Broadsheet

The Magazine for Broadland Tree Wardens

Issue 225 - December 2023

Happy Christmas

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Inside this issue

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It is circulated free of charge to Broadland Tree Wardens parish and town councils, parish meetings and other interested parties.

Any views expressed are not necessarily those of the Broadland Tree Warden Network.

Happy Christmas

IT is hard to believe that this is our twenty-fifth Christmas edition of Broadsheet. Forget "white Christmas". I am celebrating a "silver Christmas" and I can't explain just how proud I am to be doing so. It is one hell of a Christmas present!

So, for the twenty-fifth time, Lesley and I want to wish you and your families a very happy, safe and peaceful Christmas 2023.

We shall be spending the festive season at home this year … on our own! Yes, it's great to spend the time with our family, but we are looking forward to doing things "our way", when we wish … without a load of loud music that we don't really like.

We shall sit down for a quiet, contemplative, Christmas dinner. A nut roast I expect, accompanied by (maybe) a decent vegan red wine, being thankful that we have been lucky to reach the ages we have with a good pension and such a wonderful family.

Then, after dinner, followed by a cognac (or two) I can fall asleep in the armchair as Lesley becomes increasingly annoyed with me. Ah. Bliss!

Seriously now, as we reach the end of 2023 we have a lot to be grateful for … despite the efforts of others and, of course, climate change.

Yes, we are fighting to retain our trees and woodland, but spare a thought for those poor souls fighting to survive in Kibbutz Be'eri and Gaza. We must not forget those in Ukraine attempting to resist the might of Russia either.

Both of these conflicts could so easily escalate into unimaginable heights. Let's face it, if some "idiot" presses a button none of us will be here this time next year!

This year, just before we feast, Lesley and I will raise a glass "to absent friends", a tradition that, sadly like many, appears to be fading away. This year we shall include in that toast all those simply fighting to survive another day.

They may be the innocent millions simply searching for a crust to keep them alive, maybe washed down with a glass of filthy water, or those huddled together, terrified, hoping to avoid being murdered by marauding extremists or avenging fanatics.

I will include in my thoughts our two departed colleagues, Judy Tyler and David Johnson, at what will be a particularly difficult time for their families.

So, gather your loved ones around you, hold them tight and keep them safe and we wish you a very happy, peaceful Christmas.

I WAS most disappointed to read on the BBC News website that, once again, people have been warned not to pick mushrooms in Epping Forest.

The City of London Corporation, which conserves the ancient woodland as a registered charity, said the fungi were vital to the health of the forest's one million trees. It said the fungi play an important role in protecting the roots of trees, providing water and vital minerals.

The authority said those caught foraging faced prosecution and a criminal record.

Epping Forest, which stretches from east London into Essex, is a Site of Special Scientific Interest and a Special Area of Conservation. It is one of the few remaining extensive natural woodlands in southern England.

The forest is home to 440 rare and endangered fungi species. Conservationists say picking them damages the valuable forest biodiversity that has developed over the past 10,000 years.

They are also a valuable food source for animals, such as deer, and many rare insect species depend on them for survival.

Fungi are protected under Epping Forest bylaws, and the City of London Corporation has prosecuted nine people for breaches since 2022, with offenders receiving criminal records. One person was caught with a 49kg haul, equivalent to multiple large black sacks.

Ben Murphy, chairman of the City of London Corporation's Epping Forest and Commons Committee, said they wanted people to come and enjoy the ancient woodland, but said: "I hope by explaining why Epping Forest's fungi is so unique, we can change behaviours and discourage foragers from this location."

MOLLY WILLIAMS, writing for the Yorkshire Post reported that some campaigners who fought against the infamous street tree felling scandal are still waiting for personal apologies from Sheffield Council despite the deadline having passed.

Earlier this year the findings of a long-awaited inquiry into the infamous Streets Ahead programme that aimed to fell 17,500 street trees as part of a £2.2 billion contract between the council and Amey were published.

The inquiry found the council overstretched its authority in taking drastic action against campaigners, had serious and sustained failures in leadership and misled the public, courts and an independent panel it set up to deal with the dispute.

In a public apology, the council said: "Protesters and campaigners were maligned, injured and experienced physical, emotional and, for some, financial stress."

The council promised to apologise personally to those affected either in writing or formally face to face by October 31 as part of its reconciliation plans, but several months later Calvin Payne, a prominent protester, said he

was one of many people still waiting for a personal apology from the authority in a full council meeting last week.

He was arrested and detained for eight hours by police and dealt three suspended prison sentences six years ago as a result of the council's legal action against campaigners. Several others faced similar convictions.

These convictions remain on Mr Payne's record despite the council stating in a public apology that proceedings were "an unwise course of action".

Council leader Tom Hunt said the authority could not exonerate those found guilty of breaching its injunction but it would do "everything possible" to mitigate any ongoing challenges they face, but Mr Payne is still waiting for the council to act.

He said: "[There has been] very little effort to apologise. I've not had a satisfactory apology. I've not had a personal apology. I have not been offered a personal apology, nor have many other people.

"The people that took those decisions – took the court action – have moved on and nobody has been held to account for that. I am held to account for that all the time with these sentences. I was proven right and I still face the consequences."

Mr Hunt said he knew the process had taken longer than expected.

He said: "We cannot undo what has happened but we do want to mitigate the impact of our actions as much as we can. A part of that has been the apology process. I've personally been involved in that and I know in my experience of doing so it has brought into sharper focus the personal fears and worries that engendered at the time and since.

"We need to be mindful of progressing the apologies in a way that is consistent and not taking missteps along the way."

Graham Wroe, chair of Save Norfolk Park Trees and committee member of Sheffield Tree Action Group (STAG), said he had received a personal apology at the end of September.

The apology was written by James Henderson, the council's director of policy and democratic engagement, who started by saying sorry for the apology taking longer than expected.

WHILST I always try to keep the Christmas edition of Broadsheet us light, cheerful and uplifting as I can, I must comment on our Network AGM.

You were all given ample notice of the date and venue of the AGM but the attendance was … well…PATHETIC!!!.

We have 38 Tree Wardens covering 26 of Broadland's 63 parishes, but between you we saw just 9 Tree Wardens, of which 6 were Executive Committee members, plus 3 Tree Wardens. 3 of you sent apologies for absence due to prior commitments.

So, 26 of you simply couldn't be bothered to attend or send an apology for absence. Do I, therefore, assume that 68% of you have lost interest in being Tree Wardens?

It was made even more embarrassing by the fact that both Mark Symonds and Jamie Henry attended from Broadland District Council. They must have wondered why they give us such valued support.

I have to ask "are you unhappy with our Network?" Of course, my answer would be then why didn't you attend the meeting?

If you would prefer a different "leadership" and/or direction, then why didn't you attend and make sure that you got that?

I will gladly step aside if that is the wish of you all. Indeed, I have asked on several occasions for someone to "shadow me" for a year so that they can eventually take over in the smoothest way possible.

I'm sorry, but you have to understand that we have reached the point of "use it or lose it". Either we have more interest and input in the Network or we may not have one this time next year.

It is up to you!

SO, on that miserable subject I shall end this last Editorial of 2023. Has it been a good year? I don't know. I guess that only time will tell.

So once again, on behalf of Lesley and myself, I wish you all and your loved ones a very happy, safe and peaceful Christmas.

See you all next year.

John Fleetwood

The Future (or Lack of it) for Our Forests and Woodlands

THE last few weeks have seen the publication of several research papers and newspaper articles dealing with the future of our precious forests and woodlands. Whilst the future looks bleak, we can halt or lessen the effects of climate change, or compensate for them, by taking heed of the advice and warnings now being widely given.

I have put together several articles that I believe to be credible and worth reading as you digest your Christmas dinner.

If they give you indigestion then that means that you believe them. If they don't … well let's just say that you were warned!!

Seriously though, it is time to wake up and smell the coffee. Time for effective change is rapidly running out.

PHOEBE WESTON, writing for The Guardian, reported that researchers have warned that UK forests are heading for "catastrophic ecosystem collapse" within the next 50 years due to multiple threats including disease, extreme weather and wildfires, with trees dying on a large scale.

The study, published in the journal Forestry, was put together by a panel of 42 researchers, with 1,200 experts consulted. Lead author, Dr Eleanor Tew, head of forest planning at Forestry England and visiting researcher at the University of Cambridge, described the finding as "sobering and alarming".

Many threats researchers have warned of are already affecting forests and woodlands. The fungal disease ash dieback will kill up to eight out of 10 of the UK's ash trees. In 2021, winter storms destroyed about 12,000 hectares (30,000 acres) of forest in Britain. Climate projections show storms, heatwaves, droughts and floods are likely to become more common and more severe.

"The problem comes when you get all of those things happening at the same time as multiple, interrelated threats," said Tew. "That just overwhelms the forest, and you basically get trees dying and the forest ecosystem collapsing

… that has massive landscape impacts, and significant impacts for society."

Catastrophic ecosystem collapse is not inevitable, and is not yet occurring in the UK's forests. "We do have time to make a difference, and there is a lot we can do to make our forests more resilient," said Tew, who described the paper as a "call for action".

Solutions include increasing the diversity of tree species within a wood, planting trees of different ages, promoting natural regeneration and managing deer populations. People can help by using the online Tree Alert tool to report possible tree pests and diseases. Tew also said people should make sure their boots are clean before walking in a new woodland to avoid spreading disease.

The long-term impacts of forest ecosystem collapse would include loss of timber, carbon sequestration, poorer air quality, water retention and human enjoyment. In some parts of Europe, there has already been ecosystem collapse within forests: storms, drought and bark beetle outbreaks in Germany have destroyed the equivalent of 250,000 football fields of forest.

All this is often made worse by management strategies that create forests full of the same species and age of tree, making them more vulnerable.

The forestry industry has to plan in advance, Tew said: an average conifer in a plantation can take up to 60 years to reach maturity, and a broadleaf up to 150 years. "Forestry has always been about planning for the long-term, and we're at a time of huge change," said Tew.

The government plans to plant 30,000 hectares of forest every year by 2025, which is double current planting rates. The UK is one of the least forested European countries, with a total coverage of 13%. A 2021 report from the Woodland Trust found that just 7% of the UK's native woodland was in good condition.

Other challenges facing forests outlined in the paper include the use of water for trees coming into increased conflict with human needs for water for homes and farmland, particularly as droughts and floods become more frequent. Forest management is projected to become harder due to wetter winters and hot summers.

The research said that protecting soil was also a priority, as well as preparing for the impacts of tree viruses.

Dr Elena Cantarello from Bournemouth University, who was not involved in the study, said her own recent research in south-west England "comes to similar conclusions". She added: "Catastrophic forest ecosystem collapse, identified in Tew's [paper] as the most highly ranked issue, is something which was also identified in the majority of the ecosystem services and biodiversity variables we studied."

I WAS most interested to read an article published on www.phys.org/news titled "Forests With Multiple Tree Species are 70% More Effective as Carbon Sinks Than Monoculture Forests"

To slow the effects of climate change, conserve biodiversity, and meet the sustainable development goals, replanting trees is vital. Restored forests store carbon within the forest's soil, shrubs, and trees. Mixed forests are especially effective at carbon storage, as different species with complementary traits can increase overall carbon storage.

Compared to single-species forests, mixed forests are also more resilient to pests, diseases, and climatic disturbances, which increases their long-term carbon storage potential. The delivery of other ecosystem services is also greater in mixed species forests, and they support higher levels of biodiversity.

Although the benefits of diverse forest systems are well known, many countries' restoration commitments are focused on establishing monoculture plantations. Given this practice, an international team of scientists has compared carbon stocks in mixed planted forests to carbon stocks in commercial and best-performing monocultures, as well as the average of monocultures.

Their work is published in Frontiers in Forests and Global Change.

"Diverse planted forests store more carbon than monocultures—upwards of 70%," said Dr Emily Warner, a postdoctoral researcher in ecology and biodiversity science at the Department of Biology, University of Oxford, and first author of the study. "We also found the greatest increase in carbon storage relative to monocultures in four-species mixtures."

The researchers analysed studies published since 1975 that directly compared carbon storage in mixed and single-species forests, and combined this with previously unpublished data from a global network of tree diversity experiments.

"We wanted to pull together and assess the existing evidence to determine whether forest diversification provides carbon storage benefits," Warner explained.

The mixed planted forests assessed in the study ranged in species richness from two to six species. In the data set the scientists worked with, four-species mixtures were the most effective carbon sinks. One such mix was made up from different broadleaf trees, which can be found across Europe. Mixes with two species also had greater above-ground carbon stocks than monocultures and stored up to 35% more carbon. Forests made up of six species, however, showed no clear advantage to monocultures.

Accordingly, the researchers were able to show that diversification of forests enhances carbon storage. Altogether, above-ground carbon stocks in mixed forests were 70% higher than in the average monoculture. The researchers also found that mixed forests had 77% higher carbon stocks than commercial monocultures, made up of species bred to be particularly high yielding.

"As momentum for tree planting grows, our study highlights that mixed species plantations would increase carbon storage alongside other benefits of diversifying planted forests," said Dr Susan Cook-Patton, a senior forest restoration scientist at The Nature Conservancy and collaborator on the study. The results are particularly relevant to forest managers, showing that there is a productivity incentive for diversifying new planted forests, the researchers pointed out.

While showing the increased potential of mixed forests to store more carbon, the researchers cautioned that their study is not without limitations, including the overall limited availability of studies addressing mixed vs. monoculture forests, particularly studies from older forests and with higher levels of tree diversity.

"This study demonstrates the potential of diversification of planted forests, and also the need for long-term experimental data to explore the mechanisms behind our results," Warner said. "There is an urgent need to explore further how the carbon storage benefits of diversification change depending on factors such as location, species used and forest age."

IT was refreshing to read on the European Data Journalism Network that a new EU agricultural policy has brought a qualitative change in forest-fire protection. Governments will now spend twice as much as before on measures such as reforestation to reduce soil drying.

Wildfires are on the European Union's agenda. In the farming sector, fire prevention and control costs considerable sums, as does land restoration in the aftermath of fires. It seems clear that the EU's Common Agricultural Policy (CAP) will place much greater emphasis on this issue in the next seven-year EU budget, and that we are witnessing a change of approach.

In 2016, the EU allocated €1.7 billion (£1.479 billion) to mitigate damage caused by forest fires and other natural disasters as part of its rural-development programmes for 2014-2022. In the latest spending round this amount has been increased to €2.2 billion (£1.914 billion), mainly due to the rising risk of extreme weather due to climate change. There will also be more spending on biotic threats that can follow heatwaves and storms, such as bark-beetle infestations.

Over the same period, around €750 million (£652.54 million) has been provisionally ear-marked for reconstruction after natural disasters and fires. Such work does not always start immediately after the damage (eg fire), and the costs are only accounted for later. In other words, the exact sums cannot easily be known until the final payments have been made. Planning is therefore difficult, especially if the restoration work is dependent on natural processes, when spending may be incurred years later.

Among other things, rising temperatures have a tendency to dry out farmed soil. Hungary has a lot of arable land, which catches fire more easily when dry. One obvious solution is alternative land uses which allow more water to be retained in the soil. Zsuzsanna Ujj, programme officer of the Hungarian Association of Nature Conservationists, reminds us that Hungary has lost a significant part of its natural wetlands. In the past, one fifth of the Carpathian Basin was wetland or entirely water-covered.

"Ploughing may improve the soil for a year or two, but in the long term it damages this water-retention capacity," says the expert. She adds that cereal crops, in particular, do not tolerate surface water, so it is artificially drained. If the area were grassland, it would retain water, which would mitigate soil drought. Zsuzsanna Ujj points out that economic pressures do not encourage such land use. In practice, the most profitable crops are typically animal feed.

At the same time, Zsuzsanna Ujj considers it a major achievement that the new EU agricultural policy is encouraging a turnaround.

"Irrigation is not an economically viable way of producing crops", she cites by way of example. "You will not be able to irrigate as much as you used to." We asked Olof Gill, the European Commission's spokesman on agriculture, what the recent changes mean, and he pointed out that the strategic objective is to

increase forest cover.

"The new CAP plans take a lot of account of ongoing climate change and this is reflected in the design of forestry interventions," says the spokesman. "In projects of afforestation, agroforestry, and forest restoration, the EU is promoting the use of climate-resistant tree species. And while it is important to establish new forests or agroforestry areas, it is also important to modify existing forests to make them more climate-resilient."

Such investments and commitments are set out in the new CAP Strategic Plan. Forest resilience and adaptation to climate extremes are also being made a part of existing projects.

Current programmes call for the creation of 260,000 hectares of new forest and 16,000 hectares of new agroforestry by 2025. The total of the EU and member states' contributions is €2.1 billion (£1.83 billion) for afforestation and €40 million (£34.8 million) for agroforestry, which also covers the maintenance costs of the areas in question.

According to Olof Gill, the 2023-27 framework scheme will consist of twenty-eight CAP strategic plans submitted by the 27 member states (the extra plan came from Belgium, which submitted two plans). Five member states (Finland, Ireland, Luxembourg, the Netherlands and Sweden) have not included forestry-specific interventions in their CAP strategic plans, but have indicated that forestry will be supported by the CAP, for example through national forest funds.

"The CAP Strategic Plans foresee around 180 forest-related interventions for the period 2023-2027, with a total planned public expenditure of €4.2 billion (£3.65 billion)," the spokesperson explained. This equates to a doubling of resources.

Zsuzsanna Ujj repeatedly stressed the importance of this development, particularly for Hungary. History has been detrimental to Hungary in this area: after the country lost a major part of its forests under the Treaty of Trianon, the authorities responded with large-scale tree-planting. But the reforestation on Hungary's Great Plain, for example, can be described more as a tree plantation than a forest. As a monoculture, this land is not resilient in the face of climate change and disease. In particular, densely-planted pine forests are full of resin, which makes ideal tinder for forest fires.

"Today, 25% of the country is said to be forest, but a large part of this is tree plantations. Forests are a more complex ecosystem. They can, for example, recover more easily after a fire than a habitat in poor condition," explains the expert.

The European Commission provides two examples of projects that could represent the future. In Poland, 22,500 trees were planted as part of the reforestation of an agricultural area. The beneficiary of the project has committed to planting 1,000 more trees each year, including pine, beech, oak, alder and birch. In Slovakia, an area of 145 hectares was planted with nearly 600,000 saplings in four years, using five different tree species. The programme was aimed at restoring the production potential of damaged forests through deforestation, reforestation and the preservation of young forest stands. Such initiatives, intended to improve climate resilience, have received €1.5 billion (£1.3 billion) from the EU over the last budget period and a similar level of spending is expected over the next seven-year budget period.

Zsuzsanna Ujj says that Hungary shows encouraging signs. She sees an openness among farmers towards water conservation in the soil. In the ongoing debate on this whole subject, the approaches of agriculture, nature conservation and water management are converging. The Hungarian Association of Nature Conservationists is actively involved in this process.

A 2008 ministerial decree in Hungary sets out obligations for forest-fire prevention. This includes the following:

Forest-fire protection planning is needed. Depending on the size of the areas at high or medium risk, the forest manager must prepare a protection plan, if only in outline.

The buffer zone must be kept clear of combustible undergrowth, twigs, shrubs and trees.

When afforestation is carried out, no seeds or seedlings may be planted in the firebreak. The firebreak shall be a minimum of 3m wide, free of all combustible material, covered with soil, and shall be maintained by the forest manager in a continuous state of maintenance, ie free of weeds and other combustible material.

When burning dry plant parts and waste in the protection strip between the railway or road and the forest, as well as in the wooded ditch along the roadside, the rules on occasional fire-related activities shall be observed.

In addition, there are also rules that completely ban certain activities in forests, such as lighting fires, burning waste, and storing flammable liquids, and stipulations about alerting forest workers in case of fire.

WRITING on the Geography Realm website (well-worth a look), Katarina Samurović reported that In a world that annually loses 10 million hectares of forests to lodging and another 35 million to insect damage, creating new ones on a tiny scale may seem like a waste of time.

However, microforests or Miyawaki forests are increasingly seen as powerful allies in the fight for saving biodiversity and tackling extreme climate disruption. That is especially true for already overheated and crowded urban areas.

