Creating broadleaves 2.0

Future Tree Trust CEO **Tim Rowland** outlines the charity's programme to enhance broadleaved species for better disease resistance, carbon sequestration – and economic viability.

There isn't much that Greta Thunberg and Donald Trump agree about. But both have made much of the fact that the planet needs more trees to help avert the predicted climate crisis. In a world of often bitter divisions and clashing opinions, the need for more trees is universally accepted. Yet planting rates in the UK have stalled and landowners are finding it difficult to justify planting native broadleaved trees from an economic perspective – the returns are too low because the trees mature too slowly and often only produce firewood.

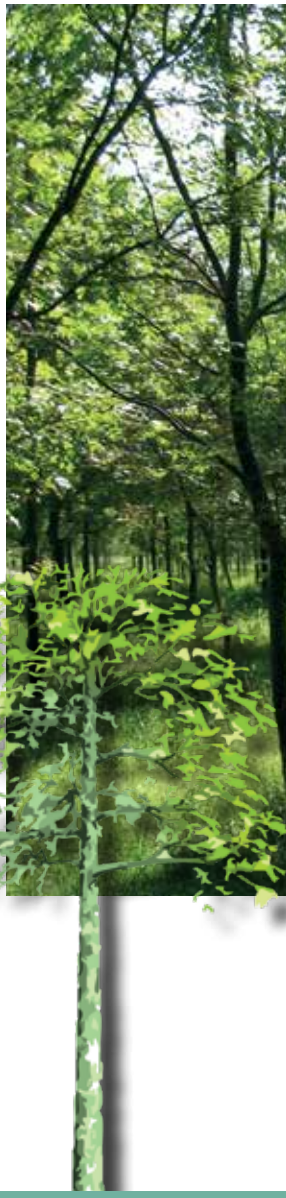
Not only does the world need more trees, but we have to ensure that the trees planted now and in the future deliver the maximum benefits for society. To do this they need to be healthy, disease resistant and productive. They need to be 'better' trees than are currently available.

That's where Future Trees Trust is making a difference to our world, right now. Our work aims to increase disease resistance, carbon sequestration and timber yield in seven species of broadleaved trees by up to 20%.

Such increases in timber yield have been achieved with other species across the world – Sitka spruce and eucalypts to name just two. We still have a way to go before we can claim such yield increases, but all the early indications are that we're heading in that direction.

By making the planting of broadleaved trees more economically attractive, many more, much better trees will be planted in the future, with all the associated benefits and advantages these trees will bring to our society, environment, wildlife habitats and the very look and feel of our countryside.

Improving the economic viability of our broadleaved woodlands is a fundamental driver of our work. An old forestry saying is "The wood that pays is the wood that stays". Our work will help to make our broadleaved woodlands pay so that the trees in them stay to provide all the benefits to us that they can.



Why should we improve our broadleaved trees?

Because our climate is changing
Predicted changes to our climate – increased average temperatures, dryer summers, wetter winters - will have an impact on our trees and we need to make sure that future trees are best adapted to thrive in the climate they will experience.

Because it has huge social benefits
Broadleaved woodlands play an important role in the quality of our lives by providing ecosystem services and associated health benefits. Our work aims to make the very most of what they can offer us, by producing strong, healthy trees to plant and by advocating good management of our woodland.

Because it benefits our economy
Our broadleaved woodlands can contribute to local, regional and national economies in several ways:-

Producing a sustainable source of high quality timber products - our broadleaved woodlands are generally of low quality and often the end product is firewood, meaning that the UK imports 95% of the hardwood timber it uses

Supporting rural economies - woodlands provide many opportunities to support rural economies, from mountain biking centres, adventure playgrounds and wildlife encounter experiences. These activities generate significant income and provide considerable contributions to local rural economies and employment.

Selective breeding

Since 1991, we have been identifying superb individual trees of seven broadleaved species – ash, birch, cherry, oak, sycamore, sweet chestnut and walnut – and have been selectively breeding them from either cuttings or seed. These 'parent' trees are mainly selected for their timber-producing characteristics:

- Pest and disease free
- Rapid growth
- Straight, circular stem
- Fine branches
- Horizontal branches
- Desirable wood properties.

Our ash seed orchard at Little Wittenham

Left: **Grafted birch trees ready for planting**

We have now identified more than 1400 'plus' trees and have taken either cuttings or seed from them. We either graft the cuttings or plant the saplings grown from the seed into replicated trials across the UK.

Over many years, we assess their growth, form and disease resilience, remove the lesser-performing trees and leave only the best trees (those with proven resilience, good growth rate and form) free to breed with each other.

After successive removal of all but the best trees, we are left with trees that will produce seed that will grow into superior trees.

Next research objectives

We have set ourselves some challenging objectives to achieve by 2025:

- Plant progeny trials for silver birch and sycamore
- Establish four oak grafted seed orchards
- Continue work on the Living Ash Project to find ash trees resilient to ash dieback
- Identify 50 more birch trees in England and Wales and sessile oak plus trees
- Collect grafting material from all newly identified plus trees
- Establish four demonstration plots across the UK to showcase our achievements.

www.futuretrees.org

Growing broadleaved trees for timber

Potential benefits:

- Increased income from higher timber yield and quality – improved trees are bred for their form - light, horizontal branching and strong apical dominance - meaning fewer knots and timber defects and far greater volumes of high quality recoverable timber.
- Lower establishment and maintenance costs – improved trees will establish and grow more quickly than unimproved stock, needing a shorter period of protection, spraying and mowing.
- Shorter rotation period – improved trees can reach their economic viability several years before unimproved trees, meaning that the value of a woodland can be realised more quickly.
- Greater carbon sequestration – the increased timber yield from improved trees means that they are more likely to be converted in to valuable timber products which locks up more carbon, rather than releasing it to the atmosphere if burnt as firewood.

Left: The end result – high value oak timber

Support Future Trees Trust

To ensure we achieve these challenging outcomes, we need support from everyone with an interest in growing trees for timber, to help us maintain our ambitious research programme, our ever-increasing profile and our growing lobbying influence. Making a donation to support our research will help us breathe new life into our woodlands. Please send cheques made payable to Future Trees Trust to Future Trees Trust, 3 Queen's Square, Chalford Hill, Stroud GL6 8EG.