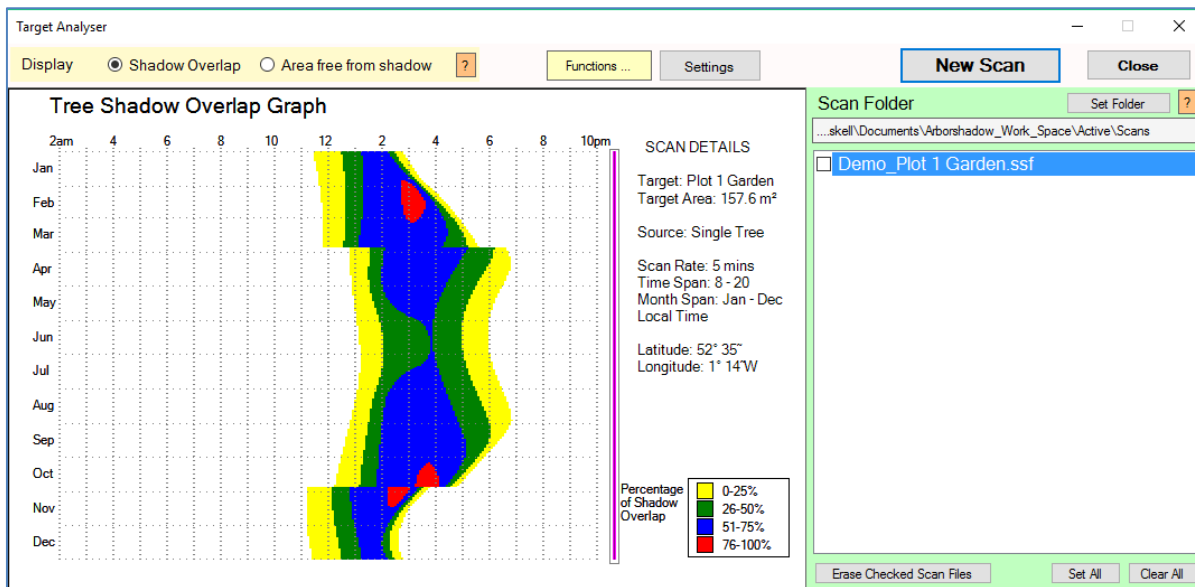


ArborShadow - Analyzer

For UK based arboriculturists the issue of adequate sunlight availability to proposed new development gardens and amenity areas is an important issue. If these areas do become excessively shaded, adjacent trees may become a target for pruning or even removal.

The ArborShadow analyzer creates a loop to run through each day of the year processing the tree shadows in steps of 5/15/30 or 60 minutes for each day and measures the overlap for a designated target area such as a garden. It calculates the percentage and assigns a colour to the amount. A graph is constructed showing the results. See example below.



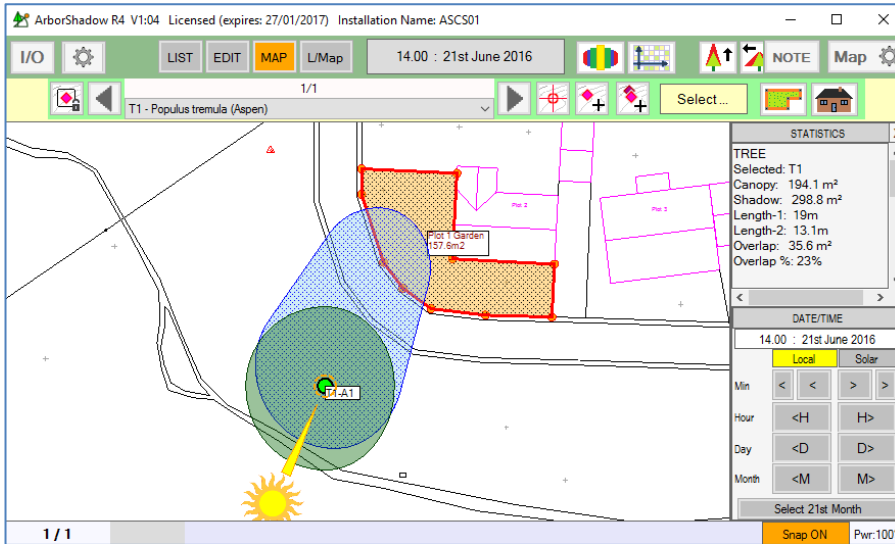
The graph shows that significant shading of the garden starts around noon. The red/blue colouring signifies higher shading 51%+. The two lateral shifts in the graph in late May and late October reflect the time adjustments for BST (British summer time).

