Chapter 18: Transects

Contents

Tables

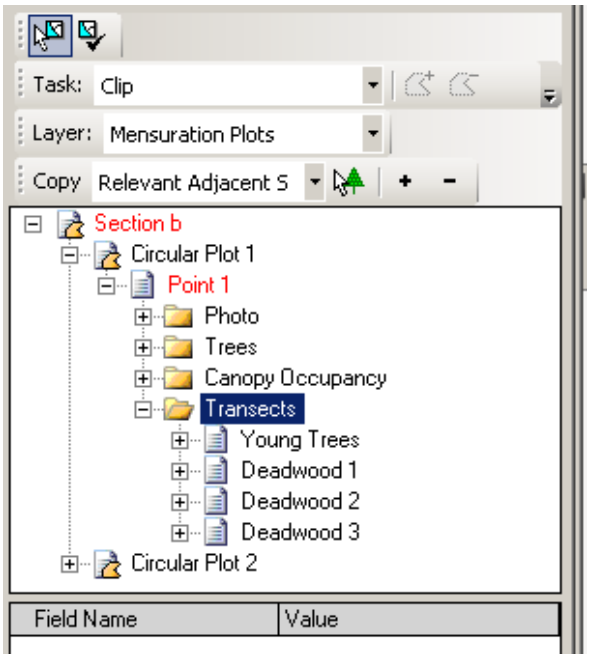
Figures

18.0 Transects

At each Circular Plot 1 /Point 1 a transect assessment is required. If that Plot/Point is Inaccessible then depending upon the reason for the Inaccessibility the transects may move to another location (plot or point) within the Section.

Transects are divided into two types:

1. Young Tree transects
2. Deadwood transects



18.1 Young Tree transects

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

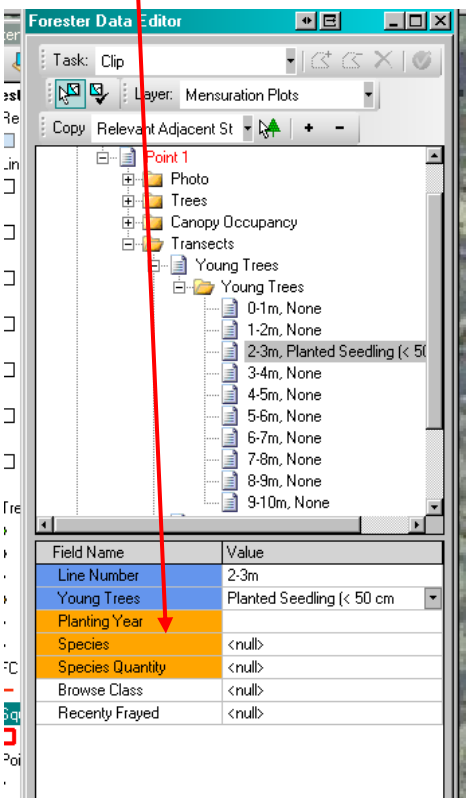
Young tree transects are used to assess the saplings and seedlings within a Section.

