

# 14.0 Stump Assessment Procedures

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## 14.0 Overview of Stump protocol

### 14.1. New squares

#### 14.1.1 Clearfell

For clearfell sites count the number of stumps and record the total against plot. Map two stump locations within the plot (as per protocol to avoid bias in selection), measure and attribute accordingly.

#### 14.1.2 Thinning

Count number of stumps and record against plot. Map two stump locations within the plot (as per protocol to avoid bias in selection), measure and attribute accordingly.

## 14.2 Stump Assessments

### 14.2.1 Definition

A stump is defined as a part of a tree stem that still has roots attached to the ground, is less than 1.3m in height and has no visible live shoots. Minimum diameter of the stool/stump is 4cm.

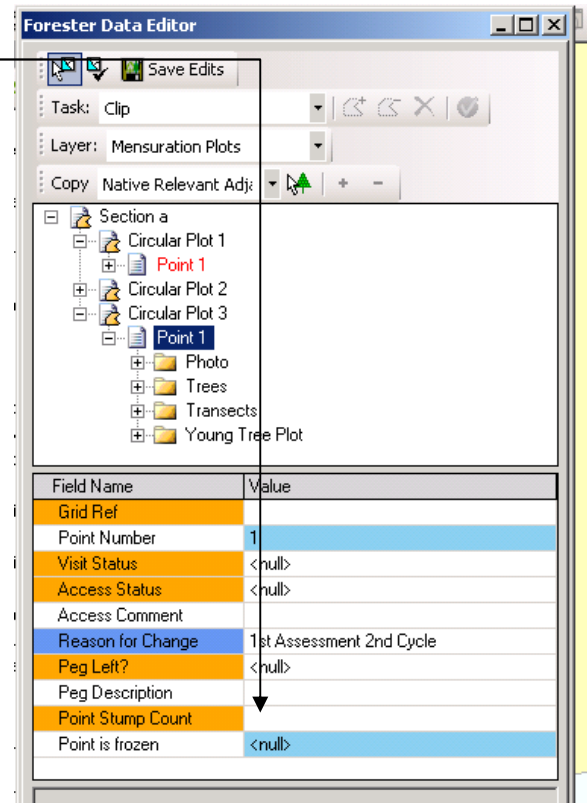
Where there is some ambiguity over whether a stump is still a stump or not (e.g. a moss covered mound) surveyor discretion is allowed.

Coppice stools – assess the stool and not individual stems connected to it. Assess to the outside of the stool.

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## 14.3 Circular Plots (new squares)– Stump Assessment

- A stump count is undertaken for each circular plot within a Section.
- The number of stumps within a plot is recorded under 'Point Stump Count' at circular plot point level in the software, for that particular plot.
- Attribute data is collected for two stumps within the plot and their positions mapped.
- If no stumps exist or if only one stump exists then a note to that effect should be made under 'Note' at the circular plot level in the software, for that particular plot.
- The first stump to be mapped and recorded should be the one nearest the plot centre
- The second stump to be mapped and recorded is the 3<sup>rd</sup> nearest to the plot centre.



### 14.3.1 Stump Counts – Circular Plots and Whole Section points

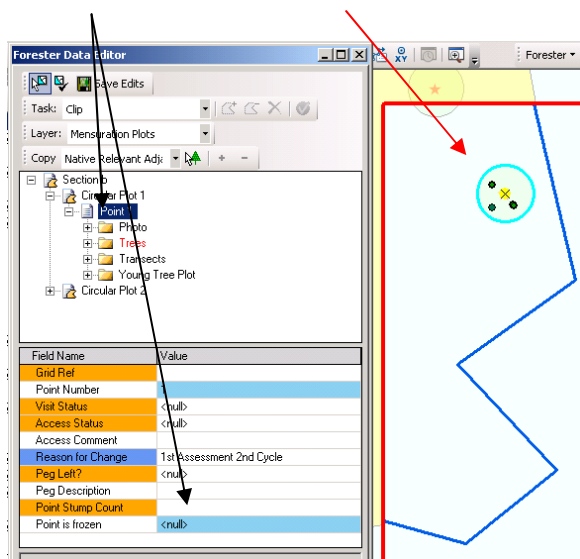
The assessment of stumps for Circular Plots and Whole Section Points is the same. At the Circular Plot level, or Section level for Whole Section plots, **a Stump Count is required for all stumps within 5.64m of the plot centre/Point.**

