

A guide to comparing the ecosystem benefits of different type of tree

This guide will take you through the steps needed to compare the ecosystem benefit values of two different types of tree.

Step 1. Go to the [Treezilla.org](https://treezilla.org) website.

There is no need to login to carry out this activity but you may want to sign up so that you can add trees to the system in the future.

Step 2. Choose tree species to compare.

We suggest you compare English Oak (*Quercus robur*) and Scots Pine (*Pinus sylvestris*). Note that the family name of the tree species such as Fagaceae or Pinaceae may be given after the scientific name, you do not need to type this. Other species may be selected but it is probably best to try the oak vs. pine comparison first. The result is quite striking.

There are options in how you make the comparison. For example, it is possible to compare all the English Oak and Scots Pine that are on Treezilla. Alternatively, you might select a subset by choosing the trees in a particular area or of a certain size.

Step 3. Finding trees and recording the benefit data.

In the 'Search for a Species' box (Figure 1) type the first few letters of either the common name or the scientific name for the species. Then select the species you are interested from the list that is produced. Be careful that you select the correct species as there are many types of tree on the system and they often have similar names, for example a number of cultivated varieties of *Quercus robur* are shown such as Cut-leaved oak *Quercus robur* 'Filicifolia' - be careful not to select these but instead go for the entry showing just English Oak (*Quercus robur*). Note that selecting *Quercus* sp. or any genus followed by sp. will show those trees that have only been identified as far as genus; it will NOT show all trees from all species in that genus.

Once you have the correct species click the 'Search Great Britain' button. This will show the number of trees, the combined ecosystem services provided by these trees and a map of where they are. Record the number of trees and the various benefits. Using a spreadsheet would be helpful here.

Then repeat the search this time using Scots Pine (*Pinus sylvestris*) and compare the ecosystem service numbers with those for the Oak. Once again record the data.

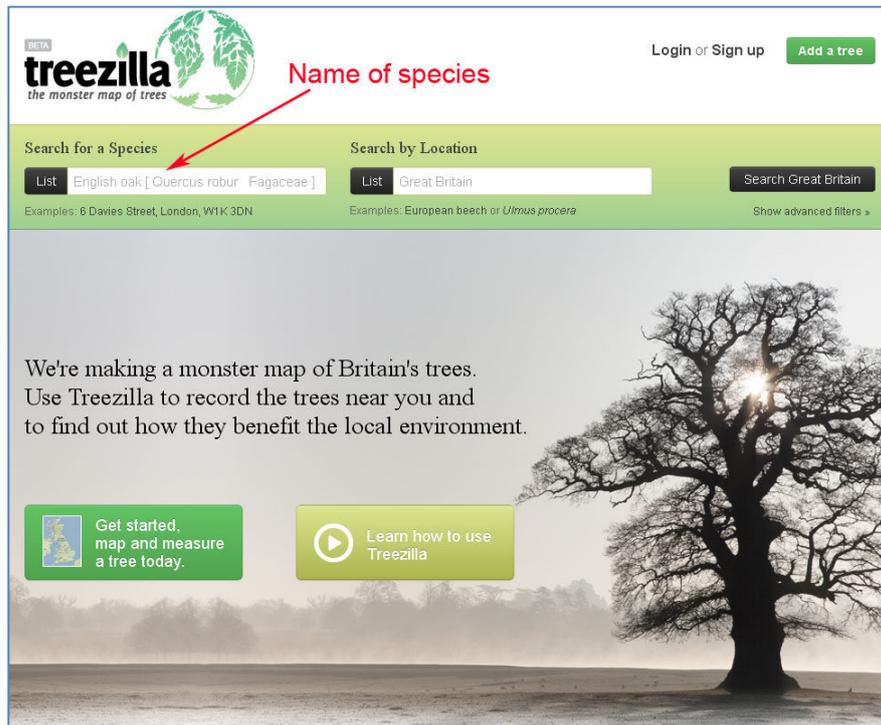


Figure 1: The 'Search for a Species' box on the homepage of Treezilla.

Analysing and interpreting the data

There are many ways of analysing and interpreting the data. Here we suggest approaches and questions you may wish to consider. A useful first step is to calculate the benefits per tree.

- Does one species provide more ecosystem services than the other? Why might this be?
- Leaves provide most of the ecosystem services. What are the major leaf differences between these species? How would you expect any differences to be reflected in the ecosystem benefit values?
- Are benefit differences linked to differences in tree size? It is possible to further examine the data by using the 'advanced filters' option, perhaps just selecting trees up to 0.5m diameter and making new comparisons for the two species. Note you may need to select the 0.5m diameter in the advanced filters section then select the species again otherwise it may apply the advanced filter to all trees in the database not just the species you are interested in. Alternatively, you could identify two individual trees of very similar diameter but different species and compare the benefits they generate.

When you have considered these various issues, write a short conclusion that captures the differences you have identified and offers an explanation for the differences.