18.1.1 Definitions

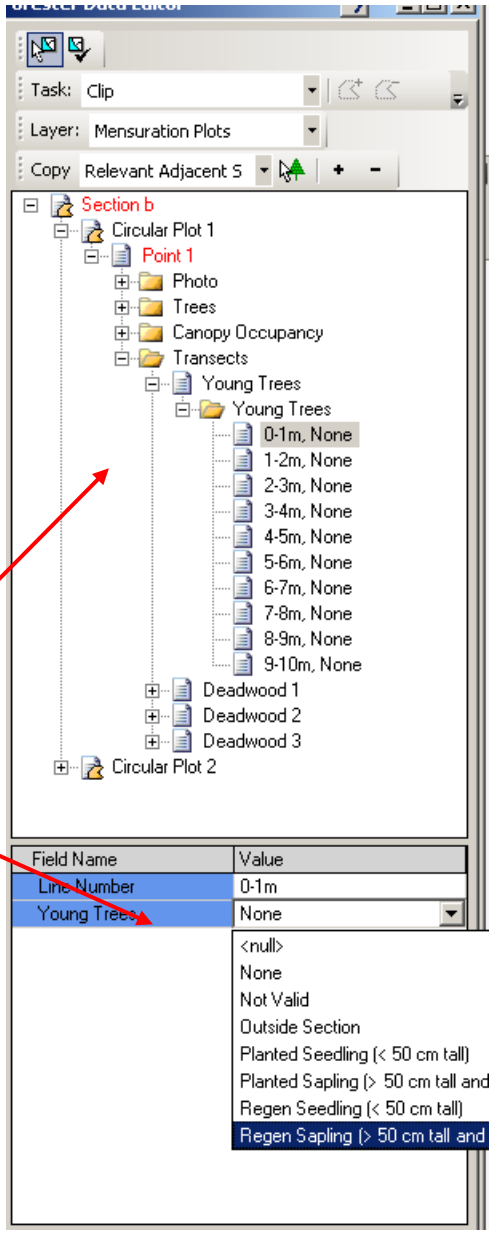
Young trees are all trees **<4cm DBH** and are divided into two classes:

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

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



NB: an entry is required for *each* linear meter.

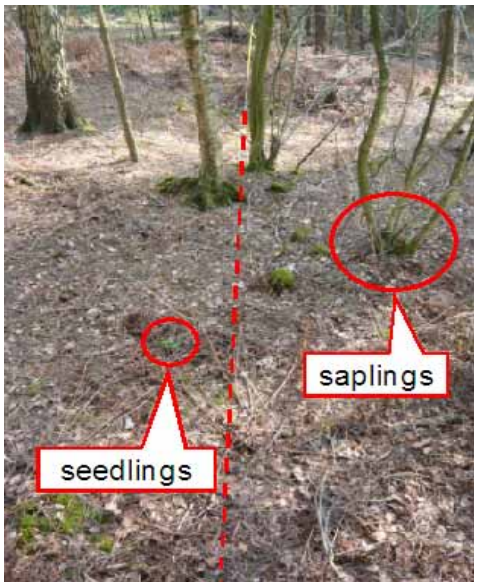


Where a plot is partially outwith the Section, it is possible that the Young Trees transects could also be outwith the Section.

Survey and record from *north to south.*

18.1.2 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.

18.1.3 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.

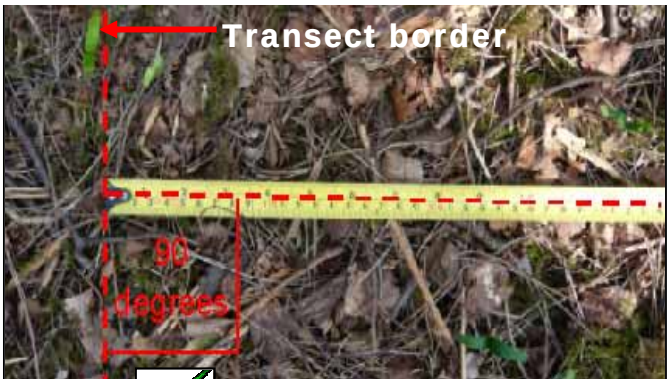
- Use alignment of centre and north pegs to create north-south line and adjust position of linear tape to match this.
- When transect is completed remove north peg and place small sticks (approx 10cm protruding) into the ground at both transect ends to facilitate QA.

18.1.4 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.

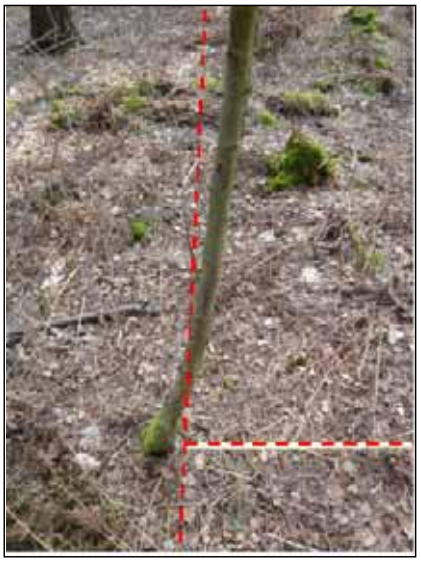
Slope (degrees)	Transect length (metres)	Section length (metres)
0	10.00	1.00
5	10.04	1.00
10	10.15	1.02
15	10.35	1.04
20	10.64	1.06
25	11.03	1.10
30	11.55	1.15
35	12.21	1.22
40	13.05	1.31
45	14.14	1.41
50	15.56	1.56
55	17.43	1.74
60	20.00	2.00

