

Broadsheet



The Magazine for Broadland Tree Wardens

Issue 176 – May 2019

Tree Council PAG Will Succeed

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Inside this issue

Tree Council PAG Will Succeed	1
Restore Natural Forests to meet Global Climate Goals	4
Deforestation and Conversion-free Supply Chains	5
Three New Appointments to Forestry Commission England	6
World's Tallest Known Tropical Tree	7
Stately Homes Plaedge Oaks for Notre Dame Restoration	8
Last Time CO ₂ Levels were this high there were Trees at the South Pole	9
Free app Gives Londoners Info on Capital's Trees	9
Invasive Tree Taking Over Africa	10
Our Next Meeting – 8 May 2019	11
Tree Sleuths use DNA and Machine Vision to Crack Timber Crimes	12
Hedgehog Street	13
National Park Funding Slashed by 40% 14	
UK Scientific First for Ancient Caledonian Pine Forest	14
Developer Removes Woodland Before Applying for Permission to Build	15
Dr Jo's Corner – Marsh Marigold	16
Global Tree Cover Loss Continues but is Down from Peak Highs	17
Dates for your Diaries	18
Current Works to Trees Subject to a Tree Preservation Order and Section 211 Notifications for Works to Trees Within Conservation Areas	19

This Month's Cover Picture

A most impressive ancient pedunculate oak (*Quercus robur*) in 'Kvilleken' Kvilleken, Norra Kville, Kalmar, Sweden. At the time of going to print this is the oak with the largest girth in Europe.

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Tree Council PAG Will Succeed

THE TREE COUNCIL'S Pilot Advisory Group (PAG) is proving to be a great success and I am confident that it will return excellent results, but it won't be easy and it won't be quick. Yes, we will have some positive results by the end of the year but our work won't be complete and I'm sure that there will be many heated debates in the meantime.

The main thing is that we all appear to have the same target. It's just that we all have differing ideas on how we arrive there and that's where the debate may become heated.

I am sure that I know more than other PAG members and therefore I want to do it my way. However, the other PAG members are all equally sure that they know more than the others and they all want to do it their way!

The meeting in London was just a sparring match as got to know each other. I now know those members that I was impressed by and can work with and those who I will no doubt have many arguments with. Not because they are not nice, dedicated people but simply because we have differing ideas.

The one thing we all have in common, however, is a deep held desire and commitment to make Tree Wardening fit for the future challenges we must face ... and we all know that we have never before faced such challenges.

It's the next meeting in Birmingham, on Friday 28 June, when we shall really get down to work and I'm pleased to say that every Regional Representative will be attending.

I cannot stress enough the importance of you all letting me know your views on the successes and failures of the national Tree Warden scheme and how you would like to see it re-structured for the future.

Would you like the Tree Council to set up a Facebook (or other social media) page for all to access? Would you prefer to have a forum where questions and comments can be aired/shared with fellow Tree Wardens?

Would you like us to create/provide on-line training? Can we justify the printing and distribution of Tree Warden Handbooks or should we simply provide them on-line.?

Considering the attendances of Broadland Tree Wardens at Regional Tree Warden Forums over recent years, is it worth holding such events?

Many Networks have merged following the mergers of their local authorities. It has become a common "problem" that we have to consider and here in Broadland, in particular, it is something we shall face fairly soon as the merger of Broadland and South Norfolk District Councils forges ahead.

Using the experience of other Networks, I personally don't believe that we can wait until it happens. We need to decide a policy now.

You will have read my views in my introductory statements to the first PAG meeting in London. Personally, I don't believe that bigger is best. I don't even believe that bigger

can be "as good". I believe, most strongly, that the Broadland and South Norfolk Networks should remain separate.

However, that is my personal view. It is your views that I have to represent. So far, I have yet to receive any views from any of you about how you would like to see our future, both locally and nationally. It really is important that you let me know what you want.

So give me a call or send an e-mail (or if your case Crootie get the quill out and feed up you pigeon!!) and let me know your views.

I recently received an e-mail from one of you saying that it's ok for me "to go swanning about the country attending meetings for the Tree Council" but that I am "supposed to be running Broadland and you're not doing it properly".

Well, I have to admit to being quite disturbed by that as prior to accepting the position of Regional Representative I considered the workload carefully in order that I could ensure that I would not neglect the Broadland Network.