The unique afforestation approach of microforest projects is to mimic the creation of natural forests but at warp speed. Instead of taking a century or more like in natural forest ecosystems, microforest strategies aim to create dense, diverse pioneer forests in just two to three decades.

Sounds too good to be true? Well, some experts think so. As we'll discover later, not everyone is a fan of microforests.

Microforests, also known as Miyawaki forests, mini forests or pocket forests, are small-scale afforestation projects that, despite their limited size, aim to create dense, diverse, and rapidly growing native forest ecosystems.

Although you may think that the word "microforest" refers to any small forested area, in reality, the term is mainly used synonymously with Miyawaki forests. The connection is logical. Most mini-forests today were developed based on the pioneering work of Japanese botanist Akira Miyawaki. The concept involves mimicking the soil structure, plant community structure, and biodiversity of natural local forests emerging in a condensed space.

Several factors differentiate a microforest or Miyawaki forest from just any small forested space.

Microforests are densely planted with various native tree and shrub saplings and plant species, often at a rate of two to five per square meter. The high density is the key to rapid growth because plants compete for the light coming in only from above.

Miyawaki forests are multi-layered. Species to be grouped should belong to different forest stories. For example, a tall tree, a small tree, and a shrub. This way, we get a layered natural-type forest that supports various ecosystem functions.

Unlike average urban planting projects where young trees are simply laid down in the soil (perhaps with some basic soil amendments), Miyawaki forests demand major soil work. The soil that the saplings are planted in needs to resemble mature forest soil – rich in humus and slowly decaying organic matter, with excellent soil retention properties.

The plant species that form the micro or Miyawaki forests' plant selection should include native species for the region in question. Although it's often tempting to try imported

Microforests are characterized by a multi-layered forest with trees planted close together to encourage rapid growth of the understory. Photo realistic diagram created using Adobe Firefly.

species with desirable characteristics, native tree and shrub species are best adapted to local environmental conditions and also best suited to support local biodiversity.

Microforests grow at an accelerated rate compared to conventional forests and tree plantations. Relevant resources claim they grow 10 times faster and 30 times denser, reaching maturity in 20 to 30 years. In contrast, it can take decades or even centuries for natural forests to develop into rich ecosystems.

Miyawaki-type forests need maintenance in the form of watering, weeding, and mulching only for the first two to three years. Once they're established, they become virtually maintenance-free and self-sustaining. No pruning is needed.

Microforests can be created in small areas, making them suitable for dense urban settings, such as parking lots, schoolyards, or other compact spaces. In theory, a minimum space for a Miyawaki forest is a space of 4 by 3 meters (12 to 16 m^2, or 129 to 172 ft^2). Some practitioners say a minimum total area of 70 m^2 is required if you want to create a feeling of a real mini-forest.

Microforests offer many environmental benefits, local and beyond.

One of the most significant physical benefits of Miyawaki forests in urban areas is their cooling effect. Miyawaki forests help decrease the urban heat island effect, which is especially significant during heat waves. Researchers have estimated that 30% larger tree cover could have prevented 40% of heat-related deaths in the sweltering European summer of 2015.

Other studies from various parts of the world consistently show that, on hot days, tree cover can make the urban environment 12°C cooler than its non-shaded surroundings. A notable Miyawaki urban afforestation project in Amman, Jordan, already has a noticeable cooling effect of around 14°C despite forests being young.

Microforests often form surprisingly species-rich ecosystems, similar to the biodiversity of Ethiopia's church forests. Besides native plants, it features fungi, invertebrates, birds, reptiles, and mammals. A return of the species extinct in a particular neighbourhood is something enthusiasts commonly observe after a microforest is planted.

A Dutch study recorded 943 species of plants and animals across 11 studied microforests in The Netherlands – 636 animal and 298 plant species, excluding the standard 40 species planted during the mini-forest formation.

As James Godfrey-Faussett, a forest restoration specialist at the SUGi Pocket Forest project, explains, "Within a forest, biodiversity means balance. Birds control pests, insects pollinate plants and beneficial fungi keep the trees healthy. Every organism has a role to play, and all these roles interact. And if you build a healthy, biodiverse habitat that can look after itself, it becomes self-sustaining. You can step away and let nature get to work."

It's common knowledge that trees suck up carbon dioxide from the air and build it into their biomass. As tiny forest trees grow fast, they're very good at sequestering carbon.

The Duch microforest data show that each microforest stores 127kg of CO_2, but once fully grown, each should be able to store around 250 kg.

Miyawaki himself insisted that the local community needs to be a part of every Miyawaki project so they could connect to the forest that would be theirs to enjoy and take care of.

Furthermore, the forest gives back. Relief from heat draws locals near the mini-forest, offering a pleasant space for socializing and community building. Japan is also the birthplace of the concept of "Shinrin-yoku" which is the practice of forest bathing to promote well-being and lowered stress levels.

In some areas, people are even willing to go the distance to visit. Miyawaki forests tend to become a local attraction. More people in the area means an inevitable boost for local businesses.

Other ways Miyawaki forests benefit our environment include combating air and noise pollution, collecting rainwater and helping prevent flash floods, stabilizing water table levels, establishing wildlife corridors, promoting soil health, and providing excellent educational opportunities for students.

Microforest benefits may sound too good to be true and that's precisely what many critics think.

High competition between the saplings results in high mortality as one Miyawaki forest continues to grow. Some estimations claim that only 15% of originally planted saplings can survive into the mature forest stage and that it just doesn't make sense to invest resources into so many young trees that are eventually doomed. On the other hand, Miyawaki advocates say that young tree die-off is a natural process for cleared forest space regrowth and that dead plant material feeds the soil and attracts wildlife.

Although you may conclude otherwise the first time you hear these forests are "maintenance-free," in reality, the Miyawaki method is expensive. That is mostly due to the soil building that precedes planting. All the soil amendments – from plant biomass to compost or manure to peat or coco peat – combined with machinery renting and consultation fees can make the expenses skyrocket, especially for larger projects. For example, just planting and soil amendments in Cambridge's Danehy Park Miyawaki forest had cost $18,000 (£14,647), as the New York Times writes.

Despite insisting on local species, not all locations where Miyawaki forests are planted have naturally thick forests that grow in rich, moist soil. In some places where Miyawaki forests are popular, like India, many microforests seem misplaced. Instead of restoring open forest or scrubland ecosystems, organisations that do Miyawaki-style reforestation sometimes disregard the authentic natural environment and plant mini-forests "by the book" but that don't really match actual local ecosystems.

Perhaps the greatest issue with microforest planting stems from a potential narrative and not the forests themselves because their creation can be easily used for greenwashing. By fostering a public image that mini-forests are some sort of environmental panacea solving everything from extinction to air pollution, they can be misused to justify cutting down old-growth forests or to cover up the environmental misdeeds of companies.

Corporations that try to present themselves as "greener" through planting projects include those whose subcontractors actively participate in the deforestation of sensitive habitats, as well as oil companies that are causing large-scale environmental destruction by fuelling climate change.

People tend to have strong – and contrasting – opinions on popular phenomena, and Miyawaki forests are no exception. Amidst the storm, let's try to be objective.

It is undeniable that Miyawaki-type forest ecosystems provide many benefits for local plant, animal, fungi, and human communities, as listed in this article. However, they are not a fit-for-all solution. It seems that they fit into regions where similar types of forests to those originally replicated by Miyawaki already exist – where hummus-rich soil and woody thickets are a natural occurrence.

Still, we shouldn't swap the "slow" rewilding and habitat restoration projects for lightning-fast growing forests. Other ecosystems vital to the stability and richness of our environment exist and deserve attention, funding, and, most importantly – conservation.

Another problem with the Miyawaki method is that it uses simple algorithms and mathematical calculations with a few elements to plan out and foster a very complex natural ecosystem. While experts who truly understand how these ecosystems work are likely to use it right, the popularity and approachability of the method make it easy for those who don't have such deep understanding (and appreciation) to misuse it.

Ecological gardeners and former microforest planters Fazal Rashid and Somil Daga emotionally write about what they witnessed in India: "(…) Many government agencies, NGOs, and hubris-filled youth (like our earlier selves) have latched onto [Miyawaki forests] as an easy way to make money and plant trees without needing to understand the nuances of ecology and biodiversity at all – and cause lots of damage in the process."

The pair goes on to suggest the damage could be reversed "by slowing down and actually forming a connection with plants, landscape and local communities" but still ends in a pessimistic tone "nobody seems to have the time for this, for such are the times we live in."

Like with most techniques and technologies, microforests aren't inherently good or bad – it's just a matter of how we utilize them. Miyawaki-type afforestation can indeed help local biodiversity and provide relief from increasing heat; likewise, they can be misused to put dense forest ecosystems where they don't belong while covering up corporate environmental destruction.

Two facts are clear: we need innovation like microforests to create a healthier environment in an increasingly urbanized world; however, we must remember that we cannot replace the perfect, already existing natural forests and other ecosystems that need our protection.

So what do Broadsheet readers think about the Miyawaki method? Why not e-mail your comments to Broadsheet and maybe we can set up a fruitful discussion? Go on. Do it now. You know it makes sense!

HELENA HORTON, Environment Reporter for The Guardian, wrote that woodland birds are facing an accelerating decline in the UK, with species at risk of extinction if the government does not act, experts have said.

Data released by the Department for Environment, Food and Rural Affairs (Defra) has revealed that almost all bird types are reducing in abundance, despite years of

warnings from nature bodies that action needs to be taken to protect habitats and save species.

Bird campaigners have warned that urgent measures must be taken to "bend the curve" of nature loss.

Fairing the worst are woodland birds. Their indicator of abundance has fallen by 37% since 1970, and by 15% in just the past five years, which suggests an accelerating decline. In general, bird indicators have fallen by 6% in the past five years and 15% since 1970. In the last five years just three species in the woodland bird group have increased – blackcap, nightingale and nuthatch – but 23 have declined.

The government said factors causing woodland bird decline included increased deer browsing pressure, which reduces habitats for foraging and nesting. Removal of hedgerows and the cutting down of woodland, removing habitat, are also driving declines. Defra said that restoring woodland would have a positive impact on species.

Prof Richard Gregory, the head of monitoring at the RSPB Centre for Conservation Science, said: "Setting aside the seabirds, which have only been partially updated, all the bird trends are dipping downwards, most prominently among woodland birds.

"In the last five years, the index dropped by 15%; only three birds in the indicator have increased, compared to 23 that have declined. A range of factors weigh down on woodland birds and bird populations more generally, related primarily to land use and climate change.

"Willow tits prefer scrubby, often wet, woodlands with lots of variety so a decline in active woodland management over many years, with burgeoning deer populations browsing out the lower vegetation, means we are losing the scrubby under-storey they need, and added to that our soils are drying out with climate change, and woods are becoming more and more fragmented with development pressure.

"A similar set of factors are implicated in the downturn of the lesser spotted woodpecker, a bird that needs mature, open and varied woodland, and lots of it in the landscape scale. In this case, the reasons for decline are less clear, low breeding productivity due to food shortage has been suggested, as well as climate change impacts, competition with the larger great spotted woodpecker and increased nest predation, but their demise remains something of a mystery."

More work needed to be done to boost farmland birds, experts said, because although their recent decline is less pronounced than woodland species at 8%, they have faced a 60% drop since 1970.

Vanessa Amaral-Rogers from the RSPB said: "Although the steepest rate of decline in the indicator was in the 1980s, it continues to this day, with a decline of 8% in the indicator in the last five years. This is not a situation without hope, however, with good evidence that well-designed and targeted higher tier agri-environment schemes can allow farmers to support species' recovery alongside productive farming. Nevertheless, the best evidence suggests that in order to halt and start to reverse declines in the farmland bird indicator these schemes would need to be implemented on a much wider scale."

The RSPB said there was some reason for hope, as without conservation efforts made by charities it was likely that declines would be steeper.

It added that some birds which were too rare to be included in the indicators, those which had fewer than 500 pairs such as the bittern and white-tailed eagle, were having great success, so conservation efforts were boosting some of the very rarest birds in the UK.

Gregory said: "Report after report tells us that nature can't wait. We have the knowledge to turn things around, but evidence shows that our actions must be scaled up considerably to be effective and bend the curve of nature loss. We need the UK government to act urgently on its commitments to address wildlife decline, and for all politicians to stand up for nature while there is still time."

IN another very interesting article, Helena Horton reported that experts have said that tree establishment should replace tree planting in government targets.

Billions of pounds of taxpayer money could be being wasted planting trees that end up dying because government tree targets are focused on planting rather than survival, they argued, amid concern that saplings were dying because they are often neglected.

Under the current system, scores of trees could be planted that are not then adequately monitored or looked after, but would count towards targets even if they died before maturity.

This, the experts said, puts the UK's net zero strategy and biodiversity targets at risk, as they rely on a vast expansion of woodland for carbon sequestration.

Speaking at the Royal Horticultural Society autumn conference, Tony Kirkham, former head of arboretum at Kew Gardens, said: "The target is for tree planting, I believe it should be for tree establishment. It shouldn't be about targets for planting a number of trees it should be establishing trees. We can all plant a million trees, but will they be alive five years down the line and that's what the problem is."

In the government's environmental improvement plan, published earlier this year, ministers committed to increase tree cover in England by 34,000 hectares (84,000 acres) by 31 January 2028 and increase tree canopy and woodland cover from 14.5% to 16.5% of total land area in England by 2050. This target is unlikely to be met if large numbers of saplings die, scientists have warned.

The 2019 manifesto also included a commitment to plant 30,000 hectares of trees every year across the UK by 2025.

Sara Loom, the CEO of the Tree Council, said: "We don't currently know enough about tree survival, the data is really patchy. There are some really hard economic reasons as well for tree establishment. The government target is 30,000 hectares of trees planted a year over the next 30 years. That's 900,000 hectares at 1,000 trees per hectare. That's a billion trees. Say it costs £11 to plant and care for each tree. That's a budget of £11bn. So increasing survival by just 5, 10, 15% – just do the maths."

There are fears among experts that trees planted to meet government targets will never reach maturity as there are not trained experts visiting them to water them.

Kirkham explained: "I do think that the chance is that many of the trees we plant will never reach that maturity but so what we need to do before we start tree planting is work out tree-planting budget for aftercare. I think lots of trees are planted and then the next contractor comes along, doesn't look after them and they die. It's not rocket science. Most of the time a tree dies because it needed a drink."

A Department for Environment, Food and Rural Affairs spokesperson said: "Tree-planting rates are at their highest for a decade, but we know there is more to do and will continue to work with partners to increase the nation's tree cover. We have invested significantly in woodland management with multiple grants in place to assist landowners and managers in establishing newly planted trees and many of these are dependent on recipients providing evidence of tree survival."

Sentinel Treescapes Project

I am pleased to report that, following we are now resuming our valuable work for the Sentinel Treescapes Project. The new funding round is now in place and we are due to meet Quddus Busari, a Doctoral Researcher with Fera Science Ltd, who will be leading the project from now, although all the previous "players" will continue to be involved.

It is a massive complement to our project team that we are required to continue. Under the project leadership of Paul Cowley we have achieved more than anyone could have imagined of hoped for.

In particular, I cannot heap enough praise on Joanne Collins (Thorpe St Andrew) and Anna Rodriguez (Acle) who have been the keystone from our side since the project began. Those two ladies have quietly got on with things, regularly returning invaluable data to the project.

Jo and Anna, I really cannot thank you enough. If we had medals to give out then you two would head the list. Thank you, thank you and thank you again.

If you would like to get involved in our work for the Sentinel Treescapes Project then contact either Paul Cowley or myself and we can explain what is required.

All we ask is that you make sure that you can devote the time necessary to make a contribution. It doesn't require a great deal of time but we have to know that the team can depend on your involvement.

Go on. Call or e-mail today. You can learn a great deal and it can be fun.

Restoring Redwood Forests

By John Reid, published on Yale Environment 360

ONLY 5% of California's redwood forests, that once stretched across coastal Northern California, have never been logged. An initiative to restore these forests is gaining momentum, aided by research showing that redwoods store more aboveground carbon than any forest on Earth.

Lyndon Johnson signed the bill that established the Redwood National Park in California 55 years ago. It was a long time coming, with proposals blocked in the 1920s, 30s and 40s by an industry that was beavering through the most valuable timberlands on the planet.

When the National Park Service recommended a park again in 1964, bipartisan support in the Senate, a nod from President Johnson and, I believe, the trees' own power to inspire eventually got a deal through Congress.

The national park was not the first redwood park. Several small California state parks had been created decades earlier, but it was the first from which most of the old growth had already been removed.

Created in two phases, in 1968 and 1978, 75% of our national park had been razed. Overall, the public owns over 100,000 acres (405 km^2) of injured, young forest on federal and state land. Land managers are trying to actively nurture some of them into new old growth. Tactics include one-time thinning of dense stands, prescribed fire, closing roads, dropping trees in streams to make salmon-friendly pools, ongoing selective logging to favour a few large trees, and just leaving the forests alone.

Restoration has drawn recent attention and picked up momentum with the launch of Redwoods Rising, an ambitious recovery program. Operations began in 2020 and have been gaining urgency, as the impacts of climate change have become a part of everyday life in the region and a growing body of science has shown that old-growth redwoods store more aboveground carbon than any forest on Earth, up 2,600 tonnes per hectare (0.01 km^2). That's three to five times as much as even the oldest secondary forests. "The only vegetation that grows faster is sorghum and sugarcane," says University of Washington scientist Robert Van Pelt.

However, a redwood forest still takes a long time to grow and, in an era when short-term thinking threatens the very liveability of our planet, it's extraordinary that people are investing careers and great sums of money in these projects. Redwoods get big after a few hundred years but take much longer to develop their most unique features, such as dazzling canopy gardens of ferns, berry bushes, small trees and fauna normally found on the forest floor. Van Pelt and colleagues point out that in a bona fide old-growth ecosystem some of the trees are old enough to fall over and decompose, forming "a sylvatic mosaic much older than its oldest trees".

While redwood forest restoration is largely a gift to the distant future, some life comes back quickly. Ben Blom, director of stewardship and restoration for Save the Redwoods League, says that coho salmon can reappear a year after roads are repaired and stop bleeding sediment into creeks. The response can be equally swift as sunlight returns to the floor of a thinned forest, diversifying understory plants.

Unfortunately, these laudable recovery efforts are currently confined, like the old growth, to tiny islands scattered within a battered forest landscape. Redwoods Rising, a partnership between the Redwood National and State Parks and the Save the Redwoods League, reaches just 600 acres (2.4 km^2) annually. The ancient redwood forest once occupied 2 million acres (8,094 km^2) of fog-bathed coastal hills, from central California to the Oregon border.

Of that, around 400,000 acres (1,619 sq km) of land have been paved, urbanised, and otherwise irrevocably converted. Of the remaining 1.6 million acres (6,475 sq km) still growing trees, only 5% has never been logged and contains the iconic forest giants, the tallest trees on the planet. Over 75% of redwood lands are privately owned and, in general, logged repeatedly. Trees that can live 2,000 years are cut after just a few decades of life.

California and the country should bring back a redwood landscape, not just groves. Save the Redwoods League calls for the protection and restoration of 800,000 acres (3,237 km^2), representing half the remaining 1.6 million. They estimate that over 300,000 acres (1,214 km^2) are already in some sort of conservation status, so an additional 500,000 acres (2,023 km^2) need protection.

We should do it. As experts noted in the respected scientific tome, The Redwood Forest, "Ultimately, only within intact ecosystems will the redwoods endure." Big, unbroken redwood forests, they explained, would be resilient to climate change; cover diverse habitats; and provide space for species with large ranges, like rare Pacific fisher and Humboldt marten. Large reserves also secure the headwaters of rivers where salmon will hopefully once again spawn in huge numbers, delivering crucial pulses of oceanic protein to the forest.

Big redwood trees hold carbon better than small ones because they have a higher proportion of rot-resistant heartwood. Big forests hold carbon better than small ones because their interiors are protected from wind and fire and stay connected to water sources. "If you drive down the Avenue of the Giants, you see almost every tree has a dead top," said Van Pelt, referring to the "beauty strip" of ancient redwoods, protected in the mid-20th century along 31 miles of Highway 101 to hide clearcuts from passing motorists.

While the carbon and biodiversity scorecards validate the idea of regrowing a big old growth forest, it is arguably even more important as an ethical reversal of the widespread destruction and often token conservation measures that have marked the first 180 years of non-indigenous occupation of the region.

