

# Chapter 15: Young Trees Assessments

## Contents

Contents .....	1
15.0 1 <sup>st</sup> Assessment and Re-measure plots .....	2
15.1 Young Trees Definition .....	3
15.2 Young tree circular plots .....	3
15.3 Young tree transects (plot/point 1 of Re-measure squares only) .....	7
15.3.1 Location of Transect .....	8
15.3.2 Installing Transect Line (flat ground) .....	9
15.3.3 Transects on slopes >5° .....	10
15.3.4 Transect sizes .....	11
15.3.5 Leaning trees .....	11
15.3.6 Coppice trees .....	12

## 15.0 1<sup>st</sup> Assessment and Re-measure plots

The work flow between 1<sup>st</sup> assessment plots and re-measure plots differs slightly with respect to **young tree** assessments. This is because whilst the young tree transect data collected in the first cycle was very useful it is a slower methodology compared to plot based assessments.

Therefore over the course of the 1<sup>st</sup> to 3<sup>rd</sup> 5-year assessment cycles of the NFI, assessments will move from being solely transect based (1<sup>st</sup> cycle) to being solely plot based by the 3<sup>rd</sup> cycle. The 2<sup>nd</sup> cycle will bridge the two approaches by using both.

**1<sup>st</sup> assessment squares:** the following assessments are made at all plots/points:

- Young tree (sapling and seedling) circular plots at all plots/points

**Re-measure squares:** the following assessments are made:

- Transects are [re-assessed at plot/point 1](#) only.
- Young trees circular plots are [assessed at plots/points, 2 and 3](#).

**Note that if young trees are found in a plot then each species and class should also have a corresponding Component in the Section.**

## 15.1 Young Trees Definition

Young trees are all trees **<4cm DBH** and are divided into two classes:

1. Seedling – any tree below 50cm height
2. Sapling – any tree >50cm tall and <4cm DBH

## 15.2 Young tree circular plots

At each Circular Plot/Point two circular plots are required.

**Note that if young trees are found in a plot, each species and class should also have a corresponding Component in the Section.**

The Young Tree plots are divided into two types:

- Seedling plots (trees <50cm height) – 1.78m radius plot
- Sapling plots (trees  $\geq$ 50cm height and < 4cm DBH) – 2.52m radius plot

5.64m radius Circular mensuration plot

Centre of Circular mensuration plot/Whole  
Section Plot Point

Seedling plot (1.78m radius)

Sapling plot (2.52m radius)

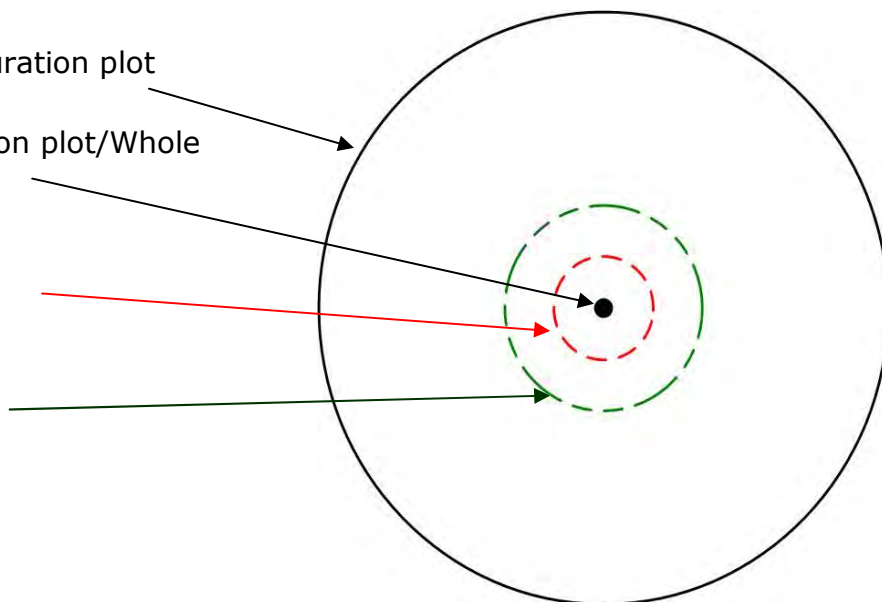
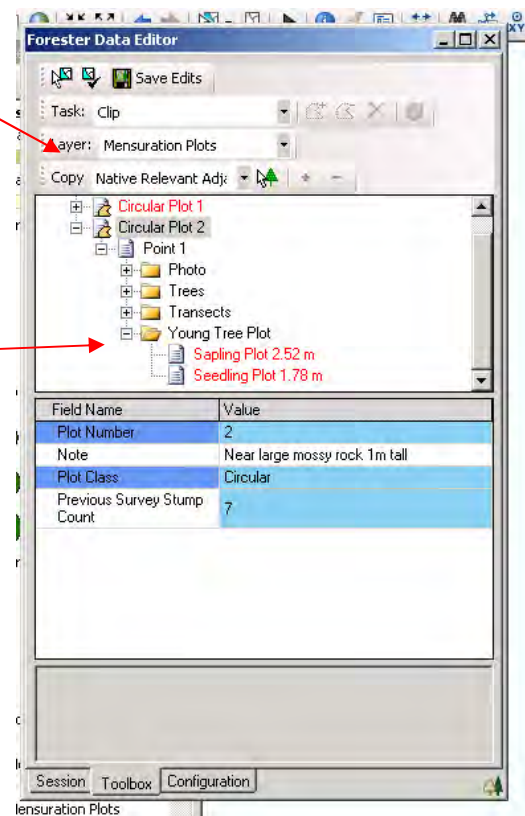