As I replied to the complainant, the Broadland Tree Warden Network is and will remain my first concern but I also believe, and believe passionately, that Broadland, one of the smallest Networks, is privileged to have this place "at the table".

I made it clear at our inaugural meeting that I will do all in my power to help make this the best Network in the country, but I won't be carrying passengers. I will help those who help themselves and contribute to the Network.

Anyway, if you share the e-mailer's view then please let me know and we can discuss it. If necessary I am more than willing to change as it is your Network ... not mine.

Whatever happens, I can guarantee that PAG will succeed ... with or without the views of Broadland Wardens. The question is, will that fit your definition of "succeed"?

IF HS2 wasn't enough, another huge infrastructure project is now threatening our ancient woods. The Oxford-Cambridge development project presents another unacceptable threat to ancient woods and trees.

However, a series of recent wins continues to show that the Woodland Trust's unrelenting efforts to protect ancient woodland are paying off. These successes have buoyed the Trust's morale and it is now hopeful it can save more woods from this latest challenge.

This major project plans to create up to a million new homes, build a new dual carriage-way and railway.

The Western section has already reached the public inquiry stage. The latest consultation

focused on new track lying within the central section of the East West Rail (EWR) scheme. It's likely that all five potential route corridors could significantly impact ancient woods, ancient and veteran trees and five Woodland Trust woods.

The Trust's campaigning on the Oxford to Cambridge development arc has begun and is likely to keep it busy for the foreseeable future.

Usually, the Trust would expect more detailed information on a project of such significance and potential impact, but EWR is choosing not to share. As reported in last month's Broadsheet, they did offer to tell the Trust more if it signed a non-disclosure agreement promising not to share the information with its supporters!

Naturally, the Trust refused. It's unthinkable that it would ever withhold information that could help these irreplaceable habitats.

Instead, it launched a campaign to make sure the public could help. It was a quick-fire affair, with less than a week for supporters to submit responses but over 3,300 people took part to demand that ancient and veteran trees should be protected and that EWR should release the maps to help the Trust do exactly that.

TO FOLLOW-UP on my article on the "Invasive Alien Species Order 2019" in last month's Broadsheet and previous articles I have written in defence of *Sciurus carolinensis*, I read with concern that grey squirrels are being culled in woodland around Dursley, a market town and civil parish in southern Gloucestershire, in an attempt to "protect trees and wildlife".

The Thornbury, Dursley & Yate branch of the Friends of UK and Ireland Squirrels The Grey Area has been carrying out the programme. It is interesting to note that nationally, the Friends of UK and Ireland Squirrels The Grey Area have 351 members but are seeking 20,000, so I wonder how many members the Thornbury, Dursley & Yate branch has.

Around 400 squirrels have been killed in the area which includes Dursley, Thornbury, Yate, Wotton and Berkeley since January. No doubt far more that there are members of the organisation that killed them.

Mike Popham, who represents the group, said that the grey squirrels were causing irreparable damage to woodlands and the wildlife that live there. The squirrels are said to strip back the bark of young trees which can kill the plants.

A spokesman for the Department for Environment, Food and Rural Affairs (DEFRA) confirmed that killing grey squirrels is legal. "Grey squirrels legally can be controlled all year round by a variety of methods including shooting and trapping," he said.

Mr Popham said: "Grey squirrels cause a lot of damage to our flora and fauna. They predate on song birds, they kill fledglings in the nest, and eat them and eat eggs as well and the damage they cause to trees is incredibly extensive."

Sorry Mr Popham but don't humans do that as well? Indeed, aren't humans a bigger threat? Do you want to cull them as well?

Mr Popham said that as well as damaging existing trees, the grey squirrel also has an impact on the woodland of the future. "They eat

certain seeds and certain nuts, which leads to the woodland only regenerating certain species.

"Ash trees remain successful, because it's not one of the grey squirrels favoured food sources and this can result in a monoculture of ash trees. Some people say that isn't a problem, and we could just have ash-land in the UK instead of the mixed broadleaved woodland such as we have in Dursley.

"The down side is that not only is that not so good for the ecology of the woodland, but ash trees are susceptible to a fungal disease called ash die back, which is fatal to the ash. So if only ash replaces mixed woodland and then it becomes diseased we might end up with no woodland at all."

Julie Douglas, an environmental activist from the Dursley area, shares Mr Popham's views on the need to curb the damage caused by grey squirrels, but she believes culling is not the answer.