Recovery need not preclude logging. One recent morning Mark Andre, a forester who manages the city of Arcata's Community Forest, met me on a suburban street where dogs and their walkers issued from cars. A ponytailed elder in yellow sneakers leading an ancient golden retriever greeted Andre as we walked into an area that was selectively logged in 2012.

I couldn't tell. It was one of the most sublime forests I've seen outside the old growth. Very large trees arrowed up into the fog out of a steep canyon. Sword ferns and huckleberries crowded their trunks, and a red-breasted nuthatch offered its squeeze-toy call into the otherwise hushed woods.

"We're monkeying with it to make it more like old growth, but it's still not the same. It has maybe a couple hundred years to go," Andre explained. The city's forest was clearcut over 100 years ago. Trees have grown back vigorously. The only thing missing two centuries from now, says Andre, will be the massive fallen logs of Van Pelt's "sylvatic mosaic". To thin the forest, since the 1980s, Arcata has cut enough

redwood to build a deck the size of 200 soccer fields. The city's environmentally vigilant public supports the harvest because its ultimate aim is to recreate a primeval forest.

Arcata Community Forest is a cozy 2,500 acres (10 km^2), but Andre said it could scale. "I don't see a maximum for this style of management." He cited many other local governments and Native American tribes doing it. The Yurok are California's largest tribe and live in the heart of the redwoods along the Klamath River. They have been steadily re-acquiring their ancestral lands and now manage 70,000 acres (283 km^2) for timber, traditional foods such as acorns and hazelnuts, basket making supplies, old trees, and the salmon that are seen as kin.

Still, the 75% of redwood lands in corporate hands are an impediment to healing half the forest. Even those certified as sustainable by the Forest Stewardship Council are never going to grow old. I asked Save the Redwoods CEO Sam Hodder what the league's strategy is to overcome this obstacle. "Be ready," he said, when willing sellers come along. Unfortunately, he added, the big redwood timber companies aren't willing because they're making too much money.

The timber companies weren't willing in 1968 either. They lobbied Congress to drop the park while cutting its ancient trees as fast as possible. A last-minute "legislative taking" amendment slipped into the bill by Senate staff was needed to immediately stop the logging. When companies are unwilling, that's what eminent domain is for. And while it's true that large industrial holdings are better for nature than a landscape of ranchettes with fences, driveways, and houses, it's also true that redwood companies already have real estate divisions with catchy names like getredwoodland.com selling off parcels.

Financially, the battered redwood lands of Northern California are well within our means. In 1998, San Francisco's prominent Fisher family bought 235,000 acres (951 km^2) for $200m (£163m) to form the Mendocino Redwood Company. That's $375m (£309m) in today's money. A deal that good is probably not available today, but adding a half million public acres should be doable for a sum in the low billions. Between 1993 and 2020, Californians approved 32 bond issues with an average price tag of $5bn (£410bn). An ambitious conservation plan that melds science, culture, economics, and local knowledge could open our wallets for trees that will pay back in many ways for a very long time.

Headwaters Forest Reserve is an area of 7,742 acres (31 km^2) set aside in 1999 near the city of Eureka in Humboldt County. It holds the last major chunk of redwood old growth saved, 3,088 acres (12.5 km^2). Like the national park, it's less than half unlogged forest. Unlike the national park and nearly every other redwood preserves, its parking lot isn't right next to the big trees. To reach them you walk three miles through a pleasant secondary forest of maples, hazel, alders, stinging nettle, and tall redwoods regrowing along Elk Creek. The next two miles switchback up through more new redwoods growing around massive spectral stumps.

Then, high on the slope, there are big trees — impossibly big — standing about on the sides of small valleys and in their bowls. The beginning of the old growth is like a threshold between beauty and magic. The giants make time visible. Which makes me think a thousand years forward. If an entire landscape of this should exist in the year 3023, students of our culture may be tempted to conclude that, in our time, forests were sacred.

The Wash: £2bn Tidal Barrage Plan Including Road and Port Unveiled

An article published on the BBC News website

PLANS have been unveiled for a £2bn tidal barrier scheme across The Wash between Lincolnshire and Norfolk. Developers said the 11-mile barrage, between Gibraltar Point and Hunstanton, could generate tidal energy and protect homes and businesses from flooding. The project would also include a dual carriageway, container port and could create 1,200 jobs, Centre Port said.

However, conservationists have raised concerns about its potential impact on a sensitive habitat for wildlife.

Under the proposals, the company said it wanted to build a "hydro-electric dam" and about 15 tidal turbines under the water to produce enough energy to power 600,000 homes. Centre Port said it planned to create the "world's first tidal energy-powered deep sea container terminal", which would have the capacity to handle up to four million containers annually.

The project would act as a flood defence scheme for communities in Norfolk, the Fens and parts of Lincolnshire, protecting against land-side flooding and tidal surges, the company said. It has won a six-figure investment from energy firm Centrica.

James Sutcliffe, chief executive officer of Centre Port Holdings, said it wanted to utilise The Wash's "tidal area of 780 km^2 for renewable energy production" and create job opportunities for young people.

He added: "Because we can shut down the turbines, which have sluice gates in them, we can then stop surge tide coming through from the North Sea, like it did in 1953 and 2013, and stop it damaging the countryside and preserving The Wash as it is today."

An artist's impression of the planned barrage in The Wash between Lincolnshire and Norfolk

However, Tammy Smalley, from Lincolnshire Wildlife Trust, said the scheme would prevent some animals, such as seals, from feeding off the coastline. She said "You'll lose the birds, you'll lose the seals, you'll lose the fisheries. You'll lose habitats that also sequester - capture carbon - like salt marsh. They're more effective at capturing carbon than trees. So it's a wholesale change for wildlife that's highly unlikely to survive."

Steve Rowland, from the RSPB, added: "It's just not needed and it's absolutely bonkers. There's already a Wash shoreline management plan to protect the people in the industries of The Wash."

A planning application for the tidal barrier scheme is yet to be submitted, but a Centre Port Holdings spokesperson said they hoped the project would be operational by 2028 at the earliest, if approved.

The Race to Save Britain's Rarest Native Tree

By Yannic Rack for www.positive.news

ONCE common across our landscape, mature black poplars have dwindled to just a few thousand. Tree enthusiasts across Britain are devising creative ways to boost their genetic resilience and replant huge numbers of the 'ballerina poplar'. Jamie Simpson was in his late 20s when he became serious about black poplars. It was 2008 and, as he tells it, London authorities were threatening to cut down several veteran black poplars along the Thames towpath in Barnes, where the river twists into one of its more dramatic curves.

Simpson, an arborist, had long known about the local population and believed it to be unequalled in the UK, where black poplars most often occur as lone sentinels in remote fields. Here, a few dozen were improbably thriving along a concrete stretch of the Thames and, to the chagrin of the Port of London Authority, breaking up the revetment (which protects against erosion), but Simpson mobilised opposition and successfully lobbied for the trees to stay.

Energised by the victory, he promptly sent some cuttings to the Forestry Commission, which had recently begun offering genetic testing for trees. "All three of them came back as unique," Simpson recalls.

More tests have since shown the Barnes black poplars to likely be the most genetically diverse population of *Populus nigra* betulifolia, a sub-species native to Britain. That's a big deal because it is also the country's rarest native hardwood. Past estimates have put the total number of mature trees across Britain at only 7,000.

Native black poplars, known as 'ballerina poplars' for their acrobatically angled limbs, were once common across the country. Several of them loom over The Hay Wain in John Constable's quintessential English landscape. Prized for its durability and fire-resistance, its timber was used in everything from wagons to scaffolding. However, many of its waterlogged habitats have since been drained and few native specimens were planted after a faster-growing hybrid became popular in the 19th century (betulifolia shares the craggy bark, knotted burrs and heart-shaped foliage of other poplar species, but is distinguished by the fine hairs that adorn its young leaves). Whenever landowners did plant native specimens, they favoured males that came without the cotton-like seed fluff produced by female flowers. Opportunities for wild specimens to reproduce naturally are consequently rare.

"They've had a bit of a rough time," says Chris Jenkins, nursery manager at the Royal Botanic Gardens, Kew, at Wakehurst, which has maintained a black poplar stool bed – a collection of coppiced tree trunks that produce new shoots each year – since the 1990s. The programme has produced thousands of cuttings

for planting across Sussex, and similar efforts have long provided a lifeline to the species across the country.

Black poplars are easy to multiply this way and it's an effective way to preserve a specific local population, but it also means the same clones now proliferate everywhere, since cuttings create exact genetic copies.

In 2018, a team of scientists at Forest Research, a Forestry Commission agency, published findings from DNA analyses of 811 samples of native black poplars, sent in by landowners over more than a decade. Among them, they identified only 87 genetically distinct clones, or genotypes. The most common, clone 28, also known as the 'Manchester poplar', turned up in a fifth of the samples. "Some of the clones are really everywhere," says Joan Cottrell, the agency's head of forest genetics.

That can be a problem because it leaves the species more vulnerable to disease and other threats. To make them more resilient, new trees would ideally be grown from seed, not cuttings. However, because cross-pollination of black poplars now rarely occurs in nature, seeds can be hard to come by. The Millennium Seed Bank, the biodiversity back-up facility run by Kew, only has four collections of black poplar seeds. Two are from the same site in Surrey, which consists of just a single tree.

"Black poplar seed, it's kind of like hen's teeth," says Ted Chapman, who coordinates Kew's domestic conservation partnerships. "We're still hunting them down."

In the meantime, this conundrum has spurred a passionate effort to provide what nature cannot. Zeke Marshall, a Forest Research scientist, recently started artificially reproducing black poplars in his spare time after digging up old research papers on controlled pollination. Earlier this year, he took cuttings from a female tree in Darlington and a male one in Durham, and placed them in vases of distilled water along a south-facing window in his home office.

Once the branches flowered, he used a small paint brush to transfer the male pollen to the female flowers. He managed to harvest 205 seeds and sent most of them to Kew, where Jenkins, the nursery manager, has grown about 30 seedlings, each one, crucially, a genetically distinct mix of its two parent trees.

"Vegetatively, we can propagate black poplars very easily, but the seed is what's important for the species." Jenkins says.

The pair plan to keep experimenting with other artificial pollination methods. They'd like to graft cuttings on to rootstock next year, hoping it might support more vigorous flowering and eventually broaden the number of crosses.

"Ideally we'd get some funding to set up a seed orchard," Marshall says. "That's what needs to be done."

Cottrell, the head of genetics at Forest Research, says Marshall and Jenkins' work could be crucial. By creating new genotypes, this would eventually provide a wider spectrum of specimens for natural selection to take hold – which is particularly important in an era of both worsening climate change and increasing threats from introduced pests and diseases. "If you haven't got diversity, species can't adapt," she says.

Back in Barnes, Simpson has first-hand experience of how fragile Britain's black poplars really are and how valuable preservation can be. Years ago, he helped set up a nursery to grow hundreds of saplings. That has proved prescient: roughly a fifth of the veteran poplars along the towpath have now been lost to storms and old age. He says many of the local genotypes are represented by only a single tree, making them particularly vulnerable.

With almost all of them now backed up through the nursery, and in replica populations as far away as Devon and the Lake District, he can at least be sure that the rarest individuals won't die out so easily.

Otherwise, he says: "they'll just fall down. And once they're gone, they're gone forever"

Research Near Hawes to Tackle Effects of Extreme Weather

By Hannah Chapman for The Darlington and Stockton Times

NEW research will for the first time monitor how the creation of England's biggest new native woodland in the Yorkshire Dales could help stave off the worst effects of climate change, such as flooding. Earlier this year, the Woodland Trust started work at Snaizeholme, near Hawes, not only in creating one of the largest contiguous new native woodlands in England, but signalling the start of complex scientific research.

Over the course of the next 20 years or more, a team of world leading scientists from the universities of York and Leeds will brave the site's harsh weather conditions – which includes 200cm of rainfall a year making it the wettest place in Yorkshire – to collect detailed data.

This will measure rainfall, soil properties and streamflow and track changes over time, helping them, among many other things, to understand how the flood mitigation benefits of new woodlands develop as the trees grow.

Already on site, scientists are using specialist equipment such as soil moisture and temperature sensors, weather stations and state of the art "lightning detectors" to measure extreme weather events.

It is hoped the research could help people adapt to the impacts of climate change by increasing understanding of how trees can reduce flooding risk, capture and store carbon, and provide vital habitat for nature recovery across UK uplands.

Dr John Crawford, conservation evidence officer for the Woodland Trust, said: "We know mature woodlands deliver a range of important benefits: they provide a home for nature, lock away carbon to fight climate change, and slow the flow of water helping to reduce downstream flooding. Less is known about new woodlands.

Working together with world-leading researchers will allow us to take detailed measurements of how biodiversity and eco-

system functions change as the trees grow and the woodlands mature. The research has the power to be a game changer when it comes to how such a new site can combat the extreme effects of climate change."

Professor Dominick Spracklen from the University of Leeds, added: "Restoring habitats across a whole valley has the potential to deliver big benefits for people, nature and climate. We have used a computer model to calculate that restoring the valley would reduce downstream flooding during a one-in-50-year storm event by nearly 10%t.

To check that our predictions are correct, we are now installing special equipment to monitor soil and vegetation properties, rainfall and river flow. This will allow us to understand how the flood reduction benefits of the project grow as the native woodlands mature."

Another key focus will be researching how establishing new trees alters the properties of soil.

Francesca Darvill, Sowerby PhD Researcher at the University of Leeds, said: "We still know relatively little about how soil carbon changes after tree planting. Most previous studies lack information about how much soil carbon was present before trees were planted, making it difficult to know how soil carbon has changed.

At Snaizeholme, we are making detailed measurements of the variability of soil properties across the site before the trees are planted. In years to come this will allow us to better understand how the trees have altered the soils. Crucially it will provide better information on how much carbon new woodland soils help to lock up."

Many centuries ago, the glacial valley at Snaizeholme would have had swathes of woodland stretching across the landscape but now the 561 hectares (1,387 acres) site is almost devoid of trees. Across the Yorkshire Dales National Park, total tree cover is less than five per cent and ancient woodlands only make up one per cent of that cover.

The Woodland Trust is planning to plant almost 291 hectares (719 acres) with native tree saplings. Different densities of trees will be planted across the site to create groves, glades and open woodlands that transition into and connect with the other habitats. In addition, huge restoration projects will take place, including 113 hectares (279 acres) of blanket bog / deep peat, approximately 100 ha (247 acres) of limestone pavement and over 77.4 hectares (191 acres) of open valley bottom following Snaizeholme Beck.

Sooty Bark in Sycamore

Cryptostroma corticale **is a species of fungus that causes sooty bark disease of maples, particularly sycamore (*Acer pseudoplatanus*). The spores grow profusely under the bark of affected trees or stacked logs. The fungus causes disease and death in trees, and the spores are allergenic and cause a debilitating pneumonitis (inflammation of the lungs) in humans. A number of cases hve been found recently in the Broadland area**

The fungus is thought to have originated in North America and was originally named *Coniosporium corticale* by the American mycologists Job Bicknell Ellis and Benjamin Matlack Everhart. The characteristics of the stroma, conidiophores and conidia was the basis for placing it in a new genus as *Cryptostroma corticale*. It is the type species.

Sooty bark disease causes wilting of the crown and dieback of branches. Rectangular patches of bark, and later long strips of bark, become detached from the trunk exposing thick layers of black fungal spores. It has been found that the fungus spreads more rapidly through the tree's tissues at 25 °C (77 °F) than at 15 °C (59 °F) and in the former instance, more rapidly when the tree is under greater water stress. This would seem to suggest that the disease is associated with raised summer temperatures.

Darwin's Oak Will be Felled to Make Way For The Shrewsbury Bypass

By William Hunter for The Daily Mail

OVER 200 years ago, when a young Charles Darwin may have played in its branches, this majestic oak tree was already 300 years old. Now 550 years old, Darwin's Oak and eight other ancient trees will be felled to make way for the £80 million Shrewsbury North West Relief Road (NWRR). Despite months of opposition, it only took a narrow vote on the Shropshire planning committee to condemn the trees to destruction.

Advocates for the road say it will connect the north and west of the town, reducing congestion and boosting the economy. However, campaigners and local opposition groups say the move risks devastating an important piece of green space.

The tree, now known as Darwin's Oak, stands in a 'green wedge' of undeveloped land which extends into the town centre. Not far from Darwin's childhood home, it is believed that Darwin may have visited the tree during his frequent walks in the Shrewsbury countryside.

With a girth of 7m (23ft), the enormous tree would certainly have been almost impossible for the young naturalist to miss. However, opposition groups say the newly approved NWRR will bisect this green wedge and threaten a number of important ecological sites.

In addition to destroying 2.5 miles of hedgerows, the road will also be built feet from four local wildlife sites. It will pass by an ancient woodland site, Hencott Pool, which is a Site of Special Scientific Interest, and the extremely important Ramsar Wetland.

The Woodland Trust says that the decision goes against national planning laws that protect ancient trees. Jack Taylor, lead campaigner for the Trust, said: "Just weeks after the iconic Sycamore Gap tree was lost, we are now faced with the loss of another iconic tree."

The approval of the road is a "dark day for the environment and our natural heritage as it threatens the loss of this living legend, numerous other irreplaceable veteran trees, and will damage nearby ancient woodland," Mr Taylor told MailOnline.

Dan Morris, Shropshire Council's cabinet member of highways, said: "I absolutely accept that the NWRR divides opinions, but I'm confident that it will make a huge difference to people, not only within the town, but also in the surrounding villages."

Mr Morris told MailOnline that: "The next stage for the road will be submission of a full business case which is expected before council in 2024, and work on the road due to start in 2025.

"In the interim the Planning Committee will be reviewing the conditions set out in the application which include a number of environmental protections to ensure that these are being met."

The council has proposed to plant 345,000 new trees, one for each Shropshire resident, and says that the bypass will have a positive effect on the environment.

In a statement, Shropshire Council said the road will improve air quality by reducing traffic in the town centre and by creating a new network of cycling routes. However, air quality consultant Mark Broomfield has previously warned that the council has not properly considered the impacts of the road on Hencott Pool which is protected under UK law.

This could lead to a legal challenge being brought against the council and the decision being overturned if it could be shown that the council had not sufficiently assessed the air pollution impact.

Fresh opposition to the decision has already begun to organise, with a petition to overturn the approval gaining almost 5,000 signatures in three days.

Rob McBride, a tree campaigner who launched the petition, told The Guardian: "It all ties in with Darwin's theory of evolution, there's too many dinosaurs on that committee. It's a majestic, impressive tree. You can see it straight across the meadow as you come near the River Severn. '[It's] just a brilliant landmark tree that many people, many residents use … to find solace and to connect with nature."

The news comes shortly after the famous Hadrian's Wall Gap tree was felled between September 27 and 28. The 300-year-old Sycamore tree was cut down overnight in what the police believe was a deliberate act of vandalism. However, scientists believe that the tree could regrow from the stump or be regrown as a clone.

Charles Robert Darwin was born in Shrewsbury, Shropshire, the fifth of six children of wealthy and well-connected parents.

One of his grandfathers was Erasmus Darwin, a doctor whose book 'Zoonomia' had set out a radical and highly controversial idea, that one species could 'transmute' into another. Transmutation is what evolution was then known as.

In 1825, Charles Darwin studied at Edinburgh University, one of the best places in Britain to study science. It attracted free thinkers with radical opinions including, among other things, theories of transmutation.

Darwin trained to be a clergyman in Cambridge in 1827 after abandoning his plans to become a doctor, but continued his passion for biology.

In 1831, Charles' tutor recommended he go on a voyage around the world on HMS Beagle. Over the next five years Darwin travelled five continents collecting samples and specimens while investigating the local geology.

With long periods of nothing to do but reflect and read, he studied Charles Lyell's Principles of Geology, which had a profound impact.

The trip also began a life of illness after he suffered terrible sea sickness.

In 1835, HMS Beagle made a five-week stop at the Galapágos Islands, 600 miles off the coast of Ecuador. There, he studied finches, tortoises and mockingbirds although not in

enough detail to come to any great conclusions, but he was beginning to accumulate observations which were fast building up.