It is important to understand a little about the actual scanning process so you can interpret the results correctly. During the scan, the program simply steps through the time and days and calculates the shadows for each moment. It works out any interference with the target, stores the results for display etc. The important point to realize is that the time period between each step interval is not analysed. Only the time of each step is analysed. So, if you are using a time interval of 60 minutes, then analysis will be carried out on each hour only. The period between say, 2pm and 3pm won't be analysed, only the moment of 2pm and then of 3pm will be.

Unfortunately, the scanning process is very time consuming, as it requires a huge amount of processing time. With the use of multiple trees and/or higher tolerance settings, the scanning process can slow down.

The high accuracy (5 min) scan should be reserved for those times when you wish to produce graphics for inclusion within reports. I suggest you attend to other activities such as making that important cup-of-tea during such a scan!

The screenshot below shows the tree and target area used. For the date/time shown the overlap is 23% which shows as yellow on the graph (close to becoming green).

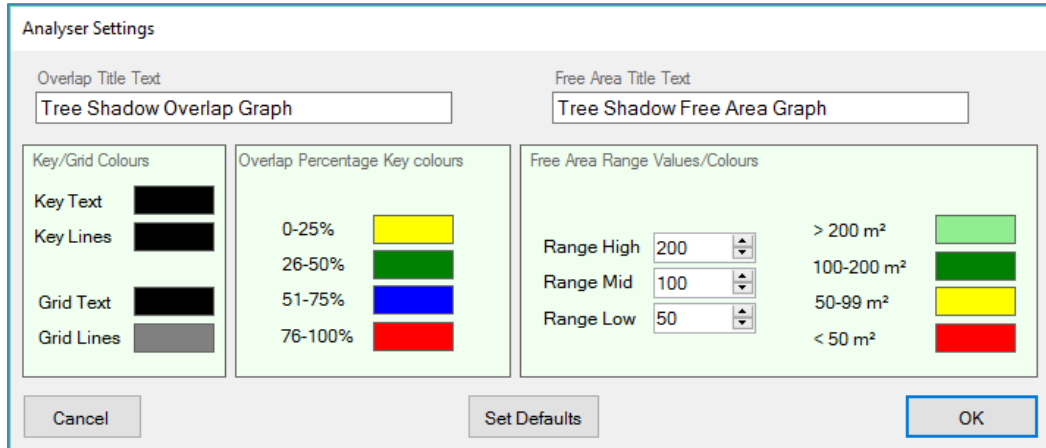


Examining the map further we can see that the tree shadow moves from west to east as the sun's apparent position in the sky moves clockwise. So, it is impossible to have any major shading before noon as at that time the shadow will be off the target. Shading will occur predominantly in the afternoon (as shown on the graph).