"We don't need to cull. Let's look instead at how to restore balance in our woodlands. We've ended up in this state through human interference and the eradication of species.

"Grey squirrels aren't responsible for the eradication of red squirrels. Humans are. We hunted them to extinction. Up until the 1970s, you could get a licence to kill red squirrels. They were seen as the problem then. Now it's grey squirrel. If we hadn't removed predators, such as the pine marten, the grey squirrel population wouldn't have become so successful. Instead of culling, let's have predators. Instead of killing squirrels, let's reintroduce pine martens."

Elisa Allen, director of People for the Ethical Treatment of Animals said: "Culling' - or, to call it what it really is, killing - is a hideously cruel and ineffective way to manage animal populations.

"Humans were responsible for bringing grey squirrels from America to the UK in the first place, so the least we can do is find a peaceful, humane solution to a perceived issue that we created, not catch these intelligent, social animals and blast them with a shotgun or drown, asphyxiate, or otherwise kill them.

"We're fast destroying the natural world and all its non-human inhabitants, and we need to curb our own destructive impulses because they, not grey squirrels, are largely to blame for the decimation of woodland and the population decline of other species."

So I'm pleased to say that I'm not the only one defending the grey squirrel. By the way. In there a by-pass around Dursley? I hope so because I never want to visit the place !!!!!!!!!!!!!



PLANS to re-introduce the white-tailed eagle to southern Britain have taken a step forward after a licence for their re-introduction was granted to the Roy Dennis Wildlife Foundation and Forestry England by Natural England.

White-tailed eagles were once widespread across Southern Britain until the eighteenth century when human activity wiped them out.

Roy Dennis, founder of the Roy Dennis Wildlife Foundation, said "This project aims to reverse that situation by restoring the eagles to their ancestral nesting places. We look forward to working with a range of organisations on the Island, and in the Solent area, to help make this exciting project a success."

Public support for the project has been high with 76% of local people surveyed supporting the reintroduction of the birds to the area. Over the next five years young birds, bred in the wild in Scotland, will be reintroduced on Forestry England woodland on the Isle of Wight.

"Our woodlands provide a haven for wildlife and we hope that they will become home to these incredible birds on the Isle of Wight," says Bruce Rothnie of Forestry England. This long term project is a great opportunity to help to restore the white-tailed eagle to the South Coast of England and we are proud to be involved in helping to bring back this rarest of birds to Britain."

The Island offers an ideal habitat for the birds with numerous potential nesting sites and highly suitable foraging areas. Birds are not expected to start breeding there until 2024 but will be closely monitored using satellite tracking devices until then.

The reintroduction is expected to provide a significant boost for the Island's economy, after a similar project on The Isle of Mull boosted the local economy by up to £5 million a year.

Now, you all know my views on the re-wilding lark by now. It's another case of man trying to correct the mistakes he made in the past before he has solved the reasons for those mistakes.

I question the statement that "Public support for the project has been high with 76% of local people surveyed supporting the reintroduction of the birds to the area." Was that 76% of those under the flight range of these magnificent birds or just those in the surrounding area of the proposed nesting site? Did it include the farming industry which worked so hard to wipe out such creatures?

I fear that this will all end in tears!!!!

ADORSET businessman has been hit with a £37,000 bill for chopping branches off a 12.5 m oak tree in his garden.

The tree was the subject of a TPO and the businessman failed to ask the local authority for permission to cut it back. Poole Council's inquiry concluded the oak had been "virtually destroyed" to enable more sun to reach the businessman's house balcony.

He pleaded guilty to causing wilful damage to a protected tree and at Bournemouth Crown Court he was fined £1,200 for the offence and required to pay £15,000 costs, but that wasn't the end of it.

Surveyors decided his action had added substantial value to his house so Poole Council used the Proceeds of Crime Act to ensure he did not benefit from his illegal action and he was further ordered to pay the taxpayer £21,000 – the estimated increased house value. This is the first occasion anyone has been dealt with under the Proceeds of Crime Act for damaging a tree to improve light and should act as a warning. Oaks provide more shelter for insects than any other UK tree but they have enough to contend with apart from branch-chopping businessmen.

I like Poole Council !!!!

ON Saturday 13 April, I represented the Woodland Trust at the Norfolk Festival of Nature, based at the Forum, leading three guided walks around the city centre's Tree Trail.