On returning home in 1838, Darwin showed his specimens to fellow biologists and began writing up his travels. It was then that he started to see how 'transmutation' happened. He found that animals more suited to their environment survived longer and have more young.

Evolution occurred by a process he called 'Natural Selection' although he struggled with the idea because it contradicted his Christian world view.

Having experienced his grandfather being ostracised for his theories, Darwin collected more evidence, while documenting his travels, until 1851. He decided to publish his theory after he began to suffer long bouts of sickness.

Some historians suggest that he had contracted a tropical illness while others felt that his symptoms were largely psychosomatic, brought on by anxiety.

In 1858, Darwin received a letter from Alfred Russel Wallace, an admirer of Darwin's from reading about his Beagle Voyage. Wallace arrived at the theory of natural selection independently and wanted Darwin's advice on how to publish.

In 1858, Darwin finally went public giving Wallace some credit for the idea. Darwin's ideas were presented to Britain's leading Natural History body, the Linnean Society.

In 1859, he published his theory on evolution. It would become one of the most important books ever written. Darwin drew fierce criticism from the Church and some of the press. Many people were shaken by the book's key implication that human beings descended from apes, although Darwin only hinted at it.

In 1862, Darwin wrote a warning about close relatives having children, he was already worried about his own marriage, having married his cousin Emma and lost three of their children and nursed others through illness.

Darwin knew that orchids were less healthy when they self-fertilised and worried that inbreeding within his own family may have caused problems.

He worked until his death in 1882. Realising that his powers were fading, he described his local graveyard as 'the sweetest place on Earth'.

He was buried at Westminster Abbey.

Foresters Race Against Time as Tree Parasites Destroy French Woods

An article published on the France24 website

LAST year, ferocious wildfires destroyed thousands of hectares of one of France's most picturesque forests. Now French authorities are battling an invasion of beetles that are devouring the weakened pines of La Teste-de-Buch, in the southwestern region of Gironde. "The year 2023 is as cruel and dramatic as the wildfires," said Matthieu Cabaussel, one of the trustees managing the private forest of La Teste-de-Buch. "It's a double punishment."

The stenographer bark beetle, a brown, airborne insect measuring half-a-centimetre, primarily attacks pines damaged by fire or storm.

The parasite lays its eggs in the bark, and when these hatch, the larvae tunnel down into the trunk of the tree until it dies.

Where 250-year-old maritime pines once stood, machines now hum as workers fell, prune, saw and evacuate trees infested with parasites.

Along track 214, which crosses the forest of La Teste-de-Buch, thousands of logs pile up, the symbol of a new environmental threat in a region where wildfires destroyed around 30,000 hectares (74,100 acres) of forest last year.

Experts say that tree felling is necessary to fight the outbreaks of bark beetles, which also affect forests in the east of France, as well as in Eastern Europe.

"Cutting affected trees is the only way to fight this," Francis Maugard, natural risks manager at the National Forests Office (ONF), a government agency, told AFP.

Maugard said pheromone traps were used to measure the extent of infestation.

Close to the famous Dune of Pilat, Europe's tallest sand dune, ONF immediately launched a campaign of tree-felling in the national forest of La Teste, half of which had gone up in flames.

Around 80,000 cubic metres of wood have been removed, the equivalent of 20 years of harvest, but in the private forest, where the nearly 3,800 hectares fell victim to the wildfires, officials were not so quick to act and trees only

began to be cut in January.

For Herve Jactel of the French National Institute for Agriculture, Food, and Environment (INRAE), such an approach amounted to "disastrous management."

Jactel, research director at the institute's BioGeCo laboratory, also criticised the storage of infested wood in the forest.

"It was the ideal breeding environment," he said, noting that bark beetles have also reproduced faster due to the high summer temperatures. “This is a real time bomb," he said. "If we do nothing, spring 2024 will be a thousand times more dangerous."

Cabaussel, who helps manage the private forest of La Teste-de-Buch, admitted a number of "difficulties", including the hot weather and sluggish demand that has slowed down the evacuation of the affected trees.

In late October, some 270,000 tonnes of wood have been evacuated from the private forest and at least twice as much remained to be cut.

Cabaussel hopes to take all the necessary measures, including the felling of the trees during the winter months, when the parasites are inactive, to "save the neighbouring forests."

The bark beetle has already infiltrated La Teste's urban areas, forcing people to cut down pine trees in their gardens.

"There is a risk of population explosion," said Francois Hervieu, Regional Directorate for Food, Agriculture and Forestry (DRAAF), but added that the threat was manageable. "We are in a situation which requires the greatest vigilance to evacuate the trees in due time."

ADDUFU, a local association of inhabitants holding a medieval right to collect wood in the forest, has called for the creation of dedicated wood evacuation and storage sites.

"There is still a huge amount of wood to be taken out and we are afraid," said Philippe Fur, vice president at ADDUFU. He feared that the problem would only worsen in the future.

"The disaster that we've suffered is serious because we will not see an old forest in our lifetime again, but the forest ecosystems will recover very well" Cabaussel said.

In the decimated woods of La Teste-de-Buch, nature is already reclaiming its rights -- small pine saplings have popped up amid the charred tree stumps and ferns.

Over 1,100 Tree Species are Only in Colombia. Nearly Half are Threatened

By Santiago Flórez for Science Friday

SEEDS of the ceiba barrigona, or big-bellied ceiba tree, are not easy to find. The rare giant, known scientifically as *Cavanillesia chicamochae*, grows in a single canyon in the eastern branch of the Colombian Andes. "You have to walk for days and days just to find an individual that might have a few seeds," says Dr Cristina Lopez-Gallego, a biologist at the Universidad de Antioquia who works in plant conservation, but however difficult, collecting seeds may be critical to the future of that species and many others.

The ceiba barrigona is one of over 1,100 tree species endemic to Colombia, which is known for its extraordinary plant biodiversity, but after assessing hundreds of endemic tree species for a study published earlier this year, Lopez-Gallego and her colleagues estimate that nearly half the endemic trees in the South American country are in trouble.

The objective of the study was to produce information about species that could inform conservation decisions, Lopez-Gallego says. The team used the methodology of the International Union for Conservation of Nature (IUCN) Red List, a global inventory of plant and animal species that categorizes them by their risk of extinction.

Assessing tree species for the Red List involved measuring their geographic distribution, analysing habitat quantity and quality, and documenting human-caused threats.

The researchers assessed 860 endemic tree species and found that 357 are threatened. Of those, 95 were designated critically endangered, 148 endangered, and 114 vulnerable.

Of the species found not to be at risk, 64 were categorised as near threatened and 416 were placed in the least concern category. (About two dozen didn't have enough data for a full assessment.)

Lopez-Gallego says their research shows the dire status of endemic tree species. "It's shocking. It's a really tough thing," she says of the findings.

"The disappearance of one species is very concerning. That so many endangered species are at high risk is extremely worrisome," says Dr Mauricio Diazgranados, the Chief Science Officer and Dean of the International Plant Science Center at the New York Botanical Garden, who was not involved in the study.

Diazgranados is an expert in frailejones, a group of perennial plants with hairy leaves found in high-altitude ecosystems in the Andes. He says he is not surprised by the percentage of endemic trees that are at risk.

In his own research, he has found that 60% of frailejón species are threatened. Diazgranados believes the degree to which trees are threatened might be even higher than the Red List suggests because its methodology does not account for the effects of climate change.

According to the authors of the study, the most significant threats to Colombia's trees are deforestation, ecosystem fragmentation, and habitat destruction. The primary drivers of deforestation include cattle ranching, agriculture, mining, and cocaine production.

The ceiba barrigona (big-bellied ceiba) occurs only in the Chicamocha Canyon in Colombia. It is one of hundreds tree species endemic to the country that are at risk of extinction.

This issue often intersects with the economy of local communities, as many have to cut down trees to survive. "Conservation cannot be detached from solving social problems," Diazgranados says.

One Colombian organization using Red List data to guide its work is the nonprofit Humboldt Institute, which collects and propagates seeds from threatened species as part of its conservation efforts.

However, collecting and growing seeds of endangered endemic trees is easier said than done, says Carolina Castellanos, manager of collections at the institute. "You might collect 100 seeds, and only ten might be viable," she says.

Furthermore, adverse weather, like heavy rain during La Niña, can decrease production of fruit, and hence seeds, even in well-tended species like commercial crops. The effects can be dire in rare wild species. Making things even more difficult is the fact that many tropical seeds are recalcitrant, which means they don't survive drying and freezing and can't be stored long-term.

To overcome these challenges, the Humboldt Institute teams up with researchers to support community nurseries in remote regions across the country where local leaders and volunteers help grow the endangered trees. It's much easier and cheaper to grow trees in the regions where the plants have been found with local support.

There are currently eight nurseries growing species of endangered trees selected based on the research of Lopez-Gallego and her colleagues. The goal is to replant the young trees in a few years in protected areas identified by scientists and managed by the institute.

"In Colombia, we use more than 7,000 species [of plants] for different things, from crafts to food to ornamental use," says Castellanos, who argues that plants are essential to our cities, environments, and culture, even if we are unaware of them.

She adds that to protect endangered trees, it is important for Colombians to learn about the country's plant diversity. Diazgranados also laments the lack of such education in schools. Even as a top expert on Colombian plants, he says he didn't learn about the country's biodiversity until he was in college.

When a tree goes extinct, Diazgranados says, its evolution, chemistry, potential uses, and social history also disappear. Lopez-Gallego knows they can't save all of Colombia's endangered trees and that many might disappear during her lifetime.

However, she points out that efforts to protect those trees also benefit other species, ecosystems, and local communities. "This work is difficult, and sometimes frustrating," she says. "But it is also very rewarding."

New Forest: New Planning Powers Apply to Pop-Up Campsites

By Chris Yandell, New Forest Chief Reporter for the Daily Echo

NATIONAL park chiefs in the New Forest have implemented new planning controls in a bid to curb the impact of pop-up campsites. National "permitted development rights" introduced by the government in the summer allow temporary camping facilities to operate for up to 60 days a year without planning permission, but other changes mean many pop-up sites in the Forest will still need the approval of the Lymington-based National Park Authority (NPA).

Planning bodies in environmentally sensitive areas can make an Article 4 Direction, empowering them to study proposals to open temporary pitches and impose any necessary conditions if consent is granted.

Now an Article 4 Direction has been issued in the Forest following concern about the number of pop-up sites in the area.

The new rules apply to any land first used as a temporary recreational campsite after March 1 2020 and any land used for more than 28 days in total in any calendar year.

NPA leaders are determined to limit the damage done to the environment by camping facilities springing up on farms and other sites.

An NPA spokesperson said the Authority believed the use of an Article 4 Direction was justified.

"The New Forest National Park has seen a significant increase in the number of pop-up campsites since lockdown, and also has more than three times the number of camping and touring caravan bed spaces per square kilometre than the average of all other English national parks."

Gordon Bailey, chairman of the NPA's planning committee, said the Forest was already one of the most visited national parks in England.

"It has the highest proportion of land designated as internationally important for nature conservation in the country. It's therefore vital we protect the very thing people come to enjoy," he said.

"The Article 4 Direction will help prevent negative impacts and pressures on our communities, protected habitats, wildlife and landscapes."

The new powers, which apply to the whole of the New Forest National Park, came into force on October 27. But the NPA has launched a public consultation on the move, with people able to submit their views until December 1.

Meanwhile, the 22-member organisation has elected a new chairman. David Bence, who joined the Authority in 2018, has been visiting the Forest since he was a child and has a family connection to the area going back to the Second World War. He succeeds Prof Gavin Parker.

'Game-Changer' Yorkshire Dales Woodland Research Study Launched

By David McKenna for BBC News

A 20-year study to assess how a vast new woodland in the Yorkshire Dales could help stave off the worst effects of climate change has begun. The Woodland Trust is planting hundreds of thousands of trees at Snaizeholme, near Hawes, to create one of England's largest native woodlands.

According to those behind the study, the area is Yorkshire's wettest place. Experts said the study would lead to a greater understanding of the flood reduction benefits of trees.

The research is being undertaken by scientists from the University of York and University of Leeds, with specialist equipment being used to monitor the site and to measure extreme weather events.

It was hoped the study would increase understanding of how trees can reduce flooding risk, capture and store carbon and provide vital habitat for nature recovery across UK uplands, researchers said.

Dr John Crawford, conservation evidence officer for the Woodland Trust, said: "We know mature woodlands deliver a range of important benefits. They provide a home for nature, lock away carbon to fight climate change and slow the flow of water helping to reduce downstream flooding."

However, Dr Crawford said less was known about new woodlands, adding that the research had the potential to be a "game-changer".

Dr Rob Mills, from the University of York, said: "Opportunities to create and restore habitats at this scale are rare in England. Snaizeholme provides a unique opportunity to understand how carefully restoring a rich mosaic of habitats provides a range of benefits for people, nature and climate," he said.

Meanwhile, Prof Dominick Spracklen, from the University of Leeds, said: "We have used a computer model to calculate that restoring the valley would reduce downstream flooding during a 1-in-50-year storm event by nearly 10%.

"It could be the difference between a house or a community being flooded, or not," he told BBC Radio 4.

The area was covered in trees centuries ago, but the 1,386 acre (561 ha) valley is now almost barren.

The new trees would also "restore an entire ecosystem" for threatened bird species, the Woodland Trust said.

Reintroducing Wildlife Species 'is not a Priority'

By Esme Stallard, Climate and Science Reporter, BBC News

BRINGING species like beavers back to England is no longer a priority, the government said last month to criticism from wildlife groups. In recent years animals and plants have been reintroduced by charities as part of efforts to restore the country's depleted biodiversity. A recent report shows that one in six UK species are at risk of extinction. The government said it was focused on habitat restoration and pollution.

In September more than 60 conservation organisations reported a significant decline in species due to expansions in farming and the effects of climate change.

Farmers and wildlife charities have taken action in recent years to reintroduce extinct or rare species like beavers, ladybird spiders and red kites into England.

Despite the government allowing this, the Environment, Food and Rural Affairs Committee - a group of cross-party MPs - concluded in July that there was an absence of long-term plans on how to manage this. In response, the government said the "reintroduction of species is not a priority".

In its letter to the committee, which was made public on 20 October, the government said it was focused on increasing biodiversity but through habitat restoration and reducing pressures from pollution. The government's environment department has come under scrutiny for not doing more to prevent sewage dumping and other forms of pollution in England's waterways.

Sir Robert Goodwill, chair of the Committee, told the BBC he was "disappointed" with the government response considering species were already being reintroduced.

Bringing back extinct species is contentious issue. Sir Robert said that although farmers and landowners appear broadly supportive there are risks of reintroducing new species and without clear guidance problems could arise.

Beavers were hunted to extinction in the UK but have been reintroduced in recent years. A recent study showed that river barriers similar to those built by beavers can protect communities at risk of flooding.

However, there have also been cases documented in Europe where beavers have built their dams in places that have damaged crops and modified rivers and currently beavers have arrived in rivers in England without the government confirming if they have protected status, so farmers are left not knowing how they can be managed.

"We've got places like the Somerset Levels and the Fens in Lincolnshire where if we don't protect the watercourses (from beavers) there we could see flooding," said Sir Robert.

Joan Edwards, director of policy at The Wildlife Trusts told the BBC: "Reintroducing wildlife must be part of the UK government's arsenal for tackling nature loss and climate change - it is astonishing there is no strategy for doing so."

She said there was clear evidence of the positive impact of beavers, in particular, on the land. "The return of wild beavers can help to recreate lost wetlands, with a knock-on effect that benefits other wildlife including insects, invertebrates and birds. Beavers also slow the flow of water, which can reduce flood risks to towns and villages"

On 24 October Ms Coffey was interviewed by the committee.

"I've had to choose to prioritise and I can

assure you, species reintroduction ain't one of my top priorities and therefore we've stepped back away from that," she told the committee. "Ultimately we have a broader range of activities and we have to choose where we can put our resources."

However, Sir Robert said that without some of the measures in place that the committee recommended then the government may have to spend more money compensating farmers for damage to their crops from reintroduced species or flooding of homes.

The committee called for:

- a list of priority species for re-introduction.
- an assessment of the risk of each species and proper management plans.
- better community engagement for those living and working close to new species.

Ban the Shooting of Live Birds

EVERY year, the shooting industry breeds around 60 million birds to be shot for ‘sport’ in the UK. Animal Aid’s undercover footage from some of the huge, industrial farms that mass-produce the birds catalogues the suffering and misery endured by these poor animals. It’s where factory farming meets blood sports and it has to end.

Each year in the UK, the shooting industry mass produces around 60 million birds, such as pheasants and partridges, many of whom come from huge, industrial factory farms, where the breeding birds and their chicks suffer.

The mass release of so many birds ahead of the shooting season is bad for the environment, impacting negatively on plants and other animals. Native animals are forced to compete with the birds for food and habitat.

Other animals, labelled ‘predators’ or ‘pests’ by the shooting industry, are attracted by the release of so many birds, and are then killed by gamekeepers.

The released birds are used as feathered targets, their fate to be shot out of the sky. Many are not killed outright and face a slow, excruciating and lingering death.

It is irresponsible to allow the mass release of millions of ‘game’ birds whilst bird flu poses such a huge risk to wild birds.

Killing animals for entertainment is totally immoral. Humane sports, such as clay shooting, already exist. There is no reason for the killing of live, sentient birds to continue.

If you agree then please sign the Animal Aid **petition**.

CLIMATE

THE 2023 United Nations Climate Change Conference or Conference of the Parties of the UNFCCC, more commonly referred to as COP28, will be the 28th United Nations Climate Change conference, held from 30 November until 12 December 2023, at the Expo City, Dubai. Even before it began there was controversy as the host venue van hardly be regarded as having "environmentally sympathetic" credentials.

Esme Stallard, Climate and Science Reporter for BBC News, reported that the world's oil and gas industry has been warned it faces a "moment of truth" at the talks.

Dr Fatih Birol, head of energy watchdog the International Energy Agency, was speaking as the IEA published a new report on the future of fossil fuels. He said the sector must choose between contributing to the climate crisis or "becoming part of the solution".

Last year fossil fuel companies were responsible for just 1% of global investment in renewable energy.

The publication of the report just a week before the start of is no coincidence. The IEA will want to put pressure on governments attending the conference to get an agreement on reducing the use of fossil fuels.

"The uncomfortable truth that the industry needs to come to terms with is that successful clean energy transitions require much lower demand for oil and gas, which means scaling back oil and gas operations over time - not expanding them. There is no way around this," Dr Birol said.

This year's conference is also controversial because a major oil producer is host. In the run up to COP28, the man who will chair the climate talks, Sultan Al Jaber of the United Arab Emirates, has been criticised for prioritising a technology known as carbon capture and storage.

Carbon capture stops most of the CO_2 produced from burning fossil fuels in power stations from being released into the atmosphere and either re-uses it or stores it underground. However, it is expensive and in its infancy.

Some critics say fossil fuel producers hope to use the technology to allow them to continue relying on oil and gas

Dr Birol said that meeting the world's climate goals "means letting go of the illusion that implausibly large amounts of carbon capture are the solution".

The report estimates that based on current oil and gas consumption the world would have to capture or remove some 32bn tonnes of carbon in order to stop temperatures rising by more than 1.5°C above pre-industrial levels, seen as a key threshold to limit the effects of climate change.

Furthermore, the amount of electricity needed to power these technologies would be greater than the entire world's electricity demand today. Currently, only 45 million tonnes of carbon are captured worldwide each year.

Dr Steve Smith, executive director of Oxford Net Zero and CO2RE at the University of Oxford, told the BBC the report was still calling for investment in the technology but that it must come alongside other measures.

"It goes hand in hand with emissions reductions, trying to do carbon dioxide removal at the same time as not cutting our emissions is like being in a speeding car and trying to push the brake and accelerator at the same time," he said.

The oil and gas industry is one of the largest investors in carbon capture and storage but came under heavy criticism in the report for not investing sufficiently in renewable energy.

The world's entire clean energy investments are estimated at about $1.8tn (£1.44tn), according to the IEA. But fossil fuel producers are responsible for just 1% of that - or $18bn - with the rest coming from governments and other industries.

