

The Friendly Forest

Some interesting facts for you



Lots more information on the benefits of forests, including for wildlife, inside.

Staff and students discussing the benefits of forestry in a mixed species woodland at Ballyhaise Agricultural College, Co. Cavan.

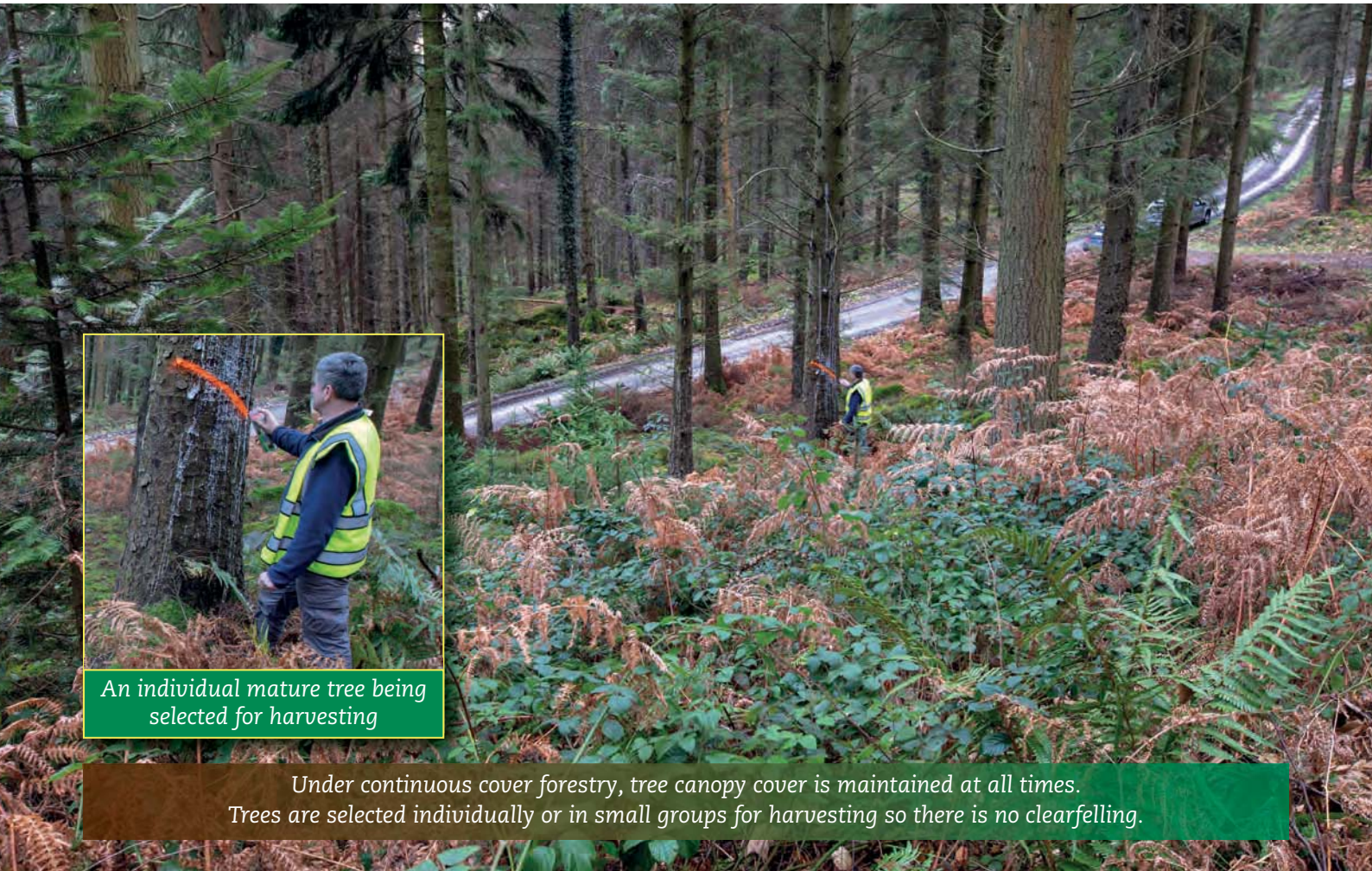
- Forest cover in Ireland is at 11% (778,000 ha) compared to an EU average of 34%.
- Almost half of Irish forests are privately owned.
- Nearly half of our stocked forests are less than 20 years of age.
- Ireland's forests store 312 million tonnes of carbon.
- Each year, our forests absorb the annual CO₂ emissions from 80% of the cars on our roads.
- Ireland's forests and woodlands are important habitats for many native species of flora & fauna.