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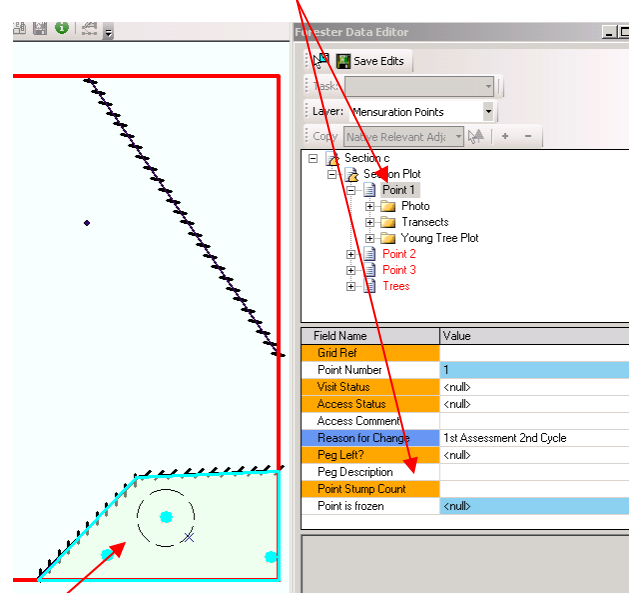
## 14.3.2 Stump data entry

The images below show where the stump count is to be entered for Circular plots and Whole Section Points. This is repeated for all plot/s points within a Section.

### Circular plots



### Whole Section plots



Note how the software draws a circle around the Point to be assessed to help guide surveyors.

Point Stump Count:

Enter total number of stumps, including sample stumps, within 5.64m radius of plot centre/point.

Where there are no stumps within a given category enter '0'.

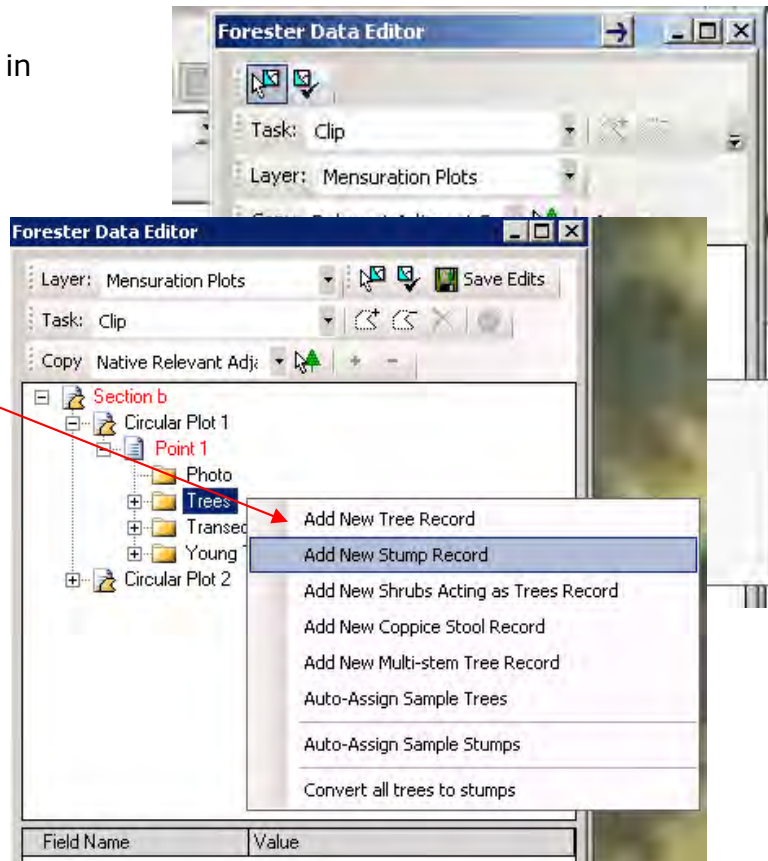
Where the stump plot crosses a Section boundary the stumps are only assessed within the Section the plot centre/Point is allocated to. Where the stump plot crosses a Square boundary the stumps can be assessed outside the Square as long as any such area is a continuation of the Section.