Figure 18-1: Location of Young Tree plots (not to scale)

The young tree plots can be found within the software in the Mensuration Plots or Mensuration Points Layer.

The Young tree plots are then located in the Young Tree Plot folder.



One quick and accurate way to set out your young trees circular plots is to use a pre marked piece of inelastic cord to define the perimeter of your plots. These can be easily made at home by taking a piece of inelastic string or cord and tying this to some form of ring which is wide enough to fit around your transponder pole. You can then set your transponder pole at the centre of the plot and hook the ring over the pole so the string can be drawn out from the pole / plot centre horizontally to the desired distance. Then you need to fix a point on the ground to start, perhaps marking that with a peg and walk clockwise around the pole, keeping the sting level and taught and count all the young trees as they fall under the string. Marking out the two appropriate radii on the string in advance will speed up establishing the plot sizes at each plot. To avoid miscounts when recording part way through the plot you can lower the string to the ground as a marker.

## Re-measure squares

Young tree circular plots in re-measure squares are assessed in exactly the same way as for 1<sup>st</sup> assessment squares – there are no previous assessments to consider. Data for the plots is identical. Data fields for completion can be seen below.

## Data Collection Fields

Complete the following data fields entry for both Seedling and Sapling plots in 1<sup>st</sup> assessment and [Re-measure](#) squares.

**Table 15 - 1: Seedling Circular Plots Data Fields**

Data Field	Options	Comments
Young Trees	<ul style="list-style-type: none"> <li>• None</li> <li>• Not visually accessible</li> <li>• Not Valid</li> <li>• Planted Seedling (&lt;50cm tall)</li> <li>• Regen Seedling (&lt;50cm tall)</li> <li>• Sucker seedling (&lt;50cm tall)</li> <li>• Not Surveyed</li> </ul>	<p>'None' - no young trees are present within the plot. This is the default answer.</p> <p>The plot cannot be seen.</p> <p>'Not Valid' – e.g. for a metalled road, the presence or absence of young trees is not valid.</p>
<i>Where a Seedling has been indicated the following Data Fields will appear:</i>		
Planting Year	Free text	For Planted trees ONLY
Species	Various	See <b>Chapter 8.9</b> .
Species Quantity	<ul style="list-style-type: none"> <li>• Free text</li> </ul>	Enter the number of that species – for low numbers an accurate count can be made. For larger numbers an estimate is acceptable.
Browse Class	<ul style="list-style-type: none"> <li>• None</li> <li>• &gt;50% Outer Shoots Browsed</li> <li>• 10-50% Outer Shoots Browsed</li> <li>• &lt;10% Outer Shoots Browsed</li> </ul>	
Recently Frayed	<ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> <li>• Not Surveyed</li> </ul>	

**Table 15 - 2: Sapling Circular Plots Data Fields**

<b>Data Field</b>	<b>Options</b>	<b>Comments</b>
Young Trees	<ul style="list-style-type: none"> <li>• None</li>   <li>• Not visually accessible</li>   <li>• Not Valid</li>   <li>• Planted Sapling (&lt;50cm tall)</li> <li>• Regen Sapling (&lt;50cm tall)</li> <li>• Sucker Sapling (&lt;50cm tall)</li> <li>• Not Surveyed</li> </ul>	<p>'None' - no young trees are present if within a Treed Section. This is the default answer.</p> <p>The plot cannot be seen.</p> <p>'Not Valid' – in some cases, e.g. a metalled road within a Section, the presence of young trees is not valid.</p> <p>For definitions see chapter 8: Components, propagation.</p>
<i>Where a Seedling has been indicated the following Data Fields will appear:</i>		
Planting Year	Free text	For Planted trees ONLY
Species	Various	See <b>Chapter 8.9</b> .
Species Quantity	<ul style="list-style-type: none"> <li>• Free text</li> </ul>	Enter the number of that species – for low numbers an accurate count can be made. For larger numbers an estimate is acceptable.
Browse Class	<ul style="list-style-type: none"> <li>• None</li> <li>• &gt;50% Outer Shoots Browsed</li> <li>• 10-50% Outer Shoots Browsed</li> <li>• &lt;10% Outer Shoots Browsed</li> </ul>	
Recently Frayed	<ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> <li>• Not Surveyed</li> </ul>	