Native tree species gradually began arriving in Ireland after the last ice age, about 11,000 years ago.

When man first arrived, about 9,000 years ago, Ireland was covered in mixed woodland, mainly oak on acid soils, elm and hazel on fertile areas, Scots pine and birch on the higher/poorer ground.

About 5,500 years ago, early neolithic farmers initiated woodland clearance to accommodate tillage and pasture. The history of our native woodlands is one of progressive decline, particularly since the middle of the 16th century. Key contributing factors included industrialisation (ship building along with iron, tanning (hides to leather) glass and cooperage production) and 'plantations'. These were the parceling out of tracts of land to settlers who cleared large woodland areas for agriculture.

Subsequent population increases in Ireland between 1700 and 1840 again placed a higher demand on our agricultural resources.



An individual mature tree being selected for harvesting

Under continuous cover forestry, tree canopy cover is maintained at all times. Trees are selected individually or in small groups for harvesting so there is no clearfelling.

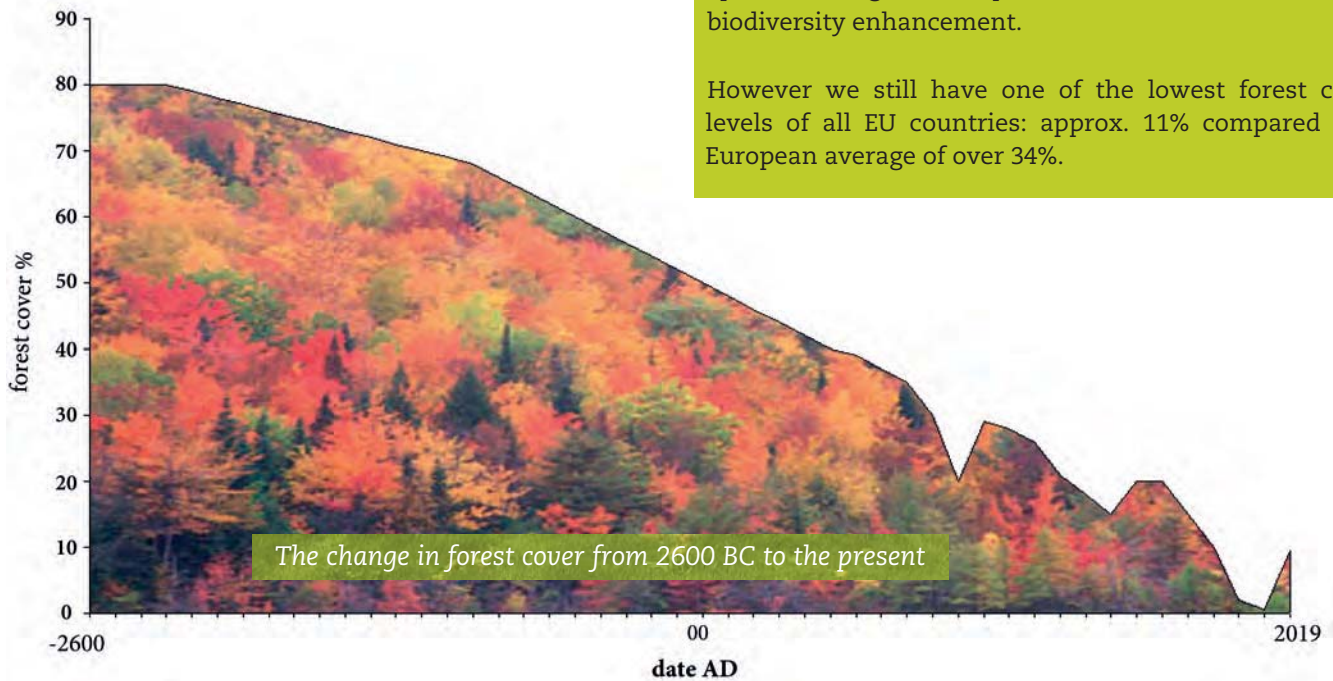
Over the years most of our native trees were cut down so that by 1928 only 1.2% or 89,000 hectares (ha) of the land was under forests.