18.1.5 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.

18.1.6 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.

18.1.7 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 18 - 1: Young Tree Transect Data Fields

Data Field	Options	Comments
Line Number	Generated by the software *unless* 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	• None • Not Valid • Outside Section • Planted Seedling (<50cm tall) • Planted sapling (≥50cm tall and <4cm DBH) • Regen Seedling (<50cm tall) • Regen sapling (≥50cm tall and <4cm DBH)	'None' - no young trees are present if within a Treed Section. This is the default answer. 'Not Valid' – in some cases, e.g. a metalled road within a Section, the presence of young trees is not valid.
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 **Chapter 8.9**.
Species Quantity	• 1 - 5 • >5	Enter the number of that species and young tree type within that linear metre.
Browse Class	• None • >50% Outer Shoots Browsed • 10-50% Outer Shoots Browsed • <10% Outer Shoots Browsed	
Recently Frayed	• No • Yes	

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.

18.2 Deadwood transects

18.2.1 Definition

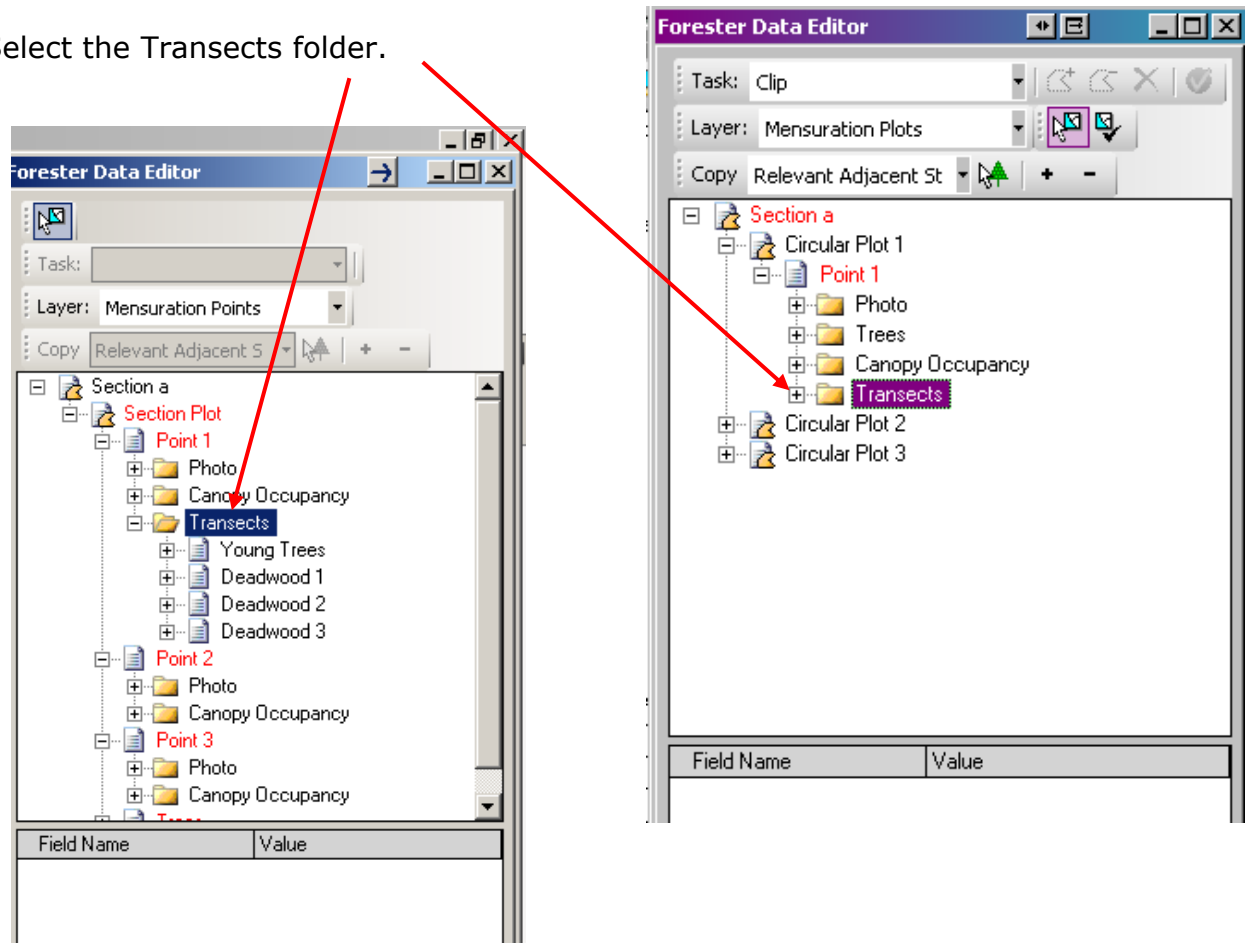
Lying Deadwood is:

- Dead, woody material from trees that has not been processed e.g. branches or stem-wood AND
- Must be ≥7cm diameter where the transect line crosses it.

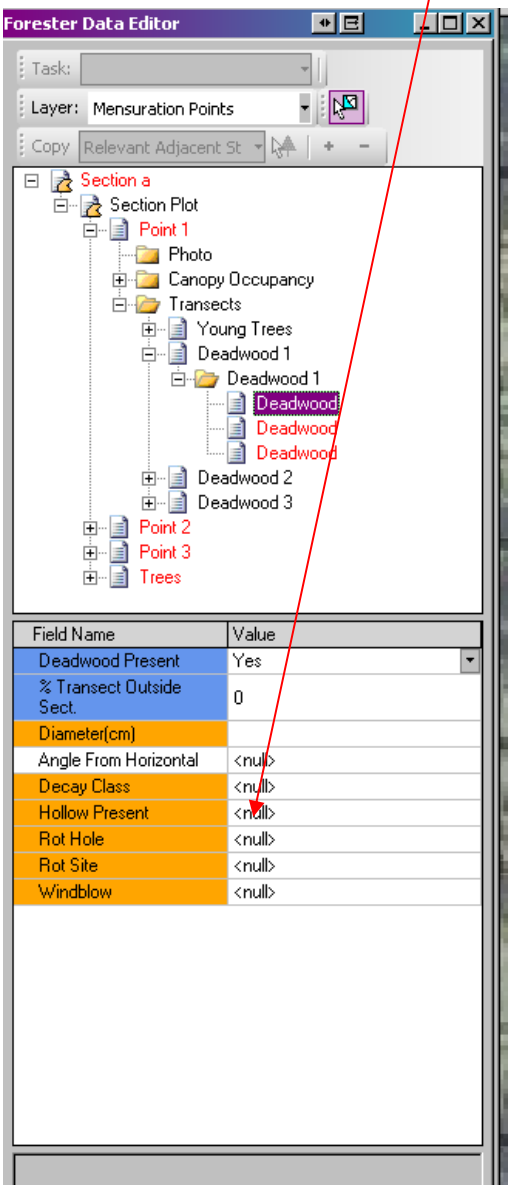
Fencing posts etc. are NOT counted as lying deadwood.

At the first plot/point three lying Deadwood transects need to be assessed.