Where there are more than 1 species or Young Tree Type within a plot, new records will need to be added.

For example if, during the assessment, it was found that within the Seedling plot there were Western hemlock seedlings and some Sitka spruce seedlings then 2 records would be required:

- 1) Western hemlock seedlings
- 2) Sitka spruce seedling

New Seedlings and Saplings can be created either by:

- Right clicking on the Young Tree Plot folder and choosing
  - Add New Sapling Plot Record
  - Add New Seedling Plot Record
- Right clicking on the seedling or sapling record and 'Cloning' the data. NB: remember to edit the cloned data.

### 15.3 Young tree transects (plot/point 1 of Re-measure squares only)

**Note that if young trees are found in a transect, each species and class should also have a corresponding Component in the Section.**

The Young Tree transect is a 10m line running from 5m north to 5m south of the plot centre/Point. For each linear metre along its length a number of parameters are assessed.

The default status of each linear metre

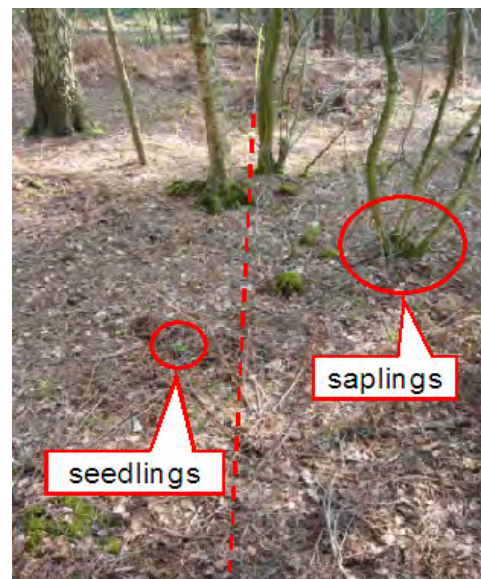
Re-measure: 'None' – this needs to be checked and any young trees found recorded.

Where a plot is partially outwith the Section, it is possible that the Young Trees transects could also be outwith the Section.

Survey and record from north to south.

### 15.3.1 Location of Transect

- The peg that marks plot centre (centre peg) or Point location is used as the halfway point of the transect i.e. 5 m south of the northern start point.
- From the peg, take a bearing with a sighting compass to magnetic north and identify a feature to walk towards.
- Measure out 5m north and mark with a peg (north peg).
- Take a back-bearing of due magnetic south from the north peg and ensure that the centre peg is directly in line with this bearing.
- Adjust the north peg position to east or west as necessary to correct orientation.
- From the north peg walk along the transect to carry out a rapid assessment for young trees.
- If no young trees are present e.g. closed conifer forest, then remove the north peg and record null values for the transect.
- If young trees are present then fully install the transect to accurately survey them.





### 15.3.2 Installing Transect Line (flat ground)

- Clip loggers tape into the centre peg and walk out to north peg.
- Whilst maintaining north-south line, move north peg to 5m from centre peg.
- Attach end of linear tape to north peg and walk back to centre peg.
- Detach loggers tape from centre peg and tuck linear tape between centre peg and vertex pole.
- Walk south with linear tape and extend to 5m from centre peg.



- Use alignment of centre and north pegs to create north-south line and adjust position of linear tape to match this.
- When transect is completed remove north peg and place small sticks (approx 10cm protruding) into the ground at both transect ends to facilitate QA.



### 15.3.3 Transects on slopes >5°

- Assess slope angle
- For slopes of more than 5°, carry out steps as above adjusting transect length according to the table opposite.

