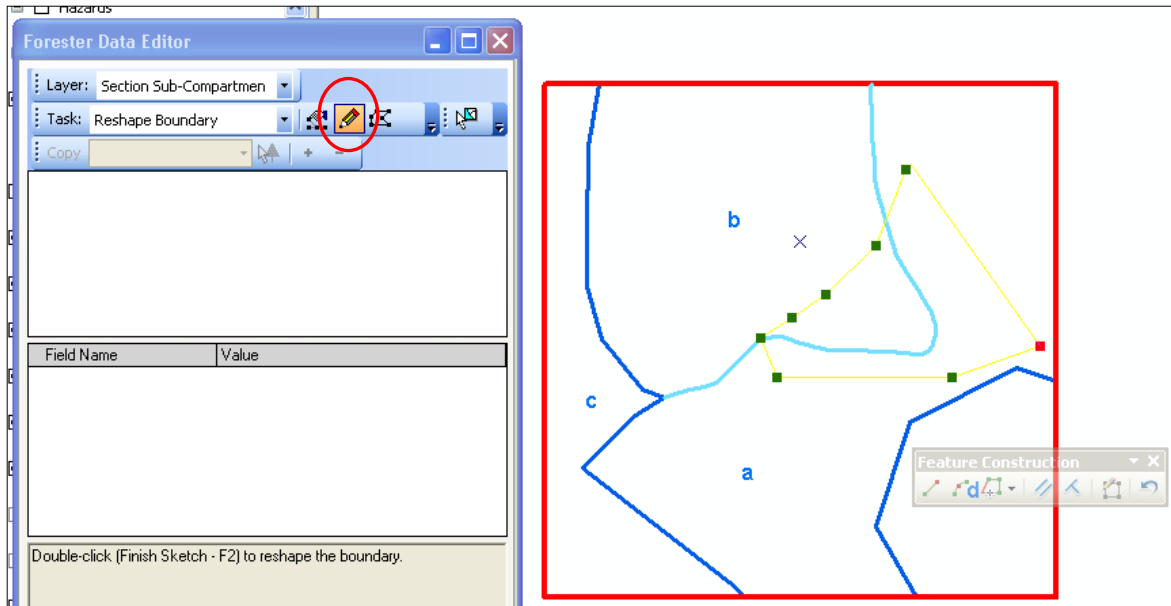

Click on the "Select Shared Boundary" button to the right of the Task box, then left-click on the Section boundary to be reshaped and see it highlighted in blue.
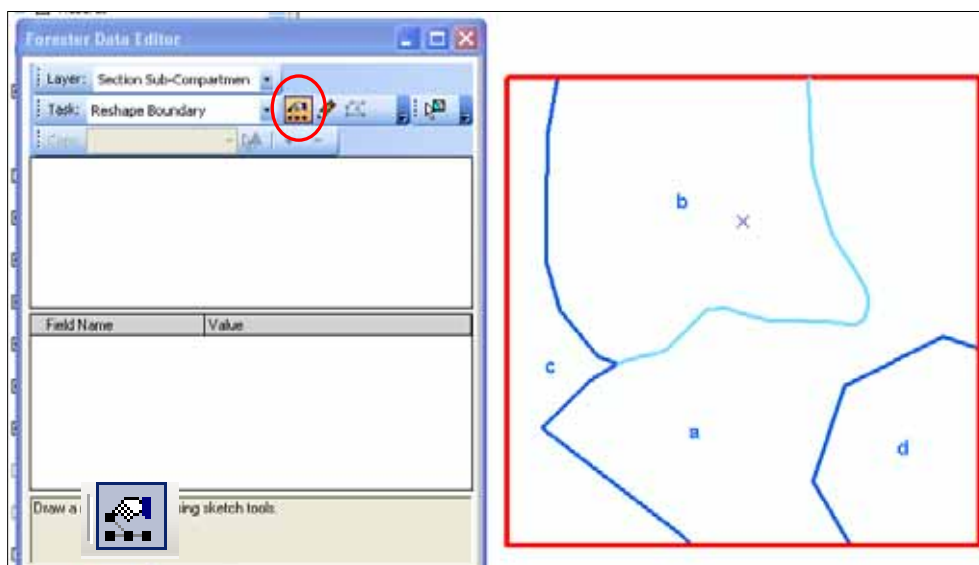
Click on the "Construct Edit Geometry" (pencil) button to the right of the Task box, and then click around the part of the boundary to be reshaped. The "Feature Construction" tool bar will appear and fade out.
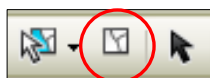

To amend the re-shape, press "Control and z" on the keyboard and this will undo the last vertex. Repeat until back at the start of the drawing.