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## 14.3.3 Mapping & Assessing nearest stump to plot/point centre

There are two ways to add stumps in Circular and Whole Section plots:

- 1) Right click on the Trees folder to get a list of options including Add New Stump Record



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OR

2) Click on the Tree Type field within the Normal tree folder to get a list of options including Stump.

The screenshot shows the 'Forester Data Editor' interface. The 'Task' is 'Clip' and the 'Layer' is 'Mensuration Plots'. The 'Copy' dropdown is set to 'Relevant Adjacent 5'. The tree structure shows 'Section b' containing 'Circular Plot 1', 'Point 1', 'Photo', 'Trees', 'Normal', 'Transects', and 'Young Tree Plot'. The 'Normal' folder is selected, and the 'Tree Type' field is open, showing a list of options: 'Tree', 'Frozen Stump', 'Tree', 'Stump', 'Coppice Stool', 'Coppice Stem', and 'Multi-stem tree'. The 'Stump' option is highlighted. Below the tree structure is a table with the following data:

Field Name	Value
Type	Tree
Tree Type	<null>
Species	Shrubs acting as Trees
DBH(cm)	Tree
Tree Alive?	Stump
Storey	Coppice Stool
Component Group	Coppice Stem
Total Height(m)	
Excessive Lean	<null>
Windsnapped	<null>

At the bottom of the window, it states: 'Minimum DBH for a tree record is 4!'.

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Fill out the Data Fields as required:

**Table 14 - 1: Stump Data Fields**

<b>Data Field</b>	<b>Options</b>	<b>Comments</b>
Location		<p>1<sup>st</sup> assessment square:</p> <ul style="list-style-type: none"> <li>• Map stump closest to plot centre point and</li> <li>• Its 3<sup>rd</sup> nearest neighbour.</li> </ul> <p>If there &lt;4 stumps in the plot map the one nearest to plot centre/point <b>and</b> the one furthest away from it.</p>
Type	<ul style="list-style-type: none"> <li>• Stump</li> <li>• Coppice Stool</li> </ul>	Choose Stump or coppice stool as appropriate
Stump Type	<ul style="list-style-type: none"> <li>• &lt;Null&gt;</li> <li>• Normal stump</li> <li>• Sample stump</li> </ul>	Normal stumps only apply to Re measure squares
<b>If 'Sample stump' is chosen for 'Stump Type' surveyors will need to fill in the following</b>		
Species Group	<ul style="list-style-type: none"> <li>• Spruce</li> <li>• Pine</li> <li>• Broadleaved</li> <li>• Other Conifer</li> </ul>	Choose the class the stump fits into.
Stump height (cm)	Free text to 1 decimal place	Height – this is the mean height of the stump in cm. On a slope assess mid-way up the slope.
Diameter 1	Free text to 1 decimal place	Diameter 1 – assessed North to South. Estimation may be necessary if the stump is covered in mosses (do not disturb the vegetation on the stump)
Diameter 2	Free text to 1 decimal place	Diameter 2 - assessed East to West
Decay Class	<ul style="list-style-type: none"> <li>• 8</li> <li>• 9</li> </ul>	<ul style="list-style-type: none"> <li>• Fresh stump, still fairly solid</li> <li>• Older, partially or almost fully rotted stump.</li> </ul> <p>See <b>Chapter 20.0</b> for more details</p>
Coppice Stool	<ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> </ul>	Is this a coppice stool?

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	<ul style="list-style-type: none"> <li>• Not surveyed</li> </ul>	
Good Felling Practice?	<ul style="list-style-type: none"> <li>• Null</li> <li>• Good felling practice/silviculture</li> <li>• Bad felling practice /exploitative</li> <li>• Not discernable</li> <li>• Not felled/natural process</li> </ul>	See below.