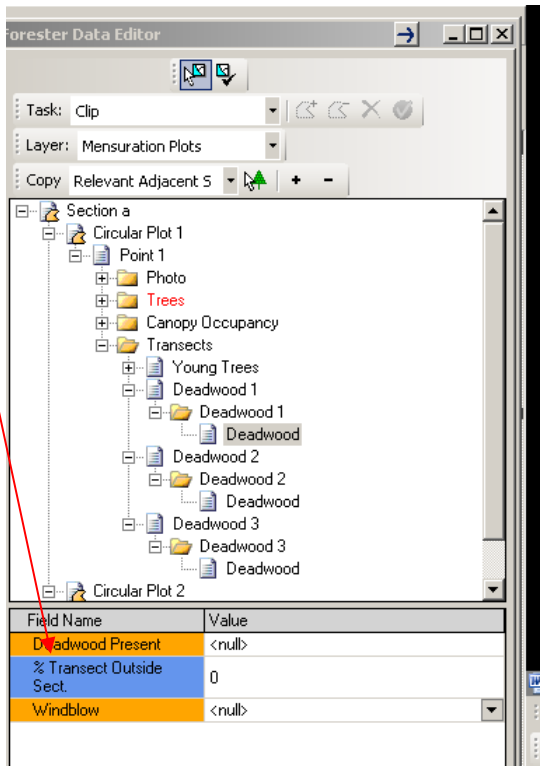
Select the Transects folder.



Click on the Deadwood 1 (or 2 or 3) → Deadwood 1 → Deadwood Record to show the Data Fields.



Deadwood Present – 'Yes'



Deadwood Present - <null> or 'No'

18.2.2 Deadwood Transect Methodology

Three 10m (horizontal distance) transects at 120° to each other are laid out as shown below. Lines should start 2m from the plot centre, using magnetic north as shown on the compass.

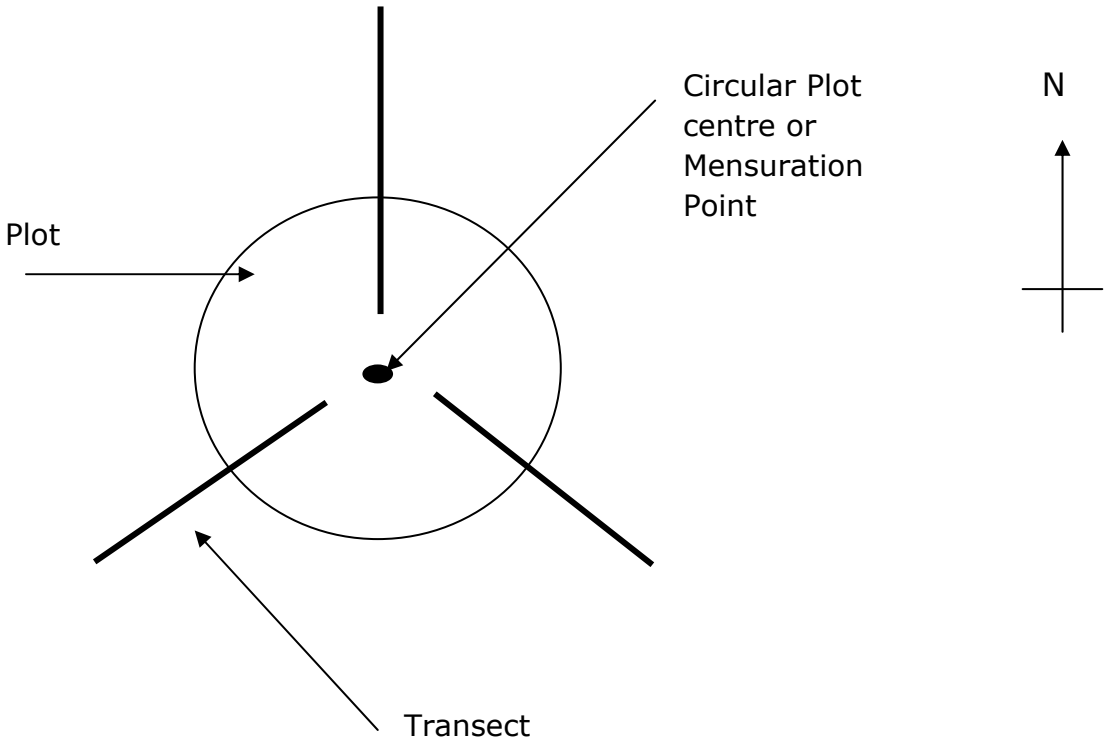


Figure 18 - 1: Layout of Deadwood transects

Starting at the centre and working outwards move along each transect and measure the diameter, perpendicular to the axis of the deadwood, of all Coarse Woody Debris (CWD) – ≥7cm diameter where the wood intersects the transect.