That was a repeat of what I did at last year's event and, once again, it proved very popular with each of the walks being fully booked (prior booking was requested) for 20 people per walk and we then allowed another five who had not pre-booked to join each walk.

Once again I was delighted to see that the people of Norwich have an interest in and value their urban forest.

There are an estimated 750,000 trees in Norwich but there are no Tree Wardens. From the comments I received it appears that the public feel that they don't have a say in what happens to the trees. Tree Wardens would serve as a link between Jo Public and City Hall.

Once again, many people have never noticed the towering common beech in the grounds of the Assembly Rooms ... or said they've never noticed it. Nobody had noticed that the two plane trees adjacent to the Guildhall on Gaol Hill are, in fact, oriental planes whereas those adorning the market are London planes.

Perhaps most disappointing is that nobody knew that the paper birch trees outside the Forum (opposite the Theatre Royal) form a memorial garden. An extension to the Second Air Division Memorial Library. Without what those young trees represent we wouldn't have been able to enjoy such a walk around the city centre.

I had to cut the walk short I'm afraid. It is supposed to end at the foxglove tree in Chapelfield Gardens but the funfair that was there for the Easter period prevented that. Funfair? No, it was an unfair!!

I was prompted to write to the City Council to express my deep concern and the way the trees in Chapelfield Gardens were being threatened by the funfair. The largest London plane in the gardens (and indeed in Norwich) is a magnificent specimen. A maiden tree, its branches are very wide-spreading and thereby quite fragile.

Someone had parked a trailer under the tree and had lifted one of the branches in order to do so. Then, to prevent the branches from resting directly on the trailer they had placed a brick under it.

Surely the City Council monitors the parking of the vehicles and location of the "attractions"?

Maybe they need to create a Tree Warden Network!!!

I AM DELIGHTED to report that the Ancient Woodland Inventory for England is to get a radical overhaul to enable changes in national planning policy to be properly implemented.

Last year, the National Planning Policy Framework was amended to give ancient woodland and ancient and veteran trees strengthened protection from inappropriate development. The Woodland Trust warned government this change would only be effective if planners and developers knew where ancient woodland was located.

The Ministry for Housing, Communities and Local Government has awarded a grant of £210,000 to the Woodland Trust. This is to kick start a £1.5 million collaboration with Natural England to update the inventory.

The inventory, which is managed by Natural



England, is a map-based record of around 52,000 ancient woodlands. However, there are many more which are missing. The need to update it was brought to Parliament's attention in January when Michael Fabricant MP successfully introduced an unopposed bill seeking an update in England.

The money will help to buy the essential historic data, recently digitised via the National Archives, which underpins the inventory. It will also support upskilling of staff to undertake this vital work. Ultimately the revised inventory will ensure better and speedier planning decisions, by eliminating the inaccuracies that cause confusion.

The National Planning Policy Framework states that development resulting in the loss of ancient woodland, or ancient and veteran trees, should be refused unless it is wholly exceptional, but the current inventory, relied on by planning authorities to identify ancient woodland, is inadequate.

Woodland Trust planning adviser, Victoria Bankes Price said: "The existing inventory has grown to become an essential reference tool for planners and developers, policymakers, land-owners, foresters, conservationists, landscape historians, and many others keen to protect and restore these special wooded habitats.

"However, it was originally developed during the 1980s, when computerised mapping was in its infancy. As such has many omissions and inaccuracies. This has in some cases seen ancient woodlands lost or damaged by development or inappropriate management simply because they are not recognised as ancient as they are not recorded on the inventory.

"Some 544 ancient woods are currently under threat from development in England that we know of. The inventory desperately needs updating, not only with sites over 2ha, which was all that was originally included, but also smaller pockets of this precious, irreplaceable habitat. To prevent them slipping through the net and being destroyed by inappropriate development."

Minister of State for Housing, Kit Malthouse MP said: "Groups like the Woodland Trust are playing a crucial role in protecting our green spaces. Including our irreplaceable ancient forests, for future generations to enjoy long after we are gone. "This will form the first modern stock take of all woodland in England. Acting as a powerful tool for councils as they plan the development of their communities and build the homes we need."

The update will also provide baseline data to focus improved management and restoration of ancient woodland. Ultimately increasing their long-term resilience and value to society and

helping target woodland creation and tree planting that buffers and connects ancient woodland fragments to create more robust habitat networks.