Brendan Curran, senior policy fellow at the Grantham Research Institute on Climate Change and the Environment, said: "This report from IEA highlights that despite that cacophony of claims from oil and gas producers, the actual levels of investment in the transition to net zero sector are negligible and the industry isn't really doing anywhere near enough. This is during a period when oil and gas companies have been recording record profits."

The fossil fuel industry reported revenues of $5 trillion in 2022, a record high, and earlier this year BP and Shell rolled back on previous commitments to cut oil production following record profits.

As well as criticising fossil fuel companies the report also warned countries against drilling for oil as a means to provide energy security. Earlier this year UK PM Rishi Sunak granted new North Sea oil and gas licences as part of efforts, he said, to improve the UK's resilience to volatile energy markets.

Dr Birol told the BBC that he wouldn't comment on individual countries but that any new fossil fuel projects announced today would face "not only climate risks but business risks", because by the time the oil reaches the market in seven or eight years' time global oil consumption will be declining.

MATT McGRATH and Mark Poynting reported for BBC News Climate & Science that climate records have tumbled in 2023. There have been historically high sea temperatures, worrying lows in Antarctic sea-ice, and extreme weather events hitting every continent, the latest being an "unbearable" heatwave in Brazil. It's now "virtually certain" that 2023 will be the hottest year on record. That's something that no major climate science body expected at the start of the year.

Scientists have long known that temperatures will continue to rise as humans keep releasing record amounts of planet-heating green-house gases like carbon dioxide, mainly through burning fossil fuels. This is the main cause of global warming.

While they are struggling to fully explain 2023's "gobsmacking" surge in temperatures, here are four additional reasons that could be behind the increases. One key factor is the unusually rapid onset of a natural weather system known as El Niño. During an El Niño, warmer surface waters in the eastern Pacific release additional heat into the atmosphere. This typically leads to a surge in global air temperatures.

The graph on the next page shows how a new El Niño is strengthening. It has not yet reached the peak of the last major one in 2016, as you can see on the next page, but is expected to intensify in the coming months.

The ongoing 2023 El Niño may be releasing even more warmth than previous ones, because the world had previously been in an extended cool phase - an opposite weather system known as La Niña. This kept a lid on global temperatures for an unusually long period, as warmth was less able to escape from the sea surface into the atmosphere.

During this time, the oceans continued to absorb record amounts of heat, some of which is now finally being released into the atmosphere.

Normally, scientists expect a delay of around three months between maximum El Niño strength and global air temperatures peaking, explains Zeke Hausfather, a climate scientist at Berkeley Earth, a science organisation in the US.

However, air temperatures have risen much more quickly during this El Niño than with previous ones, and it's not even reached full strength yet. As Dr Hausfather puts it, "this El Niño is weird."

Cutting some air pollutants - aimed at cleaning the air that humans breathe - may actually be having an unintended consequence for warming. That's because some small airborne particles known as aerosols, like sulphate or dust, tend to reflect some of the Sun's energy back into space. Generally, this cools the Earth's surface.

Regulations introduced in 2020 to encourage cleaner shipping fuels have reduced global emissions of sulphur dioxide (SO2), a harmful air pollutant for humans to breathe, by an estimated 10%, but this appears to have raised temperatures, especially in shipping hotspots like the North Atlantic.

"We saw quite rapidly from the satellite data that less sunlight was being reflected and more sunlight was being absorbed by the oceans," explains Leon Simons, a climate researcher at the Club of Rome group.

Not all scientists agree on how important aerosols are for explaining 2023's records.

"It's hard to make the case that the [new shipping fuel] regulation in 2020 would create a sudden jump in 2023 that we didn't see in 2022," Dr Hausfather argues.

In January 2022, there was a huge eruption of the underwater Hunga Tonga-Hunga Ha'apai volcano. The eruption plume reached an "unheard-of" 35 miles above the Earth's surface and triggered record underwater debris flows.

Importantly for the climate, it also released around 150 million tonnes of water vapour into the stratosphere. Water vapour is a greenhouse gas, like carbon dioxide, so may have added to warming.

Studies so far suggest the eruption may have only had a limited effect on global air

temperatures, perhaps less than 0.05°C, but scientists are still working to establish its full impact.

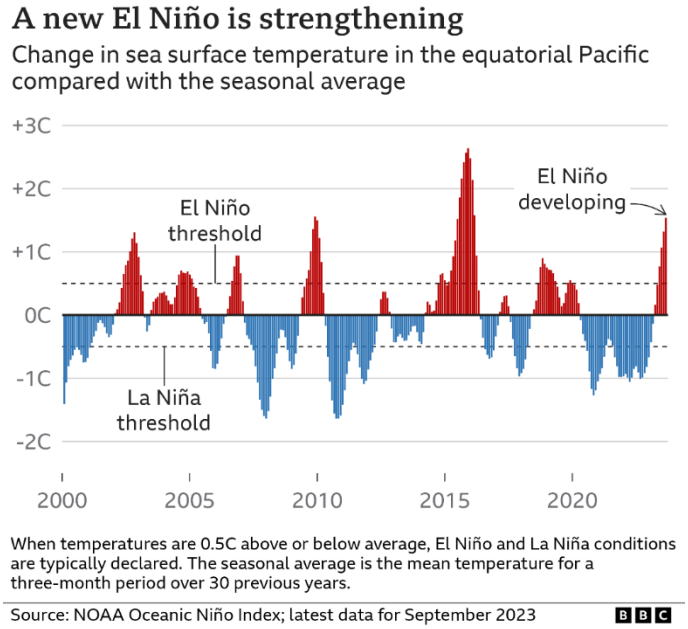
The sea-ice surrounding Antarctica is well below any previous recorded winter level, satellite data showed in September.

Arctic sea-ice has long been in decline, but until 2017 Antarctic sea-ice had largely defied predictions and remained relatively stable. This could now be changing, with consequences for global temperatures. Fewer areas of bright, reflective ice mean more of the Sun's energy is absorbed by the darker ocean surface. In turn, this accelerates warming.

"The concern is that the Antarctic has started to operate like the Arctic," working "like a radiator rather than a refrigerant" notes Martin Siegert, from the Grantham Institute for Climate Change.

It is unclear whether the Antarctic changes are a contributor to 2023 warmth, or a consequence, but it indicates how warming could speed up in future, Prof Siegert says.

While the rate of warming seems to have sped up in recent decades, this has not yet consistently exceeded the range of possible temperatures that scientists expected from climate models. This provides some reassurance that the world hasn't yet tipped into a new phase of runaway climate change.



However, a group of leading climate scientists recently warned that the climate may change more quickly than expected in the future. They suggest that the climate is yet to fully respond to the greenhouse gases already emitted. One reason could be the artificial cooling effect of aerosols. This leaves more warming "in the pipeline" than previously thought, they argue.

Not all scientists agree with this view, but the devastating climate impacts currently being experienced highlight the challenges the world is already facing.

Ahead of the crucial COP28 climate summit, this "should really spur action to accelerate the phase out of fossil fuels," explains Lili Fuhr from the Centre for International Environmental Law.

"It doesn't have to be worse than we expected to be a huge problem that society urgently needs to deal with," says Dr Hausfather.

"Climate change is as bad as we expected and that's bad enough.

Buried Ancient Fenland Yew Trees Offer Climate Change Insight

An article by BBC Cambridgeshire

THE buried remains of vast forests of ancient yew trees that once covered the Fens could shed light on the history of climate change, researchers said. Hundreds of tree trunks dug up by Fenland farmers during ploughing were studied at Cambridge University. They said the trees were "a unique climate and environmental archive".

It is thought a rapid rise in North Sea levels flooded the area with salt water, causing the woodlands to disappear about 4,200 years ago.

Much of the Cambridgeshire Fens was a wetland until it was drained between the 17th and 19th Centuries using artificial drainage and flood protection.

Today, the area is home to some of the most productive farmland in the UK thanks to its rich peat soil and it is dominated by fields of potatoes, sugar beet, wheat and other crops.

However, its history means that "a common annoyance for Fenland farmers is getting their equipment caught on big pieces of wood buried in the soil, which can often happen when planting potatoes, since they are planted a little deeper than other crops," said Tatiana Bebchuk, a PhD student from the University of Cambridge Department of Geography.

"This wood is often pulled up and piled at the edge of fields," she said.

The team took samples of the logs away, and were surprised by how well-preserved they were - "as if they were cut down just yesterday", she said.

Analysis by the Cambridge Tree-Ring Unit found some of the ancient trees were 400 years old when they died, providing "unique climate information for over a millennium from around 5,200 years ago until about 4,200 years ago".

"Finding these very old trees in the Fens is completely unexpected. It would be like turning a corner in rural Cambridgeshire and seeing an Egyptian pyramid. You just wouldn't expect it," said Ms Bebchuk.

She added: "Wood rots and decomposes easily, so you just don't expect a tree that died five or four thousand years ago to last so long."

Researchers said the period when the Fen woodlands died coincided with major climatic changes elsewhere in the world at roughly the same time, including a "megadrought in China and the Middle East [that] was a possible trigger of the collapse of several civilisations".

"We want to know if there is any link between these climatic events," Ms Bebchuk said.

"Are the megadroughts in Asia and the Middle East possibly related to the rapid sea level rise in northern Europe? Was this a global climate event, or was it a series of unrelated regional changes?

"We don't yet know what could have caused these climate events, but these trees could be an important part of solving this detective story."

Professor Ulf Büntgen, the senior author of the study, said: "This is such a unique climate and environmental archive that will provide lots of opportunities for future studies, and it's right from Cambridge's own backyard.

"We often travel all over the world to collect ice cores or ancient trees, but it's really special to find such a unique archive so close to the office."

The World's Largest Forest Wilderness Seems to Be Shrinking

By Ronny Rotbarth et al, The Conversation

EARTH'S boreal forests circle our planet's far northern reaches, just south of the Arctic's treeless tundra. If the planet wears an Arctic ice cap, then the boreal forests are a loose-knit headband wrapped around its ears, covering large portions of Alaska, Canada, Scandinavia and Siberia. The boreal region's soils have long buffered the planet against warming by storing huge quantities of carbon and keeping it out of the atmosphere. Its remoteness has historically protected its forests and wetlands from extensive human impact.

These two traits rank boreal forests among the most important ecosystems on Earth. In addition, numerous species of mammals, fish, plants, insects and birds make these forests home.

For over two centuries, scientists have recognized that climate plays a key role in determining the geographic zones of plant communities. Because boreal forests and soils face subzero winters and short summers, these forests and the animals that live in them are shifting northward as temperatures rise.

However, boreal forests' northward advance has been spotty and slower than expected. Meanwhile, their southern retreat has been faster than scientists predicted. As scholars who study northern ecosystems, forests and wetlands, we see concerning evidence that as the world warms, its largest forest wilderness appears to be shrinking.

Boreal forests contain billions of trees. Most are needleleaf, cone-bearing conifers, but there also are patches of broadleaf species, including birch, aspen and poplar. They support millions of migratory birds and iconic mammals like brown bears, moose and lynx.

These trees and the soils around their roots help regulate Earth's climate, in part by pulling carbon dioxide out of the atmosphere, where it would otherwise act as a greenhouse gas. The trees use this carbon to grow roots, trunks and leaves, which eventually turn into carbon-rich soil once the tree dies. Significant changes to the forests will translate to changes in global climate.

These forests are warming at rates well above the global average. Rising temperatures directly affect the growth and survival of trees and, in turn, their ability to store carbon.

As atmospheric warming frees trees from the icy grip of cold temperatures, adult trees can respond by growing faster. Milder temperatures also allow young seedling trees in the most northern boreal forests to gain a foothold where previous conditions were too harsh for them to become established.

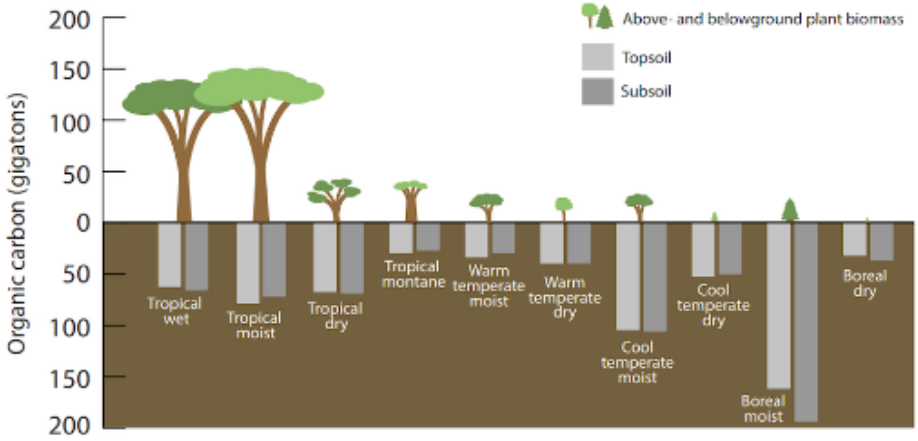
In the warmer, southern boreal forests, the situation is quite different. Here, conditions have become too warm for cold-adapted boreal trees, slowing their growth and even leading to their death. With warming comes dryness, and water stress leaves trees more susceptible to insect infestation and fires, as Canada has experienced in 2023 and Siberia in 2019 and 2020.

If this happens at a larger scale, southern boreal forest boundaries will thin and degrade, thereby retreating farther north, where temperatures are still suitable.

If boreal forests expand northward and retreat in the south at the same rates, they could slowly follow warming temperatures. However, our combined research using satellite and field data shows that the story is more complex.

Satellites are invaluable for tracking how boreal forests have changed in recent decades and whether these changes are consistent with an overall northward shift. Researchers can use satellites to monitor year-to-year changes in forest characteristics, such as annual tree growth and tree cover.

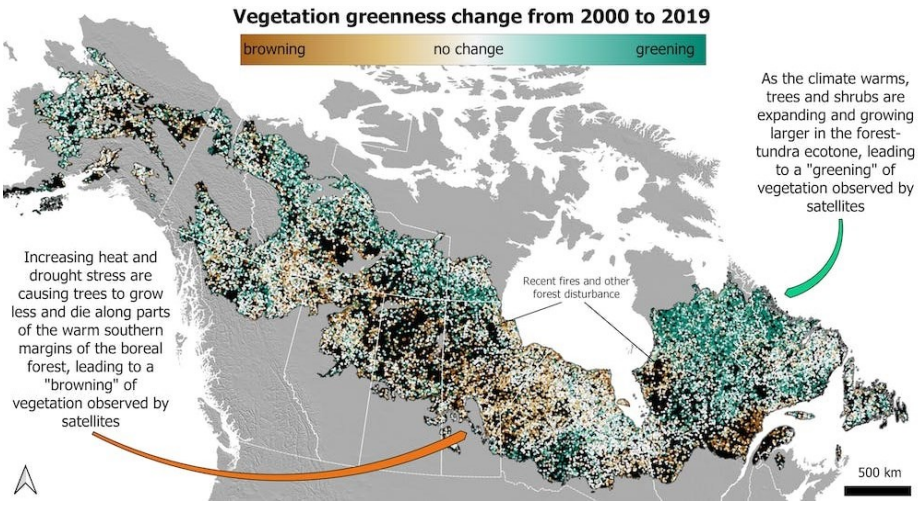
Our recent studies using satellite data showed that tree growth and tree cover increased from 2000 to 2019 throughout much of the boreal forest. These changes occurred mainly in the coldest northern areas. However, there was limited evidence to indicate that forests were expanding past current tree lines.



Different forest types around the world store varying amounts of carbon. Warm tropical regions tend to store much more carbon in plants, while cool boreal forests have enormous carbon stores in soil. (U.S. Forest Service)

Our studies also revealed that tree growth and tree cover often decreased from 2000 to 2019 in warmer southern areas of the boreal forests. In these regions, hotter and drier conditions frequently reduced tree growth or killed individual trees, while wildfires and logging contributed to tree cover loss.

Satellite data makes it clear that climate



Satellite measurements show that plant growth widely increased along the cold northern margins of the boreal forest in recent decades, but it often decreased along the warm southern margins − potential early indicators that the boreal forest is beginning to migrate northward. (Logan Berner. based on results from Berner and Goetz 2022.. CC BY-ND)

change is affecting both the northern and southern margins of the boreal forest. However, if tree cover loss in the south occurs more rapidly than gains in the north, then the boreal forest will likely contract, rather than simply shifting northward.

Forests advance when individual tree seeds germinate and grow, but boreal trees grow slowly and require decades to reach a size that's visible from space. Finding young trees whose presence would signal tree-line movement requires data from the ground.

In the late 1970s, David Cooper documented that young spruce trees were growing at altitudes hundreds of yards higher and locations miles north of the highest-elevation cone-bearing trees in Alaska's Brooks Range. Returning in 2021, we found those little trees had grown to be several yards tall and were producing cones. More importantly, 10 times the number of young spruces now grow above and beyond the tree line than during our first field forays.

Crisscrossing the boundary between Alaska's boreal forest and its Arctic tundra on foot, we have found thousands of young boreal trees growing up to 25 miles north of established tree lines. Most grow where deeper snows fall, due to an Arctic Ocean version of the "lake effect": Cold air moves across open water, picking up warmth and moisture, which then falls as snow downwind.

Retreating sea ice leaves more open water. This generates stronger winds that propel tree seeds farther and more snowfall that insulates seedlings from harsh winter conditions. The result is that trees in Alaska's Brooks Range are rapidly moving into the treeless tundra. However, these rapid expansions are localized and do not yet happen everywhere along the northern tree line.

Our combined research shows that boreal forests are, in fact, responding to rising temperatures. But rapid rates of climatic change mean that trees likely can't move northward at a pace that keeps up with their loss in the south.

Will trees in the far north ever catch up with climate and prevent forest contraction? At this point, scientists simply don't know. Perhaps the newly established trees in the Brooks Range herald such an expansion. It's also unclear whether the northern parts of boreal forests can accumulate enough carbon through increased growth to compensate for carbon losses in the south.

If boreal forests are indeed on the verge of contracting, they will eventually disappear from their current southern edge. This would harm many native and migratory animals, especially birds, by reducing their boreal habitat. The forests also are culturally important to several million people who call them home, such as Canada's aboriginal communities.

Monitoring boreal forests around the world more closely, using both satellite data and on-the-ground measurements, will help fill out this picture. Only then can researchers hope to glimpse the future of one of the Earth's last wildernesses.

Ronny Rotbarth, Ph.D. Candidate of Arctic and Sub-Arctic Ecology, Wageningen University; David J. Cooper, Senior Research Scientist Emeritus, Colorado State University; Logan Berner, Assistant Research Professor of Global Change Ecology, Northern Arizona University, and Roman Dial, Professor of Biology and Mathematics, Alaska Pacific University

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Government Funding Announced for New Forest Research

From Department for Environment, Food & Rural Affairs, Forest Research, Forestry Commission, and Rebecca Pow MP

Published 27 November 2023

UK research into climate and pest resilient woodlands is set to boosted today with the announcement of £16 million government funding for our world-leading forest scientists. Our trees are facing unprecedented challenges from the impacts of climate change to an increased risk of tree disease and pests, including ips beetles, Dutch elm disease and ash dieback. These kinds of diseases threaten valuable habitats for thousands of species of wildlife.

This funding will support vital research into ways to mitigate and prevent these impacts, helping to protect woodlands and plant more trees in the long term.

It comes ahead of Environment Secretary Steve Barclay setting out plans this week to improve access to green space, including a competition for a new National Forest and the unveiling of two new Community Forests in Derbyshire and the Tees.

The Forest Research programme will back 30 projects, working with 27 partner organisations. It will also support efforts to increase England's tree canopy – one of the government's key environment targets.

Projects benefiting from the funding include:

- Studying the complex networks of soil nutrients and plant roots to see how they help boost woodlands.
- Work to better understand how tree seeds can fall naturally and plant themselves
- Developing our understanding of how drought is impacting tree growth
- Examining the barriers to agroforestry, where trees and agricultural crops grow on the same piece of land

Forestry Minister Rebecca Pow said "Not only do we need to plant trees, for tomorrow, we also need to support their long-term protection from the host of threats they face due a changing climate.

"Today we are investing a further £16 million in vital research to help support the resilience of our trees and woodland as part of our ambitious plans to increase tree planting across the country."

Professor James Pendlebury, Chief Executive, Forest Research said "This is a significant and welcome investment in the forest science and evidence needed to underpin the creation of resilient woodlands and their future management and protection. It is also a huge investment in the next generation of forest scientists who will support the development of forests and woodlands fit for the future."

