

'Re-elming' Hampshire

The English countryside was once dominated by elms. Historically it was one of the six major trees in England. Since the 1960s though they have been ravaged by Dutch elm disease, a disease that was thought to have originated in Asia, but was accidentally introduced to Europe in the early 20th century and was first described in Holland in the 1920's, hence the name (Dutch elm disease). The disease is caused by a pathogenic microfungus carried by two species of elm bark beetle and has killed nearly all the mature elms in Britain, an estimated toll of 60-100 million trees. Being a native tree it is a natural host for many native invertebrates (around 80 species) these include many rare moths and the now endangered white-letter hairstreak butterfly.

The white-letter hairstreak butterfly is now endangered as it has suffered hugely from the loss of mature elms as they are its sole food plant. The butterflies are hard to spot as they tend to fly around the tops of trees. The caterpillars feed on the leaves and seeds of elm tree species. It has been noted that the butterflies do occasionally come down to ground level to feed on nectar of privet and bramble for energy. The butterfly prefers to breed where elms occur in sheltered hedgerows, mixed scrub and edges of woodland rides. They are also found on large isolated elms. (This information has been taken from: <https://butterfly-conservation.org/butterflies/white-letter-hairstreak>).

There is now a determination to return elms to the English countryside. The development of disease resistant elms began with breeding programmes in Europe. Here they hybridized several European species with the Siberian elm (*Ulmus pumila*), which is native to central Asia. This elm has evolved a genetic resistance to the disease owing to longer exposure over several thousands of years. Trees take a long time to grow and mature, young elms often grow from suckers near dead trees, they seem to be healthy until they get to a certain size, then the elm bark beetle seems to be able to find them and they then die. This is why these hybrid trees have been in trials for so long; over 30 years in Europe and the UK, and more relevant to this programme, in Hampshire by Butterfly Conservation.

Hampshire County Council set up Hampshire Forest Partnership (HFP) in 2022 to encourage tree planting. HFP have teamed up with the Tree Council and Butterfly Conservation in a project that will replant disease-resistant elms back into the Hampshire countryside. These hybrid trees have been developed from the breeding programmes in Europe. HFP have been growing several cultivars, with initial findings suggesting they can resist the disease and establish well. HFP is now ready to give the trees away and observe how they cope in the 'real world'. In return for the free trees HFP stipulated that: 'The trees must be located outside of existing woodlands and be able to grow to maturity to provide maximum biodiversity benefits to the white-letter hairstreak butterfly. They can be planted within hedges to become hedgerow trees, along bare boundaries, in fields as tree clusters or as individual trees. They can also be planted within new tree planting sites such as new shelter belts or new linear woodlands. Priority locations are those that benefit the white-letter hairstreak butterfly and are visible in the landscape for people to enjoy.'

The EVMA applied for and have so far been given ten of these trees: five of the cultivar *Ulmus 'fiorente'* [a cross between the European field elm (*Ulmus minor*) and the Siberian elm (*Ulmus pumila*)]; and five of the cultivar *Ulmus 'rebona'* [a cross between *Ulmus pumila* and the Japanese elm (*Ulmus japonica*)]. It is also hoped that the EVMA will receive some *Ulmus minor* 'Ademuz', which is not a hybrid, but a resistant form of *U. minor*.

In return for the trees the EVMA are required to photograph them once planted and provide a location via grid reference for every tree, so that HFP can find and access the trees to monitor them, recording future growth patterns, ability to resist the disease and how well the elms support biodiversity and nature recovery. On 28th December 2024 these ten very healthy looking trees, already over ten feet tall were planted in the southern boundary hedge of the arboretum. Hopefully they will thrive there and once again in years to come we will see mature elms in English hedgerows and playing host to many native invertebrates.