The current area of forest is estimated to be 778,000 ha, the highest level in 350 years. Over 391,000 ha or 50.8% of the total forest area is in public ownership.

Private planting came to the fore from the mid-1980's with the introduction of a state planting grant and annual premium scheme.

Our national forest resource is made up of 71.2% conifers with broadleaf species make up the remaining 28.7%. All new forests are required to include at least 15% broadleaf species along with up to 15% retained areas for biodiversity enhancement.

However we still have one of the lowest forest cover levels of all EU countries: approx. 11% compared to a European average of over 34%.



The change in forest cover from 2600 BC to the present

Forestry for Farmers

Farmers accounted for 83% of private lands afforested between 1980 and 2018. The average size of private grant aided forest since 1980 is only 8.7 ha or 21.4 acres. Many farms can benefit from forestry as part of their farming mix, creating a valuable and growing asset for the future.

Forestry can provide a range of financial, environmental and social benefits on the farm. It can work very well as part of the farming mix, complementing drystock, dairying, tillage and other enterprises to the overall benefit of the farm. It provides a highly productive land use option for marginal land, fragmented parcels or out farms; creating a sustainable and valuable resource.



Planting some marginal land can provide a nice pension pot for retirement or a valuable legacy for the family.

Forestry can provide a secure farm income. Planting 8 ha of 15% diverse conifer/broadleaf forest on marginal land delivers an annual forestry premium of over €4,000 for 15 years. The potential payment can increase to over €5,300 per annum if planting of Native Woodland meets the landowners objectives.

Did you know that new native woodland (riparian woodland) can be combined with an unplanted buffer strip (biodiversity zone) to protect waterbodies from nutrients, silt or other threats. This natural solution is called 'Woodlands for Water'

Farmers have many options under the DAFM Forestry Programme, including productive broadleaf and conifers, agroforestry, native woodland and forestry for fibre.



A native woodland option for the farm.

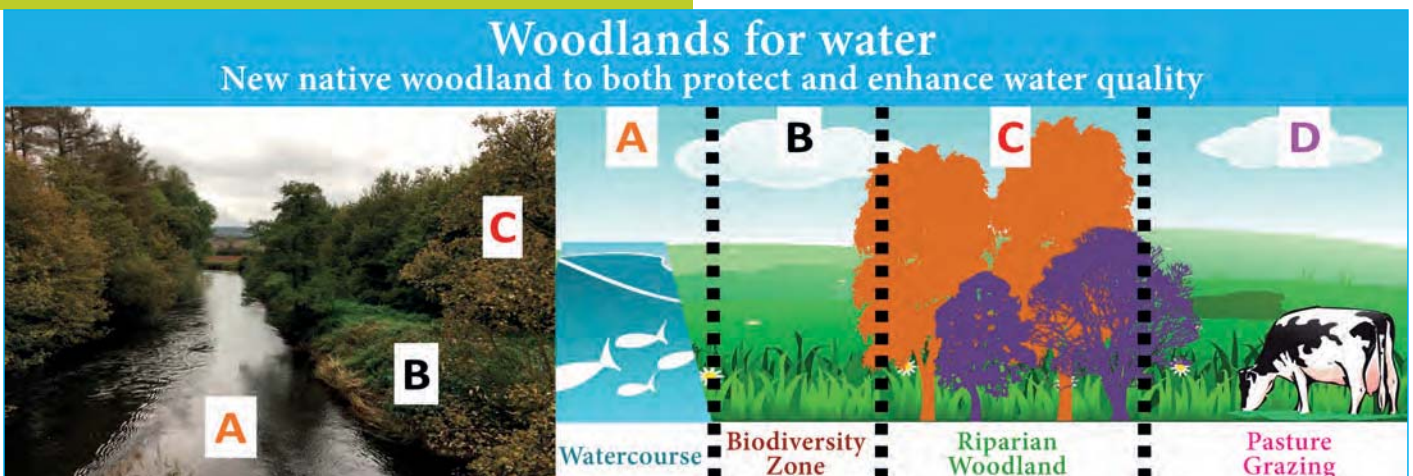


Agroforestry option combining sheep and trees.