Forestry Commission Chair, Sir William Worsley, said "Trees can only help mitigate the impact of a changing climate if they are resilient to those challenges themselves.

"Forest Research will be vital to supporting tree planting activity through building the evidence base to inform and improve our management of trees and selection of resilient species for the future to increase woodland cover for future generations."

The Forest Research Trees and Forestry evidence programme will leave a lasting legacy, by providing strong scientific evidence to underpin our future forestry policy and support long term action for expanding and managing our treescapes.

Our England Trees Action Plan and Environmental Improvement Plan set out ambitious targets to treble tree planting rates by the end of this Parliament and to achieve at least 16.5% of tree and woodland cover by 2050. Today's announcement supports the delivery of this ambitious programme and make sure we are using cutting edge science to make decisions.

Substantial Tropical Forest Loss From Growing Rubber Trade

By Will de Freitas, Environment + Energy Editor for The Conversation

OVER 4 million hectares of tree cover, an area equivalent to the size of Switzerland, may have been cleared to make space for rubber plantations since the 1990s. Of all the rubber planted, 1 million hectares may have been established in key biodiversity areas. Sites that contribute significantly to biodiversity in terrestrial, freshwater and marine ecosystems.

These are the findings of our recent research, which mapped the conversion of land to rubber tree plantations across south-east Asia. The likely pace of forest loss that we found surpasses previous estimates.

The global demand for natural rubber, which is found in thousands of products including vehicle and aeroplane tyres, is increasing. In separate research, published in July 2023, we estimated that between 2.7 million and 5.3 million additional hectares of plantation area could be needed by 2030 to fulfil this additional demand. This is a concern. Research has found that rubber plantations support nowhere near as much biodiversity, nor do they contain as much carbon, as natural forests.

Most natural rubber is made by extracting latex, the liquid sap, from the *Hevea brasiliensis* tree in a process called "tapping". As a tropical species, the places suitable for *Hevea brasiliensis* cultivation coincide with some of the world's most biodiverse regions. Thailand and Indonesia, for example, are the world's leading rubber producers.

We reviewed more than 100 case studies to understand what types of land are being converted to rubber. In many cases, rubber replaced natural forests, but we also noted instances of other plantation types and agricultural systems transitioning to rubber.

We then examined national statistics regarding the extent of rubber plantations and their productivity per hectare. Our findings revealed a global trend of expanding rubber areas in producer countries, coupled with static or declining yields.

Low yields are partly due to tapping less frequently in countries where prices are relatively low, though they are also probably caused by suboptimal tapping practices. As existing rubber stockpiles are eventually exhausted, prices should theoretically increase again, potentially leading to more frequent tapping of plantations that are currently not or only infrequently tapped. However, past trends suggest that more land will be established for rubber cultivation to meet the growing demand, rather than using existing plantation land more effectively.

Ivory Coast in west Africa emerged as a new hotspot for expanding rubber plantations. These plantations seem to be displacing cocoa agroforests (where trees or shrubs are grown around or among other crops or natural vegetation) in the region.

Using cutting-edge analysis of satellite data, which was based on the unique timing of rubber tree leaf drop compared to other tree cover, we more recently generated high-resolution maps of rubber distribution and the associated deforestation.

Our mapping revealed Cambodia as a country of particular concern, with 40% of rubber plantations associated with deforestation. These plantations were often located within protected areas.

Most rubber that is produced in Asia is grown by smallholder farmers. People who farm less than five hectares of land. Rubber production thus forms the basis of many regional economies and supports the livelihoods of millions. Producing rubber sustainably in existing plantations, and avoiding further plantation expansion, is a critical part of protecting forests and supporting people.

In June 2023, the EU adopted a new regulation to curb the EU market's impact on global deforestation. Alongside several other commodities, rubber is covered by this legislation. Any company looking to sell products containing these commodities on the EU market can only do so if suppliers can show that they were not sourced from land deforested after December 2020.

On the one hand, there is a risk that the new law may inadvertently marginalise rubber smallholders. Rubber is typically collected by middlemen and can change hands several times before reaching a processing facility. Smallholders will also largely be unaware of the new regulations and often may not have documentation showing their official land tenure.

Given the complexity of tracing smallholder rubber, larger tyre manufacturers and other rubber consumers may choose to source their rubber from industrial plantations that have the resources to prove that their rubber is compliant with the EU's new regulation.

However, accompanied by the need to trace rubber supply, the new regulation could also offer opportunities to help smallholders improve their rubber production methods. Our research from July 2023 found that reducing land availability for rubber expansion could indirectly drive increases in production efficiency on existing land.

There is evidence that this is taking place in Mato Grosso, the largest soy and cattle-producing state in Brazil. Double cropping (where several crops are planted in the same area and in the same crop year) rates were significantly higher in regions where forest conservation policies were more stringent.

Natural rubber should not be demonised. Rubber plantations have the potential to sequester carbon and continue contributing to the long-term wellbeing of smallholder farmers.

There is also evidence suggesting that rubber agroforests can support at least some biodiversity. In a study published in 2019, we found a higher abundance of butterflies in rubber agroforests compared to monocultures. The presence of birds also increased in tandem with the height of herbaceous vegetation within rubber plots.

However, this does not mean that the growing demand for natural rubber should be accepted as inevitable. A clear approach to reducing the adverse effects of rubber on forests and biodiversity is to curb our use of cars, especially in more developed regions where efficient public transport systems are, or can be, established. This would not only address carbon emissions from fossil fuels but would also reduce demand for rubber.

Let Forests Grow Old to Store Huge Volume of Carbon

By Patrick Greenfield for The Guardian

FOREST conservation and restoration could make a major contribution to tackling the climate crisis as long as greenhouse gas emissions are slashed, according to a study. By allowing existing trees to grow old in healthy ecosystems and restoring degraded areas, scientists say 226 gigatonnes of carbon could be sequestered, equivalent to nearly 50 years of US emissions for 2022. However, they caution that mass monoculture tree-planting and offsetting will not help forests realise their potential.

Humans have cleared about half of Earth's forests and continue to destroy places such as the Amazon rainforest and the Congo basin that play crucial roles in regulating the planet's atmosphere.

The research, published on 13 November in the journal Nature as part of a collaboration between hundreds of leading forest ecologists, estimates that outside of urban agricultural areas in regions with low human footprints where forests naturally exist, they could draw down large amounts of carbon.

About 61% of the potential could be realised by protecting standing forests, allowing them to mature into old growth ecosystems like Białowieża forest in Poland and Belarus or California's sequoia groves, which survived for thousands of years. The remaining 39% could be achieved by restoring fragmented forests and areas that have already been cleared.

Amid greenwashing concerns around nature's role in climate crisis mitigation, the researchers underlined the importance of biodiversity helping forests reach their carbon drawdown potential, warning that planting huge numbers of single species would not help and urgent cuts to fossil fuel emissions were needed.

Rising numbers of forest fires and higher temperatures due to the climate crisis would be likely to reduce the potential, they said. "Most of the world's forests are highly degraded. In fact, many people have never been in one of the few old growth forests that remain on Earth," said Lidong Mo, a lead author of the study. "To restore global biodiversity, ending deforestation must be a top priority."

At Cop26 in 2021, world leaders pledged to halt and reverse deforestation by the end of this decade, although data shows that countries are currently off track. Brazil, Colombia and Indonesia are among nations making progress, however. The researchers said meeting this target, along with making good on UN climate and biodiversity agreements, was crucial to forests reaching their full potential.

"Conserving forests, ending deforestation and empowering people who live in association with those forests has the power to capture 61% of our potential. That's huge. It's potentially reframing forest conservation. It's no longer avoided emissions, it's massive carbon draw-down, too," said Tom Crowther, the head of the Crowther Lab at ETH Zurich. He said thousands of different project and schemes were needed to preserve and revive forests.

"It can be achieved by millions of local communities, Indigenous communities, farmers and foresters who promote biodiversity. It could be agroforestry for cacao, coffee or banana, natural regeneration, rewilding or creating habitat corridors. They're successful when nature becomes the economic choice. It's not easy but it's doable."

The research follows a controversial 2019 paper on the potential of forests to mitigate the climate crisis, which was also co-authored by Crowther, that provoked intense scientific debate among forest ecologists. The researcher inspired corporate action on forests and was credited with Donald Trump's support for tree-planting schemes.

However, several scientists felt that potential for nature to help meet climate goals had been overstated and the paper advocated for the creation of mass tree-planting, driving greenwashing concerns.

Simon Lewis, a professor of Global Change Science at University College London who was a leading critic of the 2019 paper, said the new estimate was much more reasonable and conservative.

"There is a lot of spin and bluster about what trees can do for the environment. To cut through this always ask: what is the amount of carbon taken up by a hectare of land, and over what time period, he said. "The spin on what trees can do for the climate will no doubt continue. But there is still only a finite amount of land to dedicate to forests, and ability of trees to sequester carbon is limited. The reality is that we need to slash fossil fuel emissions, end deforestation, and restore ecosystems to stabilise the climate in line with the Paris agreement."

Crowther acknowledged that he had been overzealous in the messaging around the 2019 paper.

"When I spoke to the media as an excitable 30-year-old, I said, guys, restoration has this incredible potential. And I was naive to the fact that to non-ecologists, that sounds like you're saying tree planting has incredible potential," he said.

"The fact that it was so much carbon I think gave people the idea that [the study] was suggesting that tree planting could be an alternative to cutting emissions, which categorically cannot be."

COP 28 or COP-OUT?

Next month's edition will carry a full report on COP28, the 2023 United Nations Climate Change Conference at Expo City, Dubai. As you may have gathered, I don't have the greatest confidence in significant progress being made for climate action, but hey-ho. You never know!

Saving Our Trees and Woodland

I WAS most disappointed to read an article by Louise Cullen, BBC Northern Ireland Agriculture and Environment Correspondent, reporting that there have been no prosecutions for breaches of a Tree Preservation Order (TPO) in Northern Ireland, despite more than 300 reports in three years. The Public Services Ombudsman had led a review after concerns were raised about the protection of trees in the planning system.

As you all (should) know, a TPO is made to protect selected trees or woodland if their removal impacts its environment or public enjoyment.

If a tree is protected, a council's consent is needed before it can be felled or works carried out on it. Breaching a TPO could lead to a fine of up to £100,000 or an unlimited amount., but Ombudsman Margaret Kelly found just one report resulted in enforcement action.

As part of the review, all councils in Northern Ireland, as well as the Department of Agriculture, Environment and Rural Affairs (Deara) were asked how they ensure trees are protected in the planning system.

The ombudsman found that councils and the department should work more closely together. She also recommended that information about the location of protected trees should be more easily accessible. Overall, 26 recommendations were made in areas including policy and procedure, how tree preservation orders are recorded and enforcement strategies.

The report, entitled Strengthening our roots: Tree protection in the planning system in Northern Ireland, covered the years 2019 to 2022. The ombudsman found no council has processes in place for notifying local residents of pending applications for works to protected trees.

Ms Kelly said she believes it is an issue the public are invested in. "But to really enable them to protect trees and to help us protect trees, then councils and the department need to do a lot more in terms of providing information and making that very accessible," she added.

She was also concerned that if enforcement was perceived as not being taken seriously, public confidence in the planning system risks being undermined.

Northern Ireland has just 8.7% woodland cover.

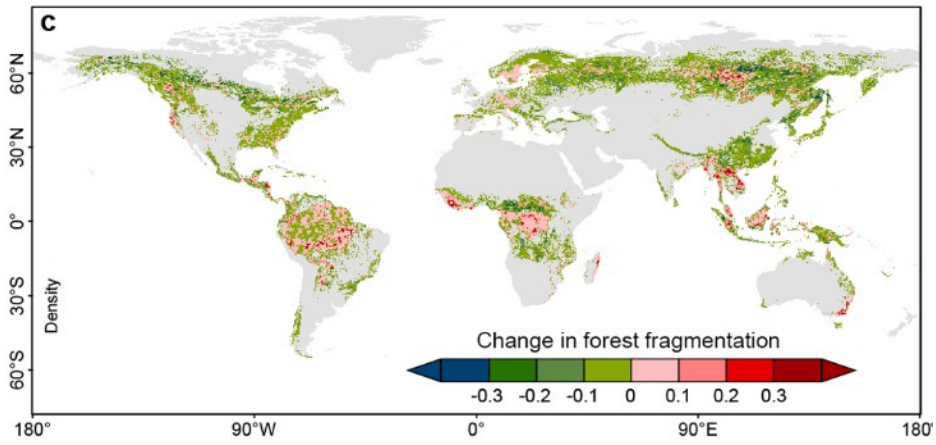
Paul Armstrong from the Woodland Trust said the report's findings were worrying.

He told BBC News Northern Ireland "Trees in Northern Ireland don't have a great deal of protection. TPOs are one of the few protections that are available, and yet we see councils and the department not making full use of those protections."

Mr Armstrong added that Northern Ireland has the lowest tree and woodland cover in Europe. "So it's really important that we plant more trees, but it's vitally important we protect the trees we already have."

WRITING on the Science News Explores website, Carolyn Wilke reported that tropical forests nave become "patchier"

Fires, roads and logging all slice through swaths of forest, chopping them into fragments. Such forest fragmentation can harm the ability of these ecosystems to sustain their animal inhabitants. Now, a study reveals that the world's tropical forests may face the greatest risk of this damage.



J. MA *ET AL/NATURE COMMUNICATIONS* 2023 (CC BY 4.0)

Even if a forest's total area doesn't change much, breaking it up can drastically reduce its function, says Jun Ma. An ecologist, Ma works at Fudan University in Shanghai, China.

Think of what happens when a glass cup breaks, he says. The same amount of glass remains, but the cup no longer holds water. Forest fragmentation is similar. Some forest-dwelling creatures require a lot of space. For example, a panda needs around 1.5 to 2.3 square miles to support its normal life in the wild. A lot of small patches of forest that add up to that area won't do.

Ma and his colleagues analysed maps of forest cover around the world from 2000 and 2020. They created a forest fragmentation index - a number that captures forests' patchiness. The researchers calculated this value for segments of forest that were 25 km^2 (6,178 acres).

The index for each area was based on the size of forested spots, how closely such areas were packed together and the length of the forests' edges. Carving up a large area of forest cuts it into more pieces. The average area of each piece shrinks while the average length of the edges grows, Ma explains. The team compared each area's index from 2020 with the one from 2000.

About 75% of Earth's forests decreased in fragmentation between 2000 and 2020, the team found. That's good news, but tropical forests, those found near Earth's equator, became more fragmented. That's worrisome because the tropics harbour much of Earth's plant and animal diversity, Ma says. The researchers shared their findings 11 July in Nature Communications.

Reducing the amount of logging in the tropics would help some of these forests, Ma says. People can also plant trees in previously unforested areas but, he says, adding new forests should make forested areas bigger, not create more small patches.

Researchers calculated a value they call the forest fragmentation index for forested areas around the world. That index measures how chopped up a forested area is. The team then calculated how this value changed in different forested areas from 2000 to 2020.

A positive change in the index means that forest fragmentation increased over that period of time. A negative change in the value means that forest fragmentation decreased.

JACK THOMSON, Local Democracy Reporter for the Glasgow Times, revealed that Dozens of trees are set to be removed from a popular woodland in Inchinnan which has been standing for more than 150 years.

The works at Teucheen Wood have been approved by Renfrewshire Council after they were deemed necessary for safety reasons.

Inchinnan Development Trust, which owns and manages the land, has been granted permission for the removal of 35 individual trees, as well as a cluster of semi-mature trees, and pruning works on another 42 trees.

The woodland is protected by a Tree Preservation Order and is designated as a site of importance for nature conservation, a report on the decision said. It added: "The tree works have been proposed following a survey by professional arborists on behalf of a community group who have assumed ownership and management of the woodland.

"The 35 individual trees proposed for removal comprise 14 ash, 12 sycamore, four Scots pine, one oak, one holly, one birch and two unidentified dead trees.

"The survey notes that the ash trees are showing poor vigour which is indicative of ash

dieback, while the sycamores proposed for

removal are said to be presenting a range of defects and include dead trees, single stem monoliths and other heavily decayed or diseased trees.

“Of the four Scots pines to be removed, three are said to be standing dead, while the fourth is noted to have a large tear in its trunk and is heavily decayed.

“The oak and holly are noted to be both windthrown and held up by adjacent trees, while the birch is described as dead.

“The cluster of additional semi-mature trees to be removed comprise a group of approximately 15 to 20 densely planted ash trees which are noted by the arborist to be displaying signs of ash dieback and are proposed for removal due to their location next to a popular footpath.

“Of the trees to be pruned, 36 of these would be subject to the removal of deadwood from their crowns, while the remaining six trees feature fractured branches requiring removal.”

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I WAS interested to read an article by Debbie James published on Farmers Weekly revealing that a new fund is set to bring woodland into “active management”.

Many woodlands that were previously “looked after” have been left to do their own thing, and with that opportunities to reverse biodiversity decline, mitigate climate change and deliver “public goods” have been lost or reduced.

Farms could also be missing out on valuable income through wood fuel and timber production by failing to manage viable woodland.

A new project, Protect Improve Expand Sustain (Pies), is aiming to change that by supporting landowners in England to bring existing woodland back into active management and to create new wooded areas.

One of the partner organisations delivering the scheme is Sylva Foundation, whose chief executive is Dr Gabriel Hemery. He describes Pies as the equivalent of taking a step on the first rung of the ladder for landowners with unmanaged woodland or considering planting new areas.

“We can help them go from position of zero management or creation to starting that journey,’’ he says.

The project is funded by the Trees Call to Action Fund, developed by Defra in partnership with the Forestry Commission and administered by the Heritage Fund.

Dr Hemery explains how it works and what it means for landowners.

Farmers and landowners taking part in the project receive free advice, including a site visit and customised report, plus ongoing online support and technical services.

The advice is delivered by independent woodland experts over three days and is worth up to £3,000 to every successful applicant. The landowner can choose which expert to engage from a list of three local to them.

That expert provider initially gathers information, maps and plans, and then agrees the time and scope of a site advisory visit with the client.

Following the initial advice and visit, digital plans and maps are shared with the landowner via a free account on the myForest platform run by Sylva Foundation.

This platform provides ongoing support to the landowner, while simplifying the process of applying for government incentives and meeting regulatory requirements.

Those who receive the free advisory visit are subsequently eligible to apply for further financial support – for example, through the England Woodland Creation Offer (EWCO).

Another valuable part of the Pies offer is the Grown in Britain Forest Certification, which is offered free for one year, supporting eligible landowners to make the most of their woodland resource.

Is the scheme specifically for managing woodland? No, the advice can be for management or woodland creation, there is no bias towards either. It may be that a landowner has existing woodland they want to restore while also planting new woodland adjacent to it, to enhance the biodiversity impact of both.

There are 91 advice visits under way and experts have assessed 3,157ha. Since the scheme launched, 463ha of woodland has been brought back into active management and 114ha of new woodland has been proposed.

Tenants can apply, but there needs to be a very specific clause in the tenancy agreement that permits long-term forestry. For that reason it is unlikely that this scheme will be relevant to tenants, but that doesn’t mean they can’t apply.

Applicants must apply formally and there is a rigorous selection process – the criteria must be met.

Eligible landowners include those with existing woodland that do not have a current management plan in place, and/or any landowner interested in creating new woodland on their land.

The offer is available to landowners in England only.

EMMA HOWGEGO, Political Reporter for BBC Radio Cambridgeshire reported that National Highways has withdrawn claims the deaths of thousands of trees beside a new road might have been due to government pressure to open it early.

Many trees died soon after they were planted alongside the 12-mile (19km) section of the A14 in Cambridgeshire. A National Highways project manager told a council meeting 850,000 trees were planted out of season after Number 10's intervention.

The company has now apologised, saying there was no request to open early.

The A14 upgrade was a huge national infrastructure project costing £1.5bn, with the section south of Huntingdon opening in December 2019, a year earlier than planned. In 2021 it was revealed many of the trees along the route were dying.

Surveys were carried out, and in March 2023 National Highways, the government company responsible for major roads, committed to replanting the dead trees.