Where forked CWD intersects the transect line at more than 1 point, measure all diameters where they intersect the transect line:

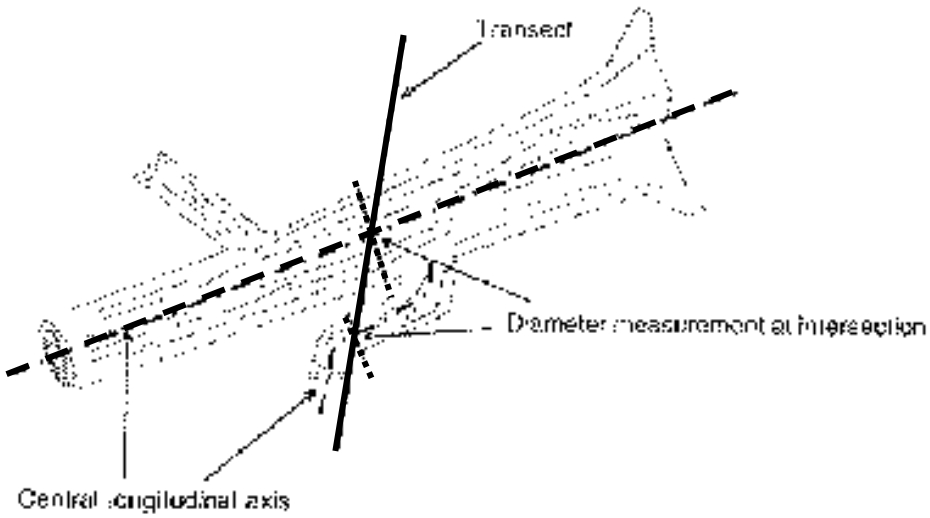


Figure 18 - 2: Deadwood transect crossing a log

Note the decay class (1-5) of each piece of CWD

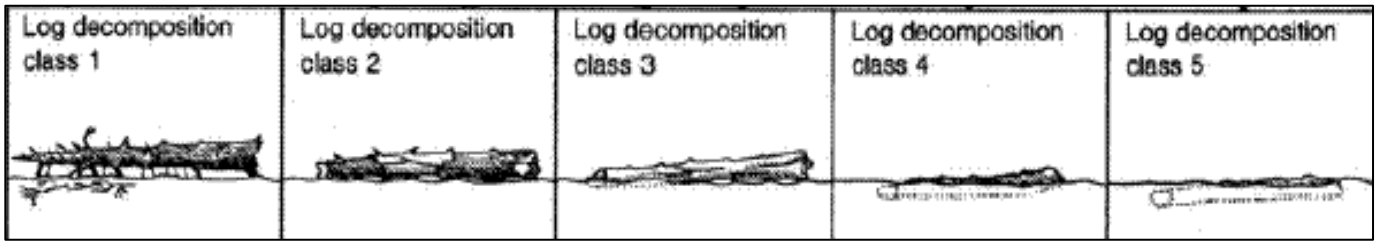


Figure 18 - 3: Lying deadwood dacay calsses

Where:

1 = Bark intact
2 = Bark loose or sloughing off, no sapwood degradation
3 = No bark, some sapwood degradation
4 = No bark, considerable sapwood degradation
5 = Sapwood and heartwood degradation

For each piece note the presence of:

- Hollow – is the deadwood hollow?
- Rot hole – is there a rot hole ≥5cm mean diameter

- Rot site – must be ≥300cm2 in size
- Windblow – is the lying deadwood a result of windblow