A farm forest fitting in well in the landscape

Source: Magner Communications



Forests for Recreation

The value of Irish forests for recreation is estimated at €179 million per annum, with an estimated 29 million visitors each year from home and abroad.

Did you know that Coillte manage our state forest resource which now extends to over 391,358 hectares of forests, woodlands, parks and open areas dedicated to nature?

Funding is available under the Department of Agriculture, Food and the Marine (DAFM) NeighbourWood Scheme to support the development of attractive close to home woodland amenities (called 'neighbourwoods') for public use and enjoyment.



Ballyseedy Wood, a haven for recreation and tranquility near Tralee, Co. Kerry.

Many people visit our forests every year to enjoy the clean air, healthy exercise, birds, native wildlife and the beautiful scenery. There is so much to do: walking, cycling, orienteering, camping, ziplining, nature watching, fishing, orienteering, horse-riding, boating and much more including benefits to our physical and mental health as well as our wellbeing.

So our forest parks are a great attraction for urban visitors and tourists alike. Research also shows that time spent in the forest has significant benefits to our physical and mental health and wellbeing.

Some Great Forest Parks to Visit

Avondale Forest Park in Co. Wicklow is the Home of Irish Forestry and of Charles Stewart Parnell, one of our most famous politicians. The state purchased Avondale in 1904 and its magnificent 204-hectare estate. Here, the tree species which are now commonplace in the Irish forest industry were planted and trialled for the first time in experimental plots. Laid out along the lines of a continental forest garden, these plots, laid down from 1904 to 1913 are still visible today along the majestic sweeping lawn known as the 'Great Ride'.

Located just outside Cavan town, Killykeen Forest Park is popular with families, bird watchers, walkers and anglers. In West Cork one can visit Gougane Barra Park near Macroom and check out the St Finbar's Church. If you are in Co. Kerry why not visit Gleninchaquin near Kenmare. This park includes a spectacular 140 metre high waterfall, as well as scenic woodlands and is framed by the McGillicuddy Reeks along the horizon. In Limerick, Curraghchase is an award winning park with over 300 hectares incorporating parkland, trails, mixed woodland and an arboretum.



The delightful Discovery Park in Castlecomer Co. Kilkenny provides a vast range of recreational and educational activities.

Forests for Environmental Benefits

Forests capture and store water, playing a vital role in providing drinking water for millions of people around the world. When managed appropriately, forests can regulate water, reduce the effects of floods and help prevent soil erosion. Trees located near water courses can provide an important source of food for aquatic life, can enhance our landscape and connect habitats which greatly benefit wildlife.



As well as protecting our waterways, trees can greatly enhance our landscape.

Trees and hedgerows are part of our cultural heritage and have always been highly valued for the shelter they provide for livestock and crops alike. As a forest grows, it provides increasing shelter for adjoining fields, farm buildings and family homes.

Wood is Good for the Irish Economy



We have a thriving, export-oriented forest industry.

‘Wood is an extraordinary renewable resource and taking it from well-managed forests benefits forests and the planet, but on their own, natural forests can't supply all timber that we need.’

Sir David Attenborough.

Sustainable wood production provides the timber we need and can divert logging away from (and helps protect) natural forests. It provide timber for processing, construction, bioenergy and many other uses. It is a driver for employment, innovation, exports and wealth creation.



When trees are felled, sawlog and stakewood timber assortments are brought to sawmills, where **construction timber, pallets, garden products, fencing products** and **wood chips** are produced. We have world class, export-oriented sawmills, eight of which supply 90% of sawmilling products. Smaller sawmills also are very important to our local economies. We also have three modern mills in the Republic of Ireland that manufacture **wood-based panels**. The raw material used consists of small logs (pulpwood), sawmill residue (sawdust, woodchip and bark) and recycled wood:

- **Ma sonite** produces moulded door facings in Co. Leitrim.
- **Medité-Europe** produces medium density fibreboard (MDF) in Co. Tipperary.
- **Smartly-Europe** produces oriented strand board (OSB) in Co. Kilkenny.