Martin Edwards, senior project manager at National Highways, gave a progress update at a meeting of Huntingdonshire District Council's overview and scrutiny committee on 2 November.

He said planting of the original trees and plants took place in the spring, which was not an optimal time. This was because "during construction time there was a request from Number 10 that the road was opened early", he said.

Hot summers were also blamed for the death of the trees.

Work to replant the dead trees has started and is due to take place over the next few months.

Mr Edwards said lessons learnt from the A14 would be used in future projects, such as the A428 and A66 upgrades.

In a statement issued on 3 November, National Highways said: "The A14 Cambridge to Huntingdon improvement scheme opened early because the construction work was complete.

"It was always our aim to finish the work early to minimise disruption to travelling motorists and the local community, so they can feel the benefits of the upgrade as soon as possible.

"There was no request from government or Number 10 that the road open early. We apologise that this suggestion was made at yesterday's Huntingdonshire District Council meeting.

"All trees on the A14 Cambridge to Huntingdon improvement scheme were planted at the appropriate time of year. There is no link between the failure rate and when the upgrade opened.

"There were several factors behind the failure rate including the weather, maintenance and species of trees planted. All of which National Highways is rectifying in our ongoing replanting programme."

THE Daily Telegraph reported that a protected 180-year-old oak tree was permanently damaged after it was slashed with a chainsaw under cover of darkness in a quiet cul-de-sac. It is not known why the oak was targeted.

The much-loved magnificent oak had two large and deep slices cut into its trunk on two separate occasions. It is thought the attacker used the cloak of night and a quieter electric chainsaw to carry out the two bodged attempts to fell the 50ft tree three weeks apart in August.

The specimen is on communal land in Lampton Close in Wool, Dorset, and is subject to a Tree Preservation Order, making any attempt to destroy it an illegal act. Dorset Council has launched an investigation.

At first officials said the weakened tree would have to be felled as the damage meant it was a danger to people and property, but tree surgeons have since visited the site and managed to save the mighty oak after removing

20ft from the top to take the weight off it.

Dorset Council said: “Our team have managed to save the tree and they are hoping that it will reshoot and continue to grow. We are still following up lines of inquiry to find the person responsible.”

STORM BABET and Storm Ciarán devastated parts of the county with high winds and flooding and took their toll on our precious trees. We are still counting the losses and numbers will increase in the coming weeks as we discover more trees damaged to the extent that they have to be felled on safety grounds.

Shannon Eustace, writing for BBC News, Suffolk, reported that a historic oak growing in the grounds of Nedging Hall in Suffolk, thought to be 1,000 years old and the oldest tree in Suffolk, fell victim.

Charlie Buckle, managing director of the estate near Hadleigh, said: "It is very sad to see the end of such a magnificent tree."

The team plan to turn part of the tree into furniture, while the main trunk will be left as a habitat for wildlife.

A statement from Nedging Hall read: "There are some incredible trees across the 5,000-acre Nedging Hall Estate, but this ancient oak was the most significant."

With a focus on sustainability, the estate team looked at how it could best use the oak, and furniture will be made for its three pubs: The Lindsey Rose, The Bildeston Crown and The Brewery Tap.

"It will be a tribute to bring it back to life as characterful furniture for our restaurants," said Mr Buckle.

The team has also planted another oak on the grounds.

"[It] will hopefully have its own story to tell in 1,000 years," he added.

WRITING for the Norwich Evening News, Francis Redwood reported that bags of rubbish set on fire by yobs in Sprowston woodland. Folk trying to help keep woodland clean and tidy were left upset after litter they had collected was set on fire.

Gerri Waring, who lives in Breck Road, Sprowston, set up a litter pick with three other people, including her husband Tony, to help clear Harrison's Wood and the Cottage Plantations.

The rubbish, which included cans, bottles and even a rollator walking frame, was left strewn across the car park of the Cottage Plantations after the group's litter pick.

Mrs Waring, 59, said: "We held a litter pick between 10.00 and 12.00 on Sunday. We collected between 8 and 10 bags of rubbish overall and, as per our instructions by Broadland council, we left the bags by the pedestrian bins for it to be collected.

"Unfortunately, in the meantime, someone decided to set fire to them in the night. We're very disappointed that our efforts have been largely wasted. "It's just pointlessly destructive and it shouldn't happen. I don't understand what must go through someone's head to do this and why they would think it's fun."

A spokesman for Norfolk Fire and Rescue Service said: "One appliance from North Earlham attended a fire in the open along Blue Boar Lane at 8.45pm. Hose reel jets were used to extinguish the fire and the stop message was received at 9.01pm."

Despite the incident, Mrs Waring said she will not stop trying to help keep the community clean. She added: "We will absolutely continue to do our litter picks. It won't put me off doing what I think is right. If anything it makes me more determined to carry on."

THE Yorkshire Post’s Shannon Mower reported that residents have protested the approval of a housing development on a Doncaster woodland which was resubmitted after being rejected earlier this year.

Doncaster Council’s planning committee has voted to approve a resubmitted application for housing on Bessacarr nature spot Rose Hill Rise in an unexpected U-turn. The committee had previously rejected the controversial plans, which remain almost identical, when they were presented in March.

Development on Rose Hill Rise has been protested extensively by the Rose Hill Residents Association (RHRA) since the land was first advertised for sale in 2017.

More than 60 members of the public attended the meeting to protest the plans, with a public demonstration taking place outside Doncaster Council’s Civic Office beforehand.

Attendees first heard from planning officers, who stated that the application is “fundamentally the same as the one refused.”

Changes included an updated traffic survey, which suggests that impacts on traffic are slightly less significant than recorded previously, and updates to homes based on building regulations.

The site includes 34% public open space, while developers will be required to fund biodiversity net gain off-site to make up for habitat loss. Hundreds of thousands of pounds are expected to be contributed, as the development itself will create a biodiversity net loss of over 50%.

The developer will also contribute £481,000 to fund 18 places at Hall Cross Academy.

Chris Owen spoke in opposition of the application on behalf of residents. He said: “Construction will make living in and around Rose Hill a nightmare. Highway safety issues, noise, dust, queues, delays, accidents, one of Doncaster’s busiest roads, and a quiet housing estate turned into a construction site.

“The design of this scheme ignores the tree survey which says every tree has value and as many as possible should be maintained, and bulldozes all trees and woodland in its path, destroying ecological interest and all public amenity of this much-loved and much-used space.

“Last time, they wrongly claimed that 115 trees would be lost. Now, no number is given, neither they nor officers want you to know that hundreds of trees including 1 ha of woodland will be destroyed under these plans. That officers either don’t know or don’t care about the number and value of trees being destroyed should give you serious concerns about the approach they’ve taken.

“Local authorities must have the trust of those they represent. Please send a message that people can trust that when this committee says no, it means no.”

Bessacarr councillors Nick Allen, Majid Khan and Laura Bluff all continued to oppose the application.

Cllr Allen said: “I rest assured knowing what I know now, if this application is again refused I’ll see you all in six months’ time, if that’s the way you go about things. You send a message to the public that your decision making powers are effectively open to being curtailed.

“The role of a council, to represent its residents, is being challenged effectively here in a thoroughly undemocratic and unjust way.”

In support of the application, Miller Homes representatives said: “Your professional officers have told you that there are no material considerations to justify a decision that it is not in accordance with your development plan.

“We commend local residents for engaging in the submission in the way that they have, but we are conscious that the submission is very technical and detailed in nature and we don’t want members to be confused or misled on very complex matters.”

The planning committee then left the chamber to discuss matters which were excluded from the public. Upon their return, no member wished to engage in debate.

Seven councillors voted in favour, while only councillors Steve Cox and Gary Stapleton abstained.

Uproar could be heard from the public upon the decision, with several leaving the chamber.

Wendy Wright, Secretary of the RHRA, told the Local Democracy Reporting Service “I am absolutely disgusted with this council, they haven’t got the backbone to stand up to bullies. There is no democracy left in this council, it was obvious when they all came back that they had been told what to vote, regardless of what the application was all about. If that’s what this council stands for, I think this city is in a very sorry state.”

WRITING on the BBC News website, Carmelo Garcia reported that the public gallery erupted with cheer and applause as trees and woodland at Stroud District Council voted to grant a TPO for trees at Verney Fields in Stonehouse, a Gloucestershire beauty spot.

Council officers said the trees contribute significantly to landscape and ecology of the land covering part of the western slope of Doverow Hill, just to the north-east of the town's railway station.

Objectors to the TPO said it is too vague and fails to highlight the specific trees and species they wish to preserve, said the Local Democracy Reporting Service (LDRS).

The site was previously a mixture of low-use grazing and scrub, but after a change of ownership the council has applied to protect the woodland.

At the development control committee meeting on 14 November, councillor and former mayor Mattie Ross said everyone who lives in the town knows Doverow Hill and the "magnificent" trees there. "People value it beyond anything else. You can see by the level of public opinion how people feel about it."

Stonehouse town councillor John Callinan also argued the case for the TPOs to be granted. He said they thought originally that the magnificent oaks there were covered by the TPOs, but they were not.

"With the arrival of a new landowner in the town council we quickly realised that we needed to carry out a check on the status of our trees."

A statement was read out on behalf of Ms Linda Maiik who is the owner of most of the Verney Fields area subject to the TPO. The perceived threat to the trees was "non-existent", she said and felt the imposition of a TPO would "destroy a new business before it has been given the chance to flourish".

JOHN PLUMMER, reported on The Stray Ferret website that Tree campaigner Sarah Gibbs has described Harrogate Spring Water's plans to plant 1,200 trees to offset the loss of 450 others as "greenwash".

The company revealed on 15 November that it will create a two-acre community woodland if it is granted permission to expand its bottling plant on Harlow Moor Road in Harrogate.

Expanding the plant would involve felling 450 trees in adjoining Rotary Wood, including some planted by schoolchildren in the 2000s.

However, Ms Gibbs, who frequently dons a tree costume as part of her campaign to save Rotary Wood, said "the idea that you can offset this destruction is ludicrous".

Harrogate Spring Water said its plans, which would create 50 jobs, would see three trees replace each one lost and "deliver a 10% increase in biodiversity levels in the area". It is also identifying other locations in Harrogate to plant an extra 1,500 trees.

However, Mrs Gibbs said "A sapling is not adequate compensation for the loss of a mature tree. It's a misconception to say they can be replaced like this. It's incorrect in terms of the wider impact on ecology.

"Clearly they have not listened to the public. They should leave the trees alone. They were planted by children to avert a climate crisis. This is ludicrous greenwash and I hope North Yorkshire Council steps in and says 'no'."

Harrogate Spring Water, which is part of French multinational Danone, secured outline planning permission in 2017, which means the principle of development has been established, but it still requires North Yorkshire Council to approve a reserved matters application that agrees the details of the scheme.

A previous application by Harrogate Spring Water was rejected by councillors in January 2021. Managing director Richard Hall said the company had listened to concerns because the proposed new woodland would, unlike previous plans, be open to the public.

Ms Gibbs said: "26,000 single-use plastic bottles an hour, shipped globally. That's what they produce now. If this development goes ahead this number will increase. Global shipment means lorries, planes will increase, CO_2 will increase, water extraction will increase. The only thing that will increase that they care about, is profit margins.

"Who's to say years down the line they won't want to expand again and destroy more of our beautiful pinewoods and planet? We need less plastic. We need to protect our existing woodland".

LEEDS CITY COUNCIL has issued a warning over the unauthorised felling and pruning of trees following a prosecution which led to a sizeable fine for a local landowner.

The council mounted the prosecution after a total of 150 protected trees were damaged on agricultural land at Thorpe Lane in Guiseley between March and May this year. Limbs were torn from many of the trees using heavy machinery, with oaks, sycamores, limes and horse chestnuts among the species affected.

As the site is covered by a woodland Tree Preservation Order (TPO), formal permission should have been sought before the work was carried out but this was never obtained.

Following an investigation that involved planning enforcement, tree and legal teams from the council, a prosecution was brought against the owner of the land, John Ogden, of Victoria Avenue, Ilkley. Mr Ogden was told to pay £13,840 in fines, costs and victim surcharge after pleading guilty to breaching a TPO when appearing before magistrates on 14 November.

The council welcomed the result of the case, saying it should serve as a reminder that Leeds is ready to take necessary and proportionate action to protect its tree stock.

Councillor Helen Hayden, Leeds City Council's executive member for sustainable development and infrastructure, said "We take any damage to our city's trees extremely seriously and, where wrongdoing has been committed, we are fully prepared to use the enforcement powers that are available to us.

"Protecting our tree stock and increasing tree cover across the city is important to the council as it aligns with our net zero and ecology ambitions. I would like to thank all the officers who worked on this case for their diligence and determination in securing the outcome we saw at court this week. It was a joined-up approach with a successful result that will hopefully act as a warning to anyone who is considering flouting the rules on felling and pruning trees in our city."

The unauthorised work on the trees at the Thorpe Lane site, close to the A65 roundabout, was said by the defendant to have been carried out to facilitate the installation of new fencing.

MILLIE PARK reported on the Times & Star website that protestors took to the streets of Cockermouth to show their opposition to the proposed felling of more than 40 mature trees.

The trees, on the edge of Harris Park and along the Greenway, will be cut down to make way for a four-storey apartment block and six houses as part of The Sidings development. The scheme was recently agreed by Cumberland Council.

One of the event organisers, Kate Parry, estimated there were "at least 200 people, ranging in age from five to 92, maybe as many as 400 at the protest. Shopkeepers were standing in their doorways clapping and waving us on and car drivers were tooting their support. The atmosphere was great."

Fellow organiser Gabrielle Sanders said: "It was wonderful to see so many people turn up and join in. It just shows the strength of local opposition to the development. People in Cockermouth know that the woodland provides precious habitat for wildlife such as red squirrels, birds and bats.

"Harris Park and the Greenway are also enclaves of peace and tranquillity in an increasingly busy town centre. People were very clear on Saturday: these trees matter and we won't stand by and watch them be cut down."

The protestors were joined by award-winning filmmaker Terry Abraham, who addressed the crowds. Afterwards he said: "The people of Cockermouth have big hearts.

"They sent a clear message to Cumberland councillors on Saturday: this woodland is an important feeding ground for red squirrels – one of this country's most beautiful and rare creatures. The trees have Tree Protection Orders on them. Why have these been removed?"

Imogen Barnfather attended the march with her young son, and addressed the crowd: "We do not live in a time where mature woodland can be considered low value. We should be taking every opportunity to preserve our local ecosystem. It is our responsibility to preserve our environment for future generations, for the young people of Cockermouth.

"It is so important for the mental health and well-being of our community, to be able to access green spaces. We do need homes, but we need more social housing, not luxury flats."

Local musicians entertained the crowds, including Dave Camlin and his choir, Sing Owt, and young Cockermouth singers Tilly Bridgman and Freya Atherton.

A petition opposing The Sidings development, launched by campaign group Protect Cockermouth Wildlife, has attracted 5,500 signatures.

The site is being developed by Dobies Cumbria Properties Ltd, which says that more trees will be replanted than felled.

OWEN SENNITT, Local Democracy Reporter for the EDP, reported that the mystery over an application to cut down part of a protected tree that led to confusion in a quiet cul-de-sac has been unravelled.

The bid to get permission to trim off 3m from a large oak in Turner Close, Bradwell, prompted an accusation by the resident who owned the tree that it had been made "fraudulently". They said it had been lodged in their name without them having any knowledge of it, and argued the tree was healthy and should be left alone.

The homeowner said: "Someone seems to be fraudulently using my name to work on the tree on my property. This is not the first time that this has happened. I do not wish for this work to go ahead."

It left some members of the small community puzzled but the cause of the incident has now been revealed. According to Amanda Cover, who lives at the neighbouring property, a council error meant that the wrong name was put on the application.

She said: "It was a mix-up with the planning application which had the wrong name and address on it. It wasn't made fraudulently and the council soon rectified the mistake."

While the error may have caused a bit of commotion among neighbours, the tree, which has been protected since the 1980s, remains unscathed despite the request to reduce its canopy.

After reviewing the application, GYBC's tree officer urged the authority to reject the work, claiming it would have damaged the health of the tree and would have left large pruning wounds. The official worried cutting too much off the canopy may have led to the tree's "overall demise."

Protected trees can often lead to disputes among neighbours, with homeowners tussling over whether or not a tree should be cut down.

While some people may find falling debris a nuisance or become frustrated that the dense foliage blocks their sunlight, others cherish their natural beauty and importance to wildlife.

Tree Preservation Orders and Conservation Area News

Broadland Tree Preservation Orders Served, Confirmed and Revoked

TPO No	*Address*	*Served*	*Trees Protected*	*Status*
2022 No 13	Land rear 9 St Paul's Close, **Hellesdon**	16/12/2022	**T1 magnolia**	Provisional
2023 No BD0601	5 Church Lane, **Sprowston**	28/04/2023	**T1 oak** in rear garden.	Confirmed without modification
2023 No BD0604	Land east of Manor Road, **Newton St Faith**	15/05/2023	**T1, T5, T6, T7, T8, T9, T11, T12, T13, T16, T17, T18, T19, T20, T21** & **T22 oak, T2, T14** & **T15 ash, T3 apple, T4 sycamore** and **T10 holly**	Confirmed without modification
2023 No BD0605	Front garden of Beechbank, Buckenham Road, **Lingwood**	17/05/2023	**T1 copper beech**	Confirmed without modification
2023 No BD0608	Front garden of The Rectory, Norwich Road, **Acle**	19/06/2023	**T1 stone pine**	Provisional
2023 No BD0609	Land adj cycle path south of Broadland Northway, from track leading from Reepham Road, **Taverham**	22/06/2023	**A1 mixed area.**	Confirmed with modification
2023 No BD0611	Land east of Fred Tuddenham Drive, **Cawston**	29/06/2023	**G1 oak x 8.** **W1 mixed woodland**	Provisional
2023 No BD0613	Fourwinds, 37 Waterloo Road, **Hainford**	02/08/2023	**G1 mixed group of 4** in rear garden	Provisional
2023 No BD0616	3 Barrack Yard Cottages, Church Road, Wickhampton, **Freethorpe**	26/07/2023	**T1 ash** in front garden.	Provisional
2023 No BD0622	Highway verge south of White Woman Lane, **Sprowston**	13/09/2023	**T1, T2 & T3 hornbeam**	Provisional
2023 No BD0625	Land north of 17 Marsh Road, **Upton**	22/09/2023	**T1** & **T5 oak, T1** & **T4 field maple** and **T3 oak**	Provisional
2023 No BD0630	Land east of Sears Close, **Aylsham**	01/11/2023	**T1 oak**	Provisional
2023 No BD0632	Land on south-east side of Cawston Road, **Reepham**	09/11/2011	**T1 oak**	Provisional
2023 No BD0634	Land south-east of St Margarets Church within church grounds next to lychgate.	14/11/2023	**T1 lime**	Provisional
2023 No BD0635	Land south of Muck Lane, **Rackheath**	21/11/2023	**T1, T2, T3, T4, T5, Y6, T7, T8, T9** and **T10 oak**	Provisional

Current Works to Trees Subject to a Tree Preservation Order and Section 211 Notifications for Works to Trees Within Conservation Areas

App No	*Address*	*Cat*	*Species / Requested Works*	*Decision*
2023/2001	Sawley Villa, 40 Blofield Corner Road, **Blofield**	TPO	**T1 oak -** 16m ht, 10m spread. 2nd branch N crown 10cm dia raise to 3m reducing back to suitable pruning point by 2.5 - 3m. Low NW branch reduce by 3.5 - 4m. 2nd NW branch reduce by 3 - 4m. First NE branch 25cm dia remove small secondaries growing toward dwelling. Reduce by 3 - 3.5m. Tip back crown branches by 3 - 4m	02/08/2023
2023/2256	4 Berryfields, **Brundall**	TPO	**T1 lime** - current height 21m, radial spread 7- 8m in all directions. Crown lift to around 5m and reduce by around 1.5m Crown clean.	Approved
2023/2389	Land adj to 90 Lower Street, **Salhouse**	TPO	**Beech** - remove branches hanging over and touching roof of newly constructed bungalow.	Approved
2023/2602	31 Swansgate, **Old Catton**	TPO	**T1 horse chestnut** - crown reduction 2-3m to suitable growth points.	Approved
2023/2727	Beeches, 60 Ollands Road, **Reepham**	TPO	**T1 copper beech** - reduce crown by approx 3m in height from 17m to 14m and spread from 13.9 to 10.9m.	Approved
2023/2789	5 Kinsale Avenue, **Hellesdon**	TPO	**T1 silver birch** - remove 5m of overhanging branch (over public alleyway linking Kinsale Avenue to Links Avenue), leaving 11m to base of tree and remove 1-2m from height leaving 13m.	Approved