Slope (degrees)	Transect length (metres)	Section length (metres)
0	10.00	1.00
5	10.04	1.00
10	10.15	1.02
15	10.35	1.04
20	10.64	1.06
25	11.03	1.10
30	11.55	1.15
35	12.21	1.22
40	13.05	1.31
45	14.14	1.41
50	15.56	1.56
55	17.43	1.74
60	20.00	2.00

### 15.3.4 Transect sizes

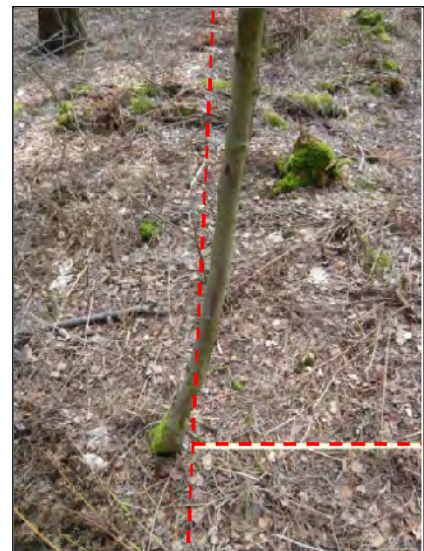
- **Seedlings** are measured in a strip **0.5m to each side** of the transect line, measured perpendicular from the centre of the tape (centre line of the transect).
- **Saplings** are measured in a strip **1.0m to each side** of the transect line, measured perpendicularly from the centre of the tape.



- Use of a builders tape is highly recommended to quickly assess young tree height and distance from the transect line.

### 15.3.5 Leaning trees

- Leaning young trees are not counted if the location of the tree (centre of the base of the tree) is outside the transect and vice versa. In the example shown the transect is to the right of the vertical dotted red line. As the base of the tree is outside the transect, even though it leans into the transect, this tree is not assessed.





### 15.3.6 Coppice trees

- For coppice stems to be assessed the centre of the coppice stool, where the original seedling was deemed to be, must be within the transect.
  - If the centre of the stool is **inside** the transect then *all* stems on the stool are deemed to be within the transect and need to be assessed (shown opposite).
  - If the centre of the stool is **outside** the transect then *all* stems on the stool are deemed to be outside the transect and do not require assessment.

- Coppice stems are assessed individually and are counted if the root collar junction lies within the transect strip.
- Side branches on coppice stool stems are not counted as young trees.



- Low side branches on maiden-form trees stems are also not counted as young trees.



Complete the following Data Fields as required:

**Table 15 - 3: Young Tree Transect Data Fields**

<b>Data Field</b>	<b>Options</b>	<b>Comments</b>
Line Number	Generated by the software <i>unless</i> a new record is being Added by right clicking on the Young Trees folder.	Added records will be required where there are more than 1 type of young tree or species within any linear metre.
Young Trees	<ul style="list-style-type: none"> <li>• None</li> <li>• Not visually accessible</li> <li>• Not Valid</li> <li>• Outside Section</li> <li>• Planted Seedling (&lt;50cm tall)</li> <li>• Planted sapling (≥50cm tall and &lt;4cm DBH)</li> <li>• Regen Seedling (&lt;50cm tall)</li> <li>• Regen sapling (≥50cm tall and &lt;4cm DBH)</li> <li>• Sucker seedling (&lt;50cm tall)</li> <li>• Sucker sapling (≥50cm tall and &lt;4cm DBH)</li> <li>• Not Surveyed</li> </ul>	<p>'None' - no young trees are present if within a Treed Section. This is the default answer.</p> <p>This part of the transect cannot be seen.</p> <p>'Not Valid' – in some cases, e.g. a metalled road within a Section, the presence of young trees is not valid.</p> <p>Choose if this part of the transect falls outwith the Section</p>
Where a sapling or Seedling has been indicated the following Data Fields will appear:		
Planting Year	Free text	For Planted trees ONLY
Species	Various	See <b>Chapter 8.9</b> .
Species Quantity	<ul style="list-style-type: none"> <li>• 1 - 5</li> <li>• &gt;5</li> </ul>	Enter the number of that species and young tree type within that linear metre.
Browse Class	<ul style="list-style-type: none"> <li>• None</li> <li>• &gt;50% Outer Shoots Browsed</li> <li>• 10-50% Outer Shoots</li> </ul>	

	Browsed <ul style="list-style-type: none"> <li>• &lt;10% Outer Shoots Browsed</li> </ul>	
Recently Frayed	<ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> <li>• Not Surveyed</li> </ul>	

Repeat the assessment for each linear metre. Where there are more than 1 species or Young Tree Type within a linear metre, new records will need to be added.

For example if, during the assessment, it was found that within the Linear metre category of 3-4m there were Western hemlock seedlings and saplings and some Sitka spruce seedlings then 3 records would be required within that Linear meter category:

- 1) Western hemlock saplings
- 2) Sitka spruce seedling
- 3) Western hemlock seedlings

Where there is a mixture of potential ages for planted seedlings and saplings for the same species it is acceptable to band them into approximate 5 year bands to reduce the recording burden whilst still giving good data.