Double-click to finish the drawing, or press F2 on the keyboard. The software will re-shape the boundary.
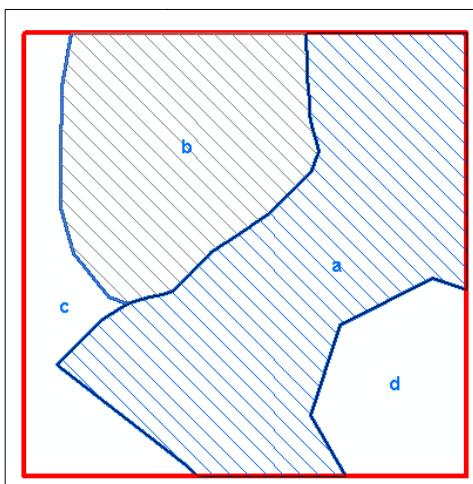
On the ArcMap toolbar, click on the "Clear Selected Features" button to get rid of the cross-hatching.
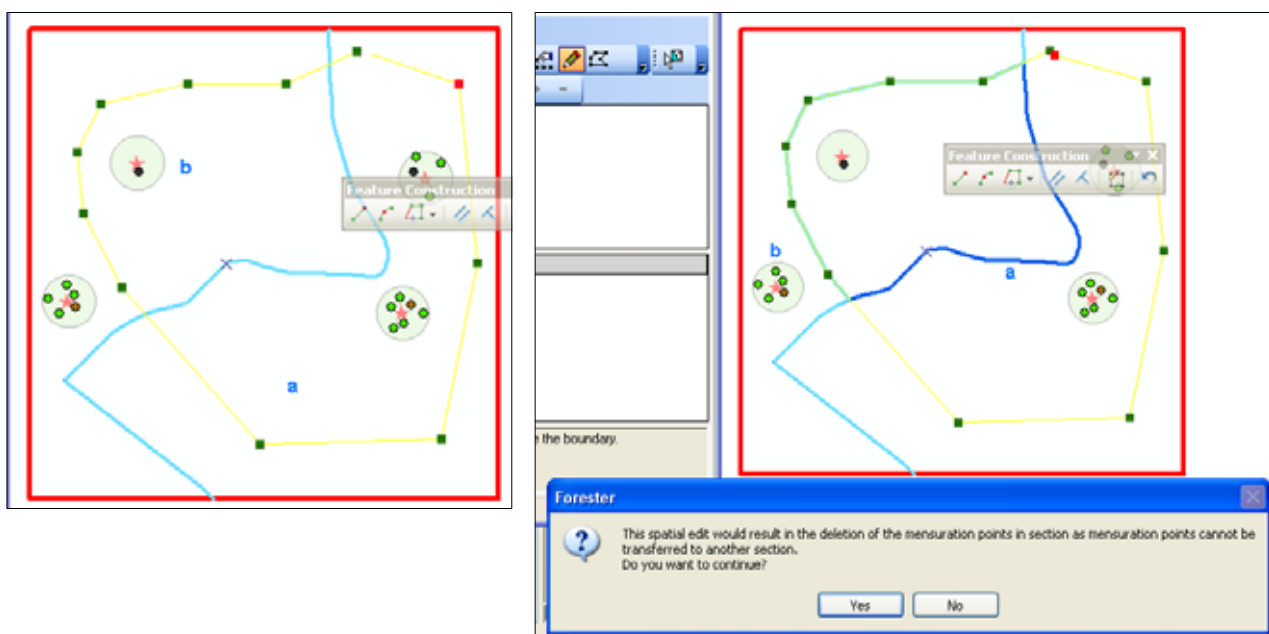
5.4.1 Re-shaping Section boundaries after mensuration plots/points have been generated

Generally to be avoided, but it may be necessary where, for example, during the course of navigating to and between mensuration plots, it is discovered that the Section boundary mapping is significantly adrift.
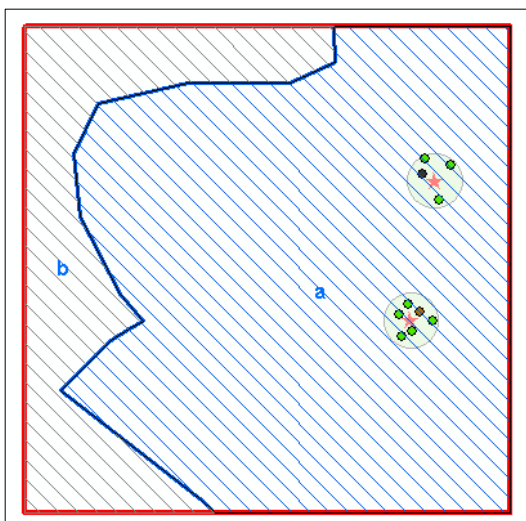
As long as the boundary re-shape does not result in any of the plots/points being transferred to a different Section, then the original set of plots/points is maintained, without loss of mensuration data already entered.