2023/2852	25 Woodland Drive, **Thorpe End**	211	**T1 purple cherry plum** - prune back crown by 50% overhanging neighbours. Prune internal to open up and outside to balance. **T2 European horse chestnut** - crown lift to 5.5m over road and garden Remove dead or compromised branches and prune no more than 0.5m where needed to produce aesthetic pleasing shape.	No objection
2023/2854	111 Salhouse Road, **Sprowston**	TPO	**T1 oak** - crown raise to 2.5m over path and 5.2m over the roadway.	20/11/2023
2023/2915	1 Bulwer Close, **Buxton**	TPO	**T1 apple** – fell.	Split decision
2023/2921	2 Goodwood Close, **Thorpe St Andrew**	TPO	**T1 ash** & **T2 oak** - fell. **T3 ash** - crown lift to 2.4m over footpath and 5.4m over highway and reduce failed limb back to suitable point.	Withdrawn
2023/2968	16D Harvey Lane, **Thorpe St Andrew**	TPO	**C1 grey poplar** - approx 22m. Reduce to 16m. **C2 *Acacia* –** approx 17m. Reduce to 15m. **C2 beech** - approx 17m. Reduce to 14m. **T2 Scots pine** - approx 20m. Reduce lower branch by 1.5m. **G2a beech** - approx 24m. Reduce lower branches by 2m. **G2b beech** – approx 23m. Reduce to 18m.	Approved
2023/2971	11 Post Mill Close, **Newton St Faith**	TPO	**T1 walnut** - remove damaged limb at circa 4m and remove split limb with hazard beam overhanging neighbours' garden.	Approved
2023/2972	Land adj 2 Goodwood Close, **Thorpe St Andrew**	TPO	**AMET09 *Fraxinus excelsior*** – fell.	Approved
2023/2973	121 Woodside Road, **Thorpe St Andrew**	TPO	**AMET09 oak** – fell**.** **AMET095 ash** - crown lift to 2.4m over footpath, crown lift to 5.4m over highway and reduce failed limb back to suitable point.	Approved
2023/2986	21 Stony Lane, **Reepham**	TPO	**T1 sycamore** - located within G1 and closest to garden. Stem dia 0.8m, canopy ht 10m, canopy width 7m. Reduce lateral branches leading toward garden by 2m and canopy height by 2m due to light being restricted within the garden. **G1 sycamore, beech, lime and Scots pine** - stem dia of 0.5-0.8m, canopy width 3-6m, canopy height 8-10m. Reduce group height by 2m, allowing light into garden.	Split decision
2023/2993	The Cottage, 4 The Street, **Burgh**	211	**Beech** - height 20m, width 12m. Approx 3m between tree and house and approx 3m from road. Prune back approx 3-3.5m.	No objection
2023/3011	248 Plumstead Road East, **Thorpe St Andrew**	TPO	**T1 sweet chestnut** - pollard to an approx height of 12-15m.	Split decision
2023/3018	7 Beechlands, **Taverham**	TPO	**T1 oak** - front of house. Crown lift to 5m and crown thin 15% **T3 conifer group** – roadside. Reduce height by 3m from 7m to 4m. **T5 sweet chestnut coppice group** - reduce north side by 2m from 6.5m branch length to 4.5m.	21/11/2023
2023/3037	Hammill House, 4 Barber Place, **Thorpe St Andrew**	211	**T1 oak** - fell.	No objection
2023/3058	21 Withy Way, **Taverham**	TPO	**T1 oak** -reduce crown from property by 1.5 to 2m to suitable growth points and crown thin by 10% to involve removal of epicormics **T2 oak** - reduce lower limb above outbuilding of number 23 by 1.5 to 2m to suitable growth points and thin limb crown by 10%	Approved
2023/3069	The Laurels, 20 Norwich Road, **Horstead**	211	**T1 cherry** – fell.	No objection
2023/3118	Church of Saint Peter & Saint Paul, The Street, **Heydon**	211	See tree survey schedule.	No objection
2023/3128	55 Charles Close, **Wroxham**	211	**G1 silver birch** (5m). Reduce height by 1m to old reduction points. **T1 silver birch** (5m) & **T2 cherry** (3m) – dead. Remove. **T3 oak** (12m). 10 to 15% crown thin removing internal epicormics. **T4 conifer** (2.5m) -dying. Remove.	No objection
2023/3129	22 Bishops Close, **Thorpe St Andrew**	211	**G1 conifers** - fell and grind out stumps. **T1 *Viburnum*** - outgrown position. Crown reduce overall, ht from 4m to 2m, spread from 7m to 4.5m.	No objection
2023/3148	Buregate House,17 Church Lane, **Wroxham**	211	**T1 lime** - 11m. Pollard at 9m to reduce shading into garden. **T2 lime** - height 13.5m, width 5.8m. Crown raise to 4.5m over garden and reduce extended limbs back into the current crown line.	No objection
2023/3150	21 Charles Close, **Wroxham**	211	**T1 conifer** - ht 3.5m. Remove. **T2 silver birch** - ht 11m, width 5m. Crown reduce by 3.0 - 3.5m to improve shape	No objection
2023/3151	42 Charles Close, **Wroxham**	211	**T1 cherry** – ht 4m, w 5m. Reduction of 1.5m to re-shape tree. **G2 hazel, Atlas** - all 4m to be reduced to 2m. **T3 sycamore** – ht 5m. Reduce height by 1.5m to re-form shape. **T4 conifer** – ht 7m. Reduce height by 2m.	No objection

2023/3153	228 Fakenham Road, **Taverham**	TPO	**T1** & **T2 English oak** – crown raise to 4.5m. Remove deadwood.	Approved
2023/3154	31 Nelson Way, **Hevingham**	TPO	**T1** & **T2 English oak** - reduce garden side by 1m from 5m to 4m.. **T3 English oak** - remove deadwood.	Approved
2023/3162	Limanda,15 Norwich Road, **Strumpshaw**	TPO	**T3 birch** - fell. **T4 oak** - pollard at 10-12m. Remove epicormics. Deadwood south.	Split decision
2023/3173	Pemberley, 7 Church Street, **Old Catton**	211	**T1 English oak** - selective crown reduction 2.5 m to suitable growth points leaving top portion of crown and reducing sides to keep good structural form. **T2 holly** - reduce 2 scaffold laterals by 2m to suitable growth points.	No objection
2023/3179	Mokyll Croft, **Taverham**	TPO	**T1** & **T2 sycamore** - fell.	Approved
2023/3193	39 Stocks Loke, **Cawston**	211	**T1 hawthorn** - approx height 4m. Pollard to fence height. **T2 hawthorn** - height 4.5m. Reduce by 1.0-1.5m to growth points.	No objection
2023/3216	18 Oaklands Close, **Halvergate**	211	**T2 oak** - reduce overhanging branch from 40ft by 20ft. **T3 oak** - remove overhanging branches (40ft) back to trunk.	No objection
2023/3222	Cambridge House, 9 The Boulevard, **Thorpe St Andrew**	211	**T1, T2, T3 willow** - approx 6m ht. Reduce by 1m back to old pollard points at 5m above ground level. **T4, T5, T6 horse chestnut** - approx 12m ht. Reduce by 8m back to old pollard points at 4m above ground level. **T7 laburnum** - reduce and raise west aspect by 2m for vehicle. **T8 rowan** - small suppressed specimen. Remove. **T9 purple plum** & **T10 whitebeam** - approx 4m ht. Reduce crown by approx 1m. **T11 lilac -** on neighbouring property. Reduce western overhang.	No objection
2023/3232	11 Stanmore Road, **Thorpe St Andrew**	211	**T1 beech** - reduce crown overhanging garden and path (west) by 2m and reduce crown spread from 10m to 8m. **T2 beech** - remove upright facing west back to union growing toward greenhouse. Reduce limb growing toward greenhouse by 3m to bring in line with rest of canopy and reduce remaining crown by up to 1.5m (where necessary) to bring in line with other beech tree, creating an even tree line. Reduce crown spread from 10m to 8m.	No objection
2023/3234	Barleycoomb House, 3 Hartwell Road, **Wroxham**	211	**T1 beech** - 13m height. Remove. **T2 horse chestnut -** 10m height Remove low bought over driveway. **T3 sycamore** - 13m height. Reduce overhang of rear garden by 2m. **T4 sycamore** - 8m height. Remove.	No objection
2023/3235	Ashford House, 8 Hartwell Road, **Wroxham**	211	**T1 magnolia** - 6m height. Pollard at 4m**.** **T2 cherry** - 9m height. Reduce from boundary by 3m for clearance**.** **G1 sycamore x 3** - 4-6m height. Remove.	No objection
2023/3240	6 Ames Court, **Cawston**	211	**T1 holly** - height approx 8m. Reduce crown by approx 3m and reshape sides by 1m	No objection
2023/3245	93 Stuart Road, **Aylsham**	211	**T1 spruce** - fell.	No objection
2023/3247	The Red Barn (Annexe), 2 Twyford Lane, **Cawston**	211	**T1, T2** & **T3 ash** - fell.	25/10/2023
2023/3248	Royal Norwich Golf Club, Weston Hall Road, **Weston Longville**	TPO	**T1 beech** and **T2 turkey oak** - fell under an exception of TPO restrictions for dangerous trees.	Exempt tree works
2323/3249	Royal Norwich Golf Club, Weston Hall Road, **Weston Longville**	TPO	**T1 elm, T2 sycamore, T3 ash** and **T4 elm** - fell under an exception of TPO restrictions for dead trees.b	Exempt tree works
2023/3250	Abbots House, 25 White Hart Street, **Aylsham**	211	**T1 willow** - fell.	No objection
2023/3265	The Old Vicarage, The Street, **Halvergate**	211	**T1 holly** - fell under an exception of Conservation Area restrictions for dead trees.	Exempt tree works
2023/3274	2 Wensum Valley Close, **Hellesdon**	TPO	**3 x beech** - cut back lower overhanging branches by 3.5m from 6m from boundary to 3m and to a maximum height of 7m.	13/11/2023
2023/3276	Dawdys Farmhouse, The Street, **Halvergate**	211	**T1 ash** (tree group) **& T3 hazel** - fell. **T2 cherry** - reduce height by 4 m from 12m to 8m.	26/10/2023
2023/3278	The Reeds, 123 Lower Street, **Salhouse**	211	**T1 Norway maple -** reduce spread from 8m to 6m and height from 8m to 6m. Pole thin by up to 20%.	27/10/2023
2023/3286	6 The Maltings, Millgate, **Aylsham**	211	**T1 Eucalyptus** - height approx 9m. Fell.	No objection
2023/3291	Stonemasons Arms, 40 Millgate, **Aylsham**	211	**T1 beech** - fell under an exception of Conservation Area restrictions for dead trees.	Exempt tree works

2023/3292	Fern House, Dereham Road, **Reepham**	211	**T1 yew** - pollard and remove dead wood. **T2 yew** - remove dead wood and cut back by 1m. **T3 pines** - remove dead wood. 3 tree line - crown reduce by 2m. **T4 Portugal laurel** – fell. **T5 copper beech** - reduce by 5%. **T6 conifer** - fell and replace with *Taxodium.* **T7 conifer** - fell and replace with *Ginkgo* **.** **T8 *Thuya*** - reduce by 12%. **T9 beech** - works to maintain open centre. **T10 *Eucalyptus*** - fell and replace with *Acer.* **T11 *Gleditsia*** - remove some laterals. **T12 walnut** - reduce lever by 12%. **T13 copper beech** - treat fungus and extract dead wood. **T14 hollies** - 20% crown reduction and reduce height by 1m. **T15 magnolia** & **T16 *Sequoia*** - tree protection fences**.**	No objection
2023/3295	33 Charles Close, **Wroxham**	211	**TA laburnum, TE holly** and T**F sycamore** – fell. **TB *Eucalyptus*** - trim to previous pollard point. **TC conifer** - trim in line with *Eucalyptus* as per previous works.	14/11/2023
20233300	Land at Haveringland Hall Park, **Haveringland**	TPO	**T1, T2, T3** & **T4 common ash** – fell.	Split decision
2023/3302	6 Library Close, **Blofield**	TPO	**T1 pine** - fell.	Approved
2023/3303	26 Gardyn Croft, **Taverham**	TPO	**T1 oak** - reduce by 2m away from property and crown lift to 5.2m. **T2 oak** - crown lift to 5.2m.	Approved
2023/3305	9 White Hart Street, **Aylsham**	211	**T1 Portuguese laurel** - fell.	No objection
2023/3307	Dormer Lodge,14 Plumstead Road, **Thorpe St Andrew**	211	**T1 Leyland cypress** – fell.	No objection
2023/3308	9 Charles Close, **Wroxham**	211	**T1** & **T2 European lime** - previously pollarded at 14m. Create new pollard points at 12m. Re-pollard width into previous pollard points.	No objection
2023/3320	The Rectory, 73 The Street, **Brundall**	TPO	**T1 oak** - 17m ht / 10m w. Remove deadwood and shorten limbs toward property by approx 3m. This section will then be blended to re-shape structure. **T2 yew** - 7m ht - Crown raise to 4m over the driveway.	Split decision
2023/3360	73 Bishops Close, **Thorpe St Andrew**	211	**T1 fir** - height 12m and width 6m. 2.5m height reduction and 1.5m width reduction.	No objection
2023/3363	11 Bure Way, **Aylsham**	211	**Ash x 2** - reduce height from 16m to 13m. 3m crown reduction. Crown clean	09/11/2023
2023/3370	8 Barnby Road, **Badersfield**	TPO	**T1 cherry** - remove deadwood and reduce back from building to give clearance of 1.5m to leave 3-4m. **T2** cherry - reduce side overlaying garden by 2-3m to leave 5-6m.	02/11/2023
2023/3386	Ivy House, Market Hill, **Foulsham**	211	**T1 ash - r**educe height from 16m to 13m, N spread from 7m to 4m, E from 6m to 4m, S from 5m to 3m and W from 6m to 3m.	10/11/2023
2023/3388	108 Kingswood Avenue, **Taverham**	TPO	**T1 Scots pine** as per the plan. Fell.	Approved
2023/3397	The Rookery, Sandhole Road, **Halvergate**	211	**T1 Indian bean** – pollard. **T2 lime -** crown raise to 6m over flower bed. **G1 holly**- coppice selected stems leaning over driveway and crown raise to 6m over driveway. **T3 Spanish chestnut** – crown raise to 5m. **T4 oak** - remove deadwood (exempt) over driveway and remove split hanger. **G2 2 x ash** - crown raise over coach house by 6m for 4m clearance from building. **G3 sycamore** - crown raise to 7m and give building 3m clearance, **holly, chestnut** & **ash** - clearance from building by up to 4m.	No objection
2023/3416	Spinney Lodge, 16 White Lion Road, **Coltishall**	211	**T1** & **T2 English oak** – fell.	No objection
2023/3419	Charles House, Beech Avenue, **Taverham**	TPO	**T14 oak** – fell.	08/11/2023
2023/3424	Land adj to 50 The Avenue, **Wroxham**	TPO	**T1 sweet chestnut** - reduce by 3m from 16m height and reduce by 2m from 16m spread, remove detached hanging branches.	17/11/2023
2023/3428	Royal Norwich Golf Club, **Weston Longville**	TPO	**T1 beech** & **T2 Turkey oak** - fell under an exception of the TPO restrictions for dangerous trees.	Exempt tree works
2023/3429	Royal Norwich Golf Club, **Weston Longville**	TPO	**T1** & **T4 elm, T2 sycamore** & **T3 ash** - fell under an exception of the TPO restrictions for dead trees.	Exempt tree works
2023/3444	Blickling Lodge, Cromer Road, **Blickling**	211	**T1 English oak, T2 small-leaved lime, T3 Turkey oak, T5 ash, T9 beech, T46 aspen** and **T47 hornbeam** – fell.	09/11/2023

2023/3450	18A Stanmore Road, **Thorpe St Andrew**	211	**T1 cedar** - fell. **T2 *Prunus*** - reduce eastern aspect of tree by 1.5-2m (current radial spread 6-6.5m).	13/11/2023
2023/3463	Bridge House, 2 The Street, **Burgh**	211	**T1 willow** - 15-20% crown reduction. Reduce height from 18 to 15m. **T2 walnut** - crown thin and 15% reduction. Reduce height from 14 to 12m.	13/11/2023
2023/3490	15 Shakespeare Way, **Taverham**	TPO	**T1 oak** - remove major deadwood and prune branches extending toward and overhanging house to allow 2m clearance from building.	16/11/2023
2023/3491	Falkirk House, 36 Plumstead Road, **Thorpe End**	211	**T1 maple** - reduce radial crown spread from 4m to 2.5m, reducing to suitable branch in order to reduce overhang of neighbour's property. **T2 juniper** - fell dying conifer within conifer group.	16/11/2023
2023/3499	19 Station New Road, **Brundall**	TPO	**T1 - T7 ash** - fell and replant.	17/11/2023
2023/3509	Moor House, The Moor, **Reepham**	TPO	**T1 ash** - Fell. Ash Dieback. **T2 Douglas fir** - fell. Root issue or fungal needle disease. **T3 Douglas fir** - fell. Crack approx 14m up west side of stem.	20/03/2023
2023/3528	8 Church Terrace, **Aylsham**	211	**T1 silver birch** - approx 12m tall and 6m wide. Crown reduce by 2m from the top and 1.5m from the sides. **T2 *Robinia*** - approx 4m tall. Reduce height under BT wires to previous cuts by 1m. **T3 apple** - approx 6m tall and 4m wide. Reduce and thin epicormic growth. Reduce height of tree by 1m and side by 1.5m.	21/11/2023
2023/3548	3 Abbots Close, **Aylsham**	211	**Conifer x 4** – fell.	22/11/2023
2023/3549	Thamesdene, Scotch Hill Road, **Taverham**	TPO	**G1 hawthorn** bushes & trees and **T2 Corsican pine** - fell.	22/11/2023
2023/3550	Roundtree Way, **Sprowston**	TPO	**Removal of dead trees** under an exception of the TPO restrictions for dead trees.	Exempt tree works
2023/3585	35 Bishops Close, **Thorpe St Andrew**	211	**T1 whitebeam** - re-pollard to a height from approx 10m to 4m.	27/11/2023
2023/3592	244 Plumstead Road East, **Thorpe St Andrew**	TPO	**T1 oak** - 2-3m overall crown reduction and reduce lowest limb toward house to give clearance of 4m to all suitable growth points. Current dimensions - N - 5m, S - 10m, E - 9m, W - 7m. 20m height.	28/11/2023

Explanatory Notes:

1) App No is the unique Broadland District Council Planning Application number allocated to the application to carry out work and is the number by which progress of the application may be traced. Any comment, objection, support or request for information should quote this number.
2) Address is the address to which the application for work relates. That is the address where the trees for which the application is made are located.
3) Cat (ie Category) denotes the type of application. TPO = works to trees subject to a Tree Preservation Order; or
   211 = Section 211 Notifications for Works to Trees Within Conservation Areas
4) Species / Requested Works is the species of the tree(s) concerned and details of the work proposed. A reference such as T1, T2 or G1 may also appear and that is simply a reference to the tree(s) on the TPO, Conservation Order or simply on the application.
5) Decision is either the actual decision or the date on which the application was validated by Broadland District Council.
6) This list is not intended to be a definitive list of all the relevant details. The reader should always refer to the specific application on the South Norfolk and Broadland District Council Planning website at https://www.southnorfolkandbroadland.gov.uk/planning-applications/find-planning-application to view the application or read the Council's decision.

PLEASE NOTE

I am having difficulty obtaining up to date lists for Tree Preservation Orders and Conservation Area News and have compiled this month's list by manually searching the lists of planning applications on the Broadland District Council website. I am fairly confident in in the accuracy of the list but, to be on the safe side, please be aware of the situation.

I hope to see "normal service" resumed next month.