FORGEWAYS.CO.UK

TREE MEASURING GUIDE

Tree age

When trying to gauge a trees age (other than counting rings, from a chopped down tree), we can use "Mitchell's Rule".

The late tree expert estimated that a tree can grow an average of 2.5cm of circumference every year. This is for a tree in an open field, with optimum light, water and nutrients. Trees grown within a woodland however will grow around 1.5cm of circumference if it is surrounded by trees competing for resources.

Care and judgement needs to be used, as things such as species, elevation, soil depth, slope, etc can reduce the growth rate down to as low 0.5cm. These rules work well for native hardwoods such as Ash, Oak, Sycamore and Beech and for trees in a semi mature to mature age range.

Try to cross reference the number of growth rings against circumference, to work out a general rule in your woodland.

For coniferous species with clear and defined branches, then each Whorl or circle layer of branches is one year of growth.

Tree height

There are quite a few apps for smartphones that can, in combination with a tape measured or paced distance, almost instantly and accurately measure tree height. However for a quick and cheap tree height measurement, try the stick method:

- Cut a stick, that is the same length from your eye to the second knuckle of your hand, with your arm fully stretched out in front of you.
- Hold the stick vertically in front of you with your arm at full stretch.
- Walk backwards or forwards until the top of the stick is visually at the top of the tree, and the bottom of the stick visually at the bottom, i.e. the stick appears to be the same height as the tree.
- Tree height is equal to the distance your feet are from the trunk of the tree you are measuring.

Bear in mind this is a basic method and should be checked against a felled tree and checked from time to time to ensure its accuracy.

FORGEWAYS.CO.UK

Tree volume

To measure the volume of a felled log is a simple business of just using the formula πr^2 where π is 3.412 and r^2 is the radius squared (or times by itself) and measured at the mid point radius. Then you multiply that answer by the length of the log. Keep all the units the same in the formula i.e. I like to use metres as the answer will then be in m^3.

When working out volumes of usable timber, sometimes a buyer or sawmill may reduce your initial volume by 20 to 25% to allow for wastage (the term Hoppus feet refers to the volume in cubic feet minus 21%).

To work out the timber volume in a live standing tree is a little more tricky as you will need to estimate the height of the tree from ground level up to where the trunk becomes 7cm in diameter (limit of useable timber). You need to measure the diameter of the tree at 1.3m above ground level (referred to as DBH). Work out the mid diameter by dividing your DBH diameter by 2. then use the height and the calculated mid diameter (dont forget to convert into a radius) in your volume formula.

All the above is just for general estimation and for use on a few trees in a small woodland. To work out larger areas and or with more accuracy you should consider obtaining a copy of the "Forest Mensuration Handbook".