At the plots, where thinning or felling has occurred you will need to assess the stumps to ascertain if good felling / silvicultural practice was applied at time of felling. What we are trying to ascertain is the amount of illegal felling by 'amateur' operators, who are generally after firewood. This is a recent phenomenon driven by the increase in fuel prices and many woods are being damaged by exploitative and unregulated felling, often by people who are not trained or schooled within the woodland management sector.

### **Signs of bad felling practice are:**

- Stumps without felling hinges or 'mouth' cuts.
- Felling hinges which broke unevenly - with long or wide 'spikes' of timber protruding.
- High stumps (unless processor harvested).
- Several 'hacking' chainsaw cuts as opposed to one smooth back cut (or two even cuts in larger trees).
- Felling by axe or other blade.
- Removal of whole tree by pulling or pushing with an excavator or tractor.

### **In addition, when classifying contextual evidence should be taken into account:**

- Excessive skimming of tree bark on remaining trees.
- Erratic or poor choice of tree removal in terms of good silviculture.
- Scale of operation (two or three trees taken within a stand leaving 'hacked' stumps, is unlikely to be a planned operation).



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## 14.4 Re measure squares

### 14.4.1 Clearfell

**For old clearfell sites**, which were existing at the time of the last survey, the old stump count will be presented (without differentiation into size classes). The field will be called 'Previous Survey Stump Count' and will be non-editable. The previous number of stumps will be set against the plot.

Check this number of stumps against your own assessment. Record your own count against the 'Point Stump Count field' at the point level. If the two are different remove or add sample stumps as appropriate. If a lone tree recorded in the previous survey has since been felled, keep the tree record and change the 'type' to 'stump'.

Re measure squares require two sample stumps. One will have been selected, mapped and assessed in the first cycle, you will need to add one other. Create one new stump record and map that, so that two sample stumps exist – measure and attribute each accordingly.

**For new clearfell sites** which have occurred since the 1st cycle, you will need to record/map that each tree has been felled and is now a stump. You can do this two ways; either press the 'fell all' button and this will be done automatically fell each tree for you, or manually change the 'type' field to 'stump' against each tree.

It is important to maintain continuity between the tree and stump records. To achieve this you will need to convert the 'once' standing trees to felled stumps by changing tree type to 'stump'

To do this automatically right click on the tree folder in the plot layer and choose the 'Convert all trees to stumps' option. At the circular plot level all trees will be converted to stumps and the 2 sample stumps auto-allocated.

The system will create stumps accordingly; setting most to 'normal' stump type (which have no attributes to measure or record) and the system will then select two sample stump locations within the plot. You will need to measure and attribute the sample stumps accordingly.

If a stump from the first cycle already exists (for example from a previous thinning) this will also be included as a candidate for selecting the sample stumps.

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If the sample stump from the first cycle has been removed on the ground or has decayed away, delete that from the plot, recording the reason for change and choose another stump and use that as a sample stump.

Note for Whole Section plots – there is no Convert all stumps tool and the manual method will be required.

Note for section data - you can automatically 'fell' all your section components in a clearfell situation, by right clicking on the component folder and selecting 'Fell all'.

## 14.4.2 Thinning

Previous stumps from the 1st cycle will be recorded against the count at plot level (field will be called 'Previous Survey Stump Count' and will be non-editable). Where no trees have been thinned or felled since the last survey create and map one new stump and map its location so that two sample stumps exist – measure and attribute accordingly.

Make your own count of stumps and record your own count against the 'Point Stump Count field' at the point level.

Where trees have been thinned / felled since the first cycle you need to observe and record this. It is important to maintain continuity between the tree and stump records. To achieve this you will need to convert the 'once' standing trees to felled stumps by changing tree type to 'stump'.

Do not delete tree records then create new stump records, this will break continuity in assessment and will take you more time.

The system will select two stump locations within the plot, measure and attribute these accordingly.

Any 'old' stumps not recorded in the previous survey through surveyor error should be created now and mapped and the value of 'surveyor error' added against them.