Did you know that in 2018, 3.69 million cubic metres of roundwood (including firewood) was harvested in Ireland? Over one million cubic metres came from private forests. The UK is a key market for 84% of Irish timber exports and in 2018 our timber exports were valued at €450 million.

Wood is a great renewable and sustainable material. Harvested wood products (e.g. construction wood,) store carbon over long periods. Building with wood consumes much less energy than using concrete or steel.

Did you know that for every tonne of wood products used instead of concrete, there could be an emission avoidance of about 2 tonnes of CO₂?



Stakewood produced from sustainable, local forests in the sawmill of Larry Byrne & Sons Co. Wicklow.

Our forestry sector is a major player in our rural and national economy. It currently employs an estimated 12,000 people and every year it contributes up to €2.3 billion to the Irish economy. For every 100 jobs in the forestry sector an extra 90 fulltime equivalent jobs are provided in other sectors such as tourism. The industry has the potential to double in size over the next 10 years.

World's Tallest Wooden Building

Did you know that Norway currently holds the world record for the world's tallest wooden building at 85.4 metres high? The Mjøstårnet Tower in Brumunddal, Norway is an 18-storey structure constructed from engineered wood. In constructing the tower, builders used GLULAM and laminated timber beams: both strong enough to replace carbon intensive concrete and steel and requiring less energy to produce. Solid wood creates its own fire-resistant surface because the outermost layer chars when exposed to fire, protecting against further fire damage. Is this a template for the development of sustainable cities of tomorrow?



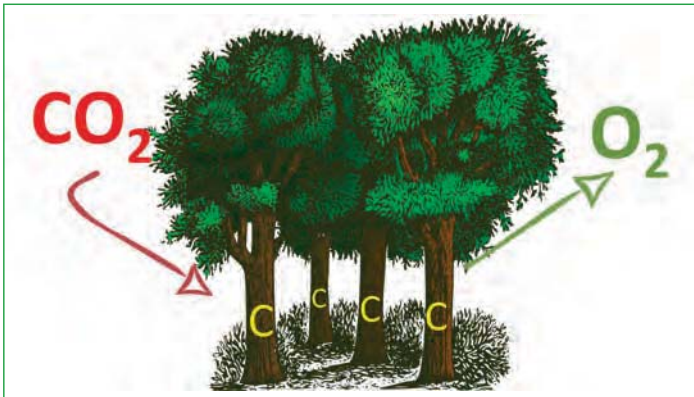
The Mjøstårnet Tower in Brumunddal, Norway. The worlds tallest wooden building.

Source: www.moelven.com

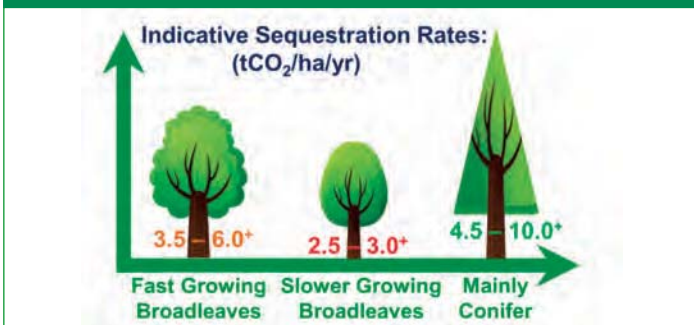
Forests Helping our Climate

'Around the world, climate change is an existential threat - but if we harness the opportunities inherent in addressing climate change, we can reap enormous economic benefits.'

Ban Ki-moon on climate change.



Trees play an essential role in tackling climate change. They take up (or 'sequester') and store carbon dioxide (CO₂) as they grow. They convert it to sugars and wood and release oxygen. Between 2007 and 2016, Irish forests sequestered 3.8 million tonnes of CO₂ from the atmosphere annually.



Harvested wood products also play a big role in tackling climate change as carbon is stored in the wood for the longterm. One cubic metre of processed wood can store approximately one tonne of CO₂ equivalent.

Wood from our forests is also a valuable source of renewable energy. Wood energy makes up about 40% of global renewable energy, as much as solar, hydroelectric and wind combined. In 2018, 40% of wood fibre used in the Republic of Ireland was used for energy generation, mainly in the forest products sector.