Where the boundary re-shape **would** result in any of the plots/points being transferred to a different Section, a message box will appear warning that the original set of plots/points for the affected Section(s) will be deleted if re-shape is continued. If the decision is to continue with the re-shape, a new set of plots/points **must** be generated to replace those that have been deleted. See Chapters 13.2 and 13.4 for instructions on how to do this.

In the example below, the original Section A plots are maintained because they are clear of the boundary modification, whereas the original Section B plots are deleted because at least one of the plot centres subsequently falls within Section A.

5.5 Slide Section Boundary Nodes

5.5.1 What are Section boundary nodes?

Nodes mark the point where a Section boundary intersects another Section boundary or the Square boundary. When using the Modify Tool to amend a Section boundary, the nodes are displayed as little red squares (**see Chapter 5.1 Modify Section Boundaries**).

5.5.2 Sliding boundary nodes

Nodes can be moved by sliding them to another point along the Section or Square boundary, using the Slide Node Tool.

In the Forester Data Editor window, select "Section Sub-Compartment" from the Layer drop down menu, and "Slide Node" from the Task drop down menu.
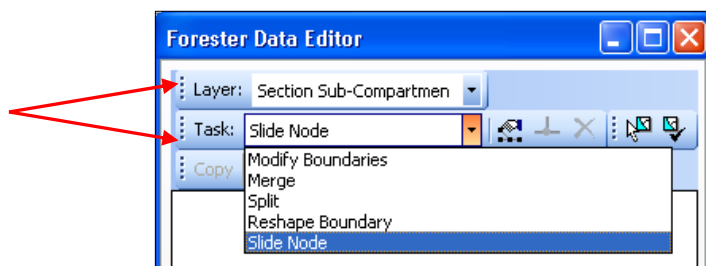
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Click on the "Select Shared Boundary" button to the right of the Task box, and then left-click on the Section boundary that contains the node to be moved. See the boundary highlighted in blue.
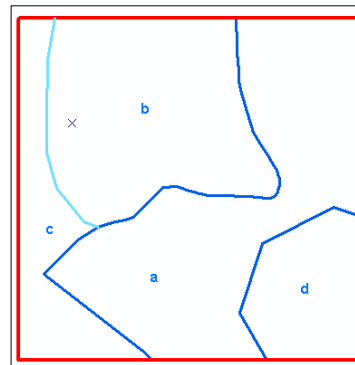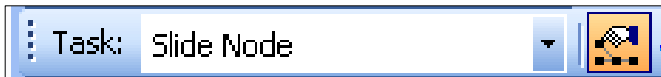
Click on the "Slide Node Edit Tool" button to the right of the Task box, and then run the cursor along the Section boundary to the point where the node is located.
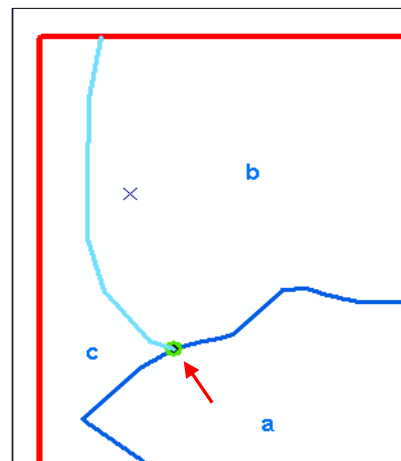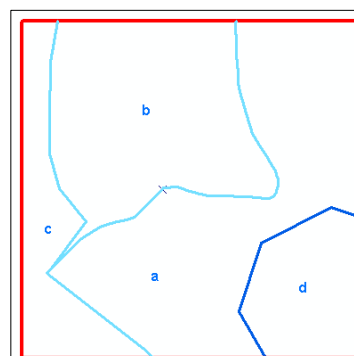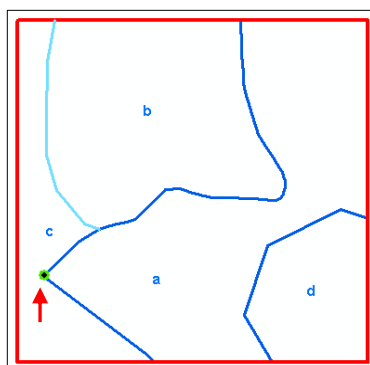

The cursor will change from a No Entry sign to this symbol.

Click on the node and see it turn green.

Slide the node along the Section boundary to the point where it is to be relocated. Double click to finish the slide operation. The software will update the Section boundary.

Use the Modify Tool to move the Section boundary vertices, as required**. See Chapter 5.1 Modify Section Boundaries.**

5.5.3 Sliding Section boundary nodes after mensuration plots/points have been generated

This will **always** result in deletion of the original set of plots/points within the Sections sharing the amended boundary, and therefore loss of any mensuration data entered prior to the slide node operation. In such a case a new set of plots/points **must** be generated for the affected Sections. See Chapters 13.2 and 13.4 for instructions on how to do this. In the example below, sliding the node at the point where the Section A/B/C boundaries intersect has resulted in the Section C plots being deleted.