

LTOA i-tree canopy study February 2012

Twenty percent, more or less. That has been the figure given for tree cover in London for 20 years. This is despite hundreds of thousands of trees planted in the same period and many initiatives to increase tree numbers in the city. Now the doubts are over. The accurate and precise figure for 2010 is 21.87%. This is made up of two elements: woodlands and isolated trees, e.g. street trees and trees in gardens and parks. Woodland covers 7.37% of the city. Isolated trees (or trees in small groups or lines which don't qualify as woodlands) cover a further 14.5% of the city.

Calculating accurate figures for London's tree cover is vital for the future:

1. The Mayor of London and the London Plan propose targets for increasing tree canopy by 5% before 2025 and a further 5% by 2050. Estimates normally include a Standard Error (SE) of such a size that it would be difficult to calculate such increases. The LTOA's survey has an SE of only +/- 0.56%. From now on progress will be measurable.
2. Increasing London's tree canopy is the key to a habitable city in the future, as not only global climate change but the more localised effects of the urban heat island make the city less of a place to live comfortably. Without knowing what we have now, we cannot realistically set goals. Are we succeeding or are we failing?
3. Google maps now present the possibility of using previous aerial photo surveys. With these surveys we are able to show the difference tree planting or development has made over the past years to London's tree cover.
4. We know the size of London. Using these figures we can now make quantitative assessments of the need for planting and show that targeted planting can make a difference.
5. ***We can finally start to plan London's future Urban Forest.***

The i-tree tools used to carry out this study (<http://www.itreetools.org/about.php>) have been developed by the U.S. Forestry Service and its partners. They provide scientific tools to assess community trees and these are constantly being improved and developed. This particular set of tools - i-Tree Canopy - allows swift, desktop study using Google maps. The accuracy of the study depends on careful attention to detail when assessing the aerial map under scrutiny. Several members of the LTOA have carried out the study using a narrow range of unambiguous land cover types and several other members have verified the entries. For this type of survey, precision is achieved by assessing the maximum possible number of survey points. Many similar studies use between 500 and 1000 survey points. The LTOA has used 5467 points for the Greater London area survey, hence the margin of error is extremely low – only slightly over half a percent in either direction. The tools require a file which simply contains the boundary line of the study area. It then generates random survey points within that area which are allocated to one of the chosen land cover types – tree, woodland, building, etc. – by the surveyor. The land cover types were picked for clarity and simplicity. The more survey points - the lower the SE %.

FOR THOSE REQUIRING DETAIL OF THE LTOA i-TREE STUDY:

Categories of survey point types decided upon were:-

Tree - Individual or small groups of trees.

Woodlands - larger areas of continuous tree canopy cover.

Other vegetation - grass, garden shrubs, trackside nettles, front garden hedges, farmland, scrub, grassed football pitches, etc, A further **30%** of Greater London is under Other vegetation within the above description

Buildings - to validate other figures - as buildings are easy to identify. There are figures already available for the built environment. A close correlation of results reinforce the accuracy of the canopy figures.

Transport - including any surfaces upon which people walk, drive, ride and park!

Unclassified. Anything unclear or outside the remit of the survey. We note this does not affect the tree elements as these are never so doubtful as to be unclassifiable.

Greater London Area Figures:

5467 Point samples

Trees (Individual) cover 14.5% . The Standard Error is +/-0.48%

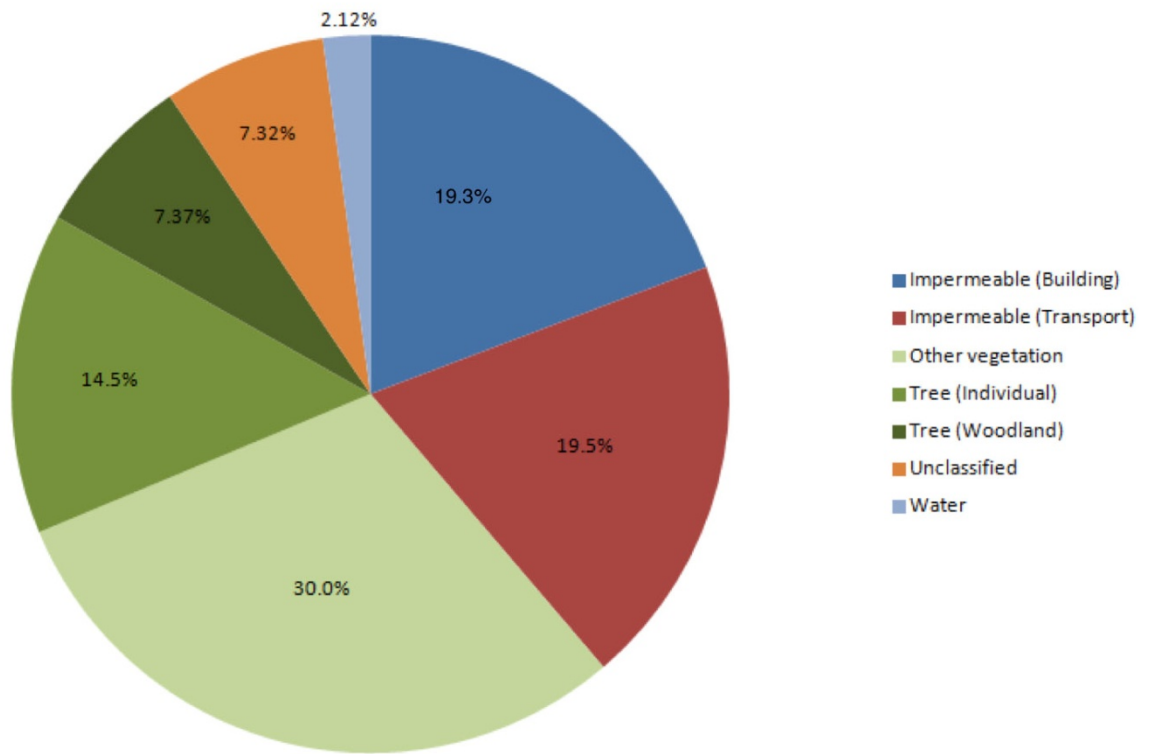
Woodlands 7.37% SE +/-0.35%

The cumulative total of Tree Cover is therefore 21.87% with a SE of +/- 0.56%

Other Vegetation in Greater London area covers a further 30% SE +/-0.62%

Cover Class	% Cover	% Standard Error
Tree (Individual)	14.5	0.48
Tree (Woodland)	7.37	0.35
Total Canopy Cover	21.87	0.56

Greater London Canopy Cover



Cover Class	% Cover	% Standard Error
Impermeable (Building)	19.3	0.53
Impermeable (Transport)	19.5	0.54
Other Vegetation	30.0	0.62
Tree (Individual)	14.5	0.48
Tree (Woodland)	7.37	0.35
Unclassified	7.32	0.35
Water	2.12	0.19