Did you know that one tonne of wood chips at 40% moisture content can displace up to 300 litres of oil at around half the price of oil. The award-winning Astellas Ireland Company Limited Kerry Plant, uses a high-spec wood fuel boiler and locally-sourced conditioned wood chips for its heat and base steam demand. In doing so it displaces one million litres of fossil fuel per annum.



Astellas Ireland Company Limited, Kerry Plant; an award winning pharmaceutical facility; using locally-sourced wood chip for its heat and base steam demand.



Native Irish Wild Life Thriving in the Forest

The Irish hare, red deer, red squirrel, pine martens, red foxes and badgers all populate our forests. The pine marten is considered one of the rarest wildlife species in Ireland and its presence has helped the recovery of the native red squirrel.

Pine cones make up a large part of the diet of the red squirrel but they also eat many seeds and other nuts depending on availability. Their diet also includes fungi, green shoots, fruit and berries. Birds found in your local forest will include the Chaffinch, Goldcrest, Robin, Coal Tit, Jays and Wren. Jays are a beautiful bird, a member of the crow family and will be heard before being seen.

Did you know that all new forests include a minimum of 15 percent broadleaves as well as up to 15 percent of the planted area dedicated to biodiversity enhancement (open areas, retained habitat, access routes and hedgerows)? The biodiversity potential of forests can be optimised with good planning and sustainable forest management.



Jays are among the beautiful birds found in your local forest. You will usually hear them before you see one. So go for an enjoyable and healthy walk in your local forest and experience some of nature's wonders.



Pine martens are largely concentrated in western counties and the midlands of Ireland. They thrive in forests and their predation on the grey squirrel has helped the recovery of the native Irish red squirrel.



The native Red Squirrel is now starting to thrive in forests in Ireland and as the above photo shows, they love pine cones.

Promising Research on Ash Dieback

Ireland has relatively few diseases that affect European mainland forests. The barrier created by the sea, coupled with strict phytosanitary controls has helped to keep our forests relatively disease free.

Ash Dieback is a serious fungal disease of ash trees. It has spread across Europe and was first noted in Ireland in 2012. The disease is now prevalent throughout most of the island of Ireland. It can affect ash trees of any age and any setting, resulting in tree mortality in most cases, with young trees succumbing to the disease very quickly.

Collaborative Teagasc research is at the forefront of the fight against Ash Dieback. Important focus areas include developing ash tree genetic resources with a high level of tolerance to the disease and also developing a range of suitable management options for owner of ash woodlands.



Tolerant ash being propagated in Teagasc Research Centre, Ashtown, Dublin.

Dr Miguel Gorriz of Teagasc has sourced ash trees that are highly tolerant of Ash Dieback through collaboration with European institutions and verification of this tolerance is ongoing. Research is also ongoing on micropropagation of these tolerant ash in the laboratory. Micro-propagation allows an unlimited number of copies to be made without the need for rootstocks or grafting. These copies can be used for establishing seed orchards that can produce seed of tolerant trees. While this work shows significant promise, it will take some time to identify suitable genotypes and produce ash with high disease tolerance for planting in our future forests.

Dr Ian Short of Teagasc is researching management options for owners of ash woodlands, including those affected by Ash Dieback. The objectives are to provide templates for establishing new and viable forests and to increase their future resilience. One approach involves felling of small groups of trees (coupes) through the woodland and planting of felled areas with suitable alternative species (e.g. oak, hazel, birch); this forms a basis for a future tree crop to develop. The choice of tree species for replanting should be specific to the site and crop conditions as well as meeting owner objectives.



Small coupe felling and replanting with alternative tree species in an affected ash woodland.

A Future Use for Our Wood?

Did you know that this supercar prototype from Japan is made almost entirely from wood? Almost every component is made of nano cellulose fibres (NCVs). These are reported to be five times as strong yet one fifth of the weight of conventional steel panels. Is this part of the future for our valuable forestry and wood sectors?



Source: dlmag.com

For much more information on all forestry issues, log onto:
www.teagasc.ie/forestry

We wish to thank Forest Industries Ireland for the graphics supplied.

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