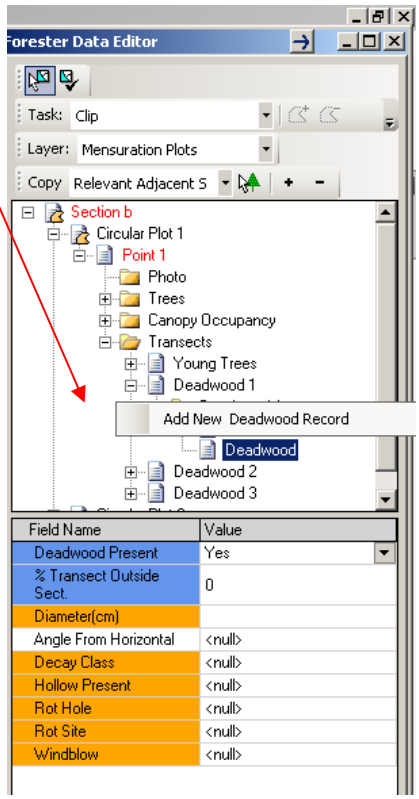
Complete Data Fields as required

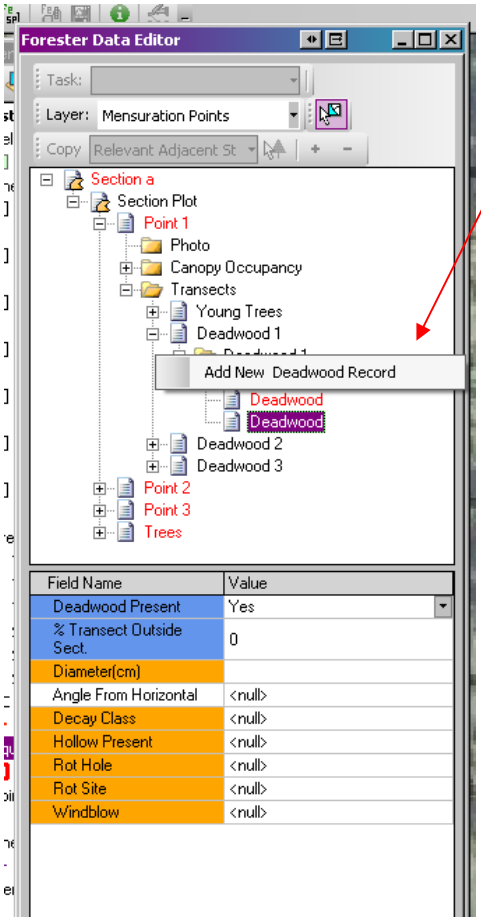
Table 18 - 2: Lying Deadwood Transect Data Fields

Field Name	Options	Comments
Deadwood Present	• No • Yes	If there is no lying deadwood along the transect line choose 'No'. If deadwood is present choose 'Yes'.
% Transect Outside Section.	Free text – whole number	Allocate what % of the transect line falls outwith the Section *on the ground.*
Windblow	• No • Yes	If there is no deadwood or if the deadwood is not a windblown tree then answer No. If the deadwood is from windblow then answer Yes. NB: answer No if windsnapped.
If Deadwood is present the following Data Fields will appear:		
Diameter	Free text – whole numbers only	Diameter must be ≥7cm. NB: if a length of deadwood is inaccessible then estimate the diameter.
Angle From Horizontal	*Leave as <null> until notified otherwise*	
Decay Class	• 1-5	See above figure.
Hollow Present	• No • Yes	Present?
Rot Hole	• No • Yes	Present?
Rot Site	• No • Yes	Present?

To Add another piece of deadwood to the transect, right click on the Deadwood 1 folder and Add New Deadwood record. Deadwood records cannot be cloned.

Repeat data entries for each piece of deadwood within each transect.





Deadwood stacks/piles: where there is a stack/pile of deadwood, measure those pieces that the transect crosses which are safe to assess and estimate any remaining pieces of deadwood. Do not dismantle the stack/pile.

Where a transect line runs along a length of deadwood assess the diameter mid-way along that part of the transect that coincides with the deadwood length.