The Analyzer Screen

The Analyzer Settings Window

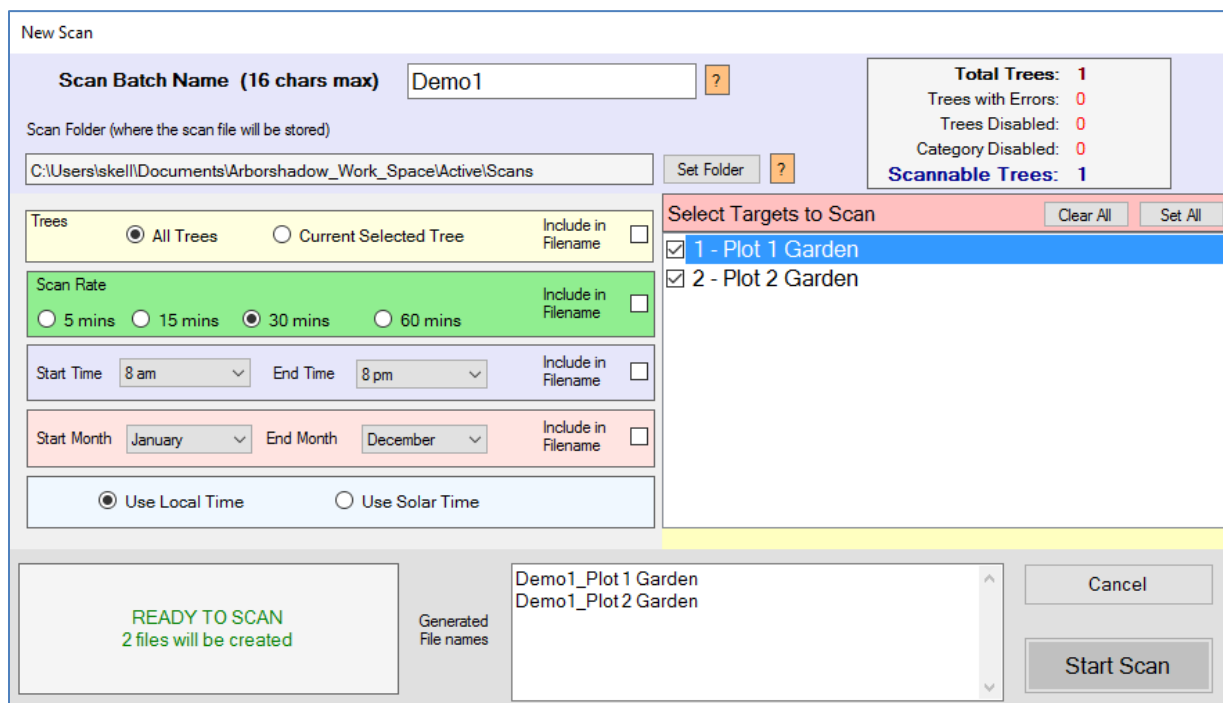
This allows the graph titles and colours to be modified. Also, the range values for the Free-Area graph version can be adjusted (see later section).



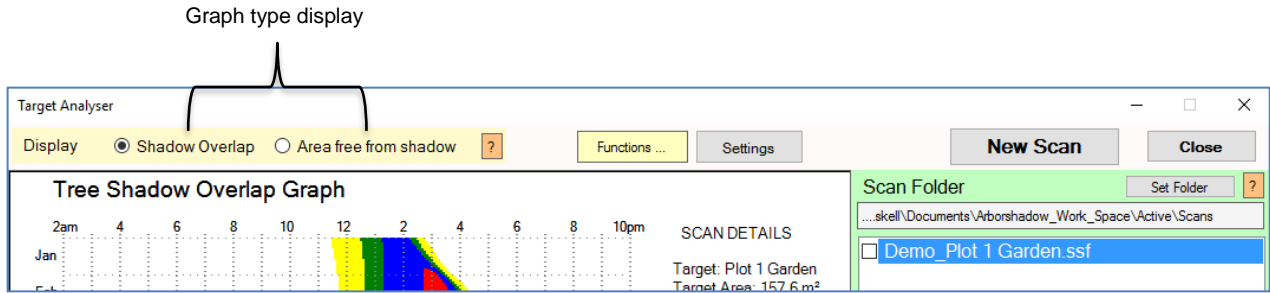
The New Scan Window

The map can hold multiple trees and multiple target areas. ArborShadow can process all targets sequentially and assign a new file name to each scan file. Each scan file represents one target. The filenames must have a defined batch name which is then automatically appended with the target name.

In the image below I have two targets selected for scanning. I have set the batch name to Demo1 and in the bottom box ('Generated filenames') you can see that 2 files will be generated; each with its own name relating to the targets. This combination of batch name and target name helps manage files. Additional text can be added to the filename by selecting any of the 'Include in Filename' check boxes. The other functions here should be self-explanatory. The scan rate determines the steps throughout each day that analysis is made. And you can set the start/end time/month and set the folder in which to store the files.



Scan Graph Types



ArborShadow offers two ways to display the scan data.

- The 'Shadow Overlap' graph displays the percentage (%) of the target area which is overlapped by shadows.
- The 'Area Free from Shadow' graph displays the actual area (m²) of the target area which is shade free.

Using just the 'Shadow Overlap' graph can be deceptive especially for large gardens. The overlap percentage may for example show 75% of target area in shade but the target area may be several 100 meters squared so the 25% which is free from shade could amount to a very large area which is entirely adequate for use. The image shows the two graphs displayed using the same scan data.