It is hoped more funding will be secured from other sources to continue updating the inventory.

I WAS recently asked by one of you if I thought the Broadland Tree Warden Network would be interested in a Network project.

I can't go into details at present as the bodies concerned have yet to make a final decision, but I want to outline what we have in mind in order to see if any of you would like to support it.

A Broadland parish council has a piece of woodland which it has recently cleared out, removing rhododendron, laurel and quite a lot of trees. The Tree Warden wondered if the regeneration of the wood might be something the Network would be interested in looking at as the Tree Warden feels sure our advice and opinions would be very helpful. Needless to say, I agreed that it would be an ideal project for us.

Therefore, the Tree Warden informed the Clerk to the Council who was most enthusiastic and will put the idea before the council.

It may that the council plans to go about replanting in its own way, of course, but our involvement will be of great benefit to them. At the very least we can provide planting materials from our tree planting budget.

It could also become a community project where we could perhaps train willing volunteers to plant and care for trees, etc.

So we should know fairly soon and, given a positive response, I shall arrange a summer evening site meeting when we can draw up a project plan that can be agreed by the council.

This is the kind of thing that many other Networks undertake and, as I have said before, it is something I would love us to become involved with. So, if you share my views and would, in principle, like to become involved, then please let me know as soon as possible.

I hope to reveal the Tree Warden, council and site in next month's Broadsheet.

This could be another way in which the Broadland Tree Warden Network can show communities just what we have to offer and also, in these times of local authority cuts and mergers, just how valuable we can be to Broadland District Council.

Have a great May.

John Fleetwood

Restore Natural Forests to Meet Global Climate Goals

An article published on www.theecologist.org and based on a press release from University College London

INTERNATIONAL plans to restore forests to combat global warming are flawed and will fall far short of meeting 1.5°C climate targets, according to new research by UCL and University of Edinburgh scientists. The study, published in *Nature*, reveals that almost half (45%) of the vast areas that countries have pledged are set to become plantations of commercial trees, a move which will seriously reduce expected carbon uptake and prevent agreements to curb climate change being met.

Simon Lewis, professor of Global Change Science at UCL Geography and lead author, said: “There is a scandal here. To most people forest restoration means bringing back natural forests, but policy makers are calling vast monocultures ‘forest restoration’ and worse, the advertised climate benefits are absent.

“Plantations are much poorer at storing carbon than natural forests. To combat climate change, natural forest restoration is clearly the most effective approach. Well-managed forests can also help to alleviate poverty in low-income regions, as well as conserve biodiversity and support the UN’s Sustainable Development Goals.”

To meet 1.5°C requires rapid emissions cuts and removing carbon from the atmosphere. The international community is striving to restore 350 million hectares of forest, an area slightly larger than the size of India, by 2030, to do just this.

New calculations based on 43 countries’ restoration pledges show that only by allowing natural forests to return would sufficient carbon be captured for new forests to play their part in meeting global climate goals.

The 43 tropical and sub-tropical countries - where trees grow fast - have signed up to restoration commitments, many as part of the Bonn Challenge that aims to restore 350 million hectares of forest. Together, those countries, which include Brazil, India and China, have already committed to restore 292 million hectares of forest.

The study, which is the first in the world to compile and analyse country-level commitments for forest restoration, shows that land put aside for natural forests holds 40 times more carbon than plantations and six times more than agriculture that mixes trees and crops, known as agroforestry.

Using long-term carbon sequestration rates for natural forest, plantations and agroforestry, the researchers show that restoring natural



forests over 350 million hectares of land removes 42 billion tonnes of carbon by 2100, whereas using current pledges for plantations (45%), natural forests (34%) and agroforestry (21%) applied to the whole area reduce this to 16 billion tonnes of carbon by 2100, assuming that all new natural forests are protected.

Furthermore, if commercial monocultures were planted across 100% of the area just 1 billion tonnes of carbon is sequestered.

Countries differ vastly in their commitments. Vietnam represents the world’s largest commitment of new natural forests, at 14.6 million hectares; Brazil has pledged 19 million hectares of new plantations; Nigeria has the most agroforestry, 15.7 million hectares.

Dr Charlotte Wheeler, from the University of Edinburgh, and a co-author, said: “The reason plantations are so poor at storing carbon is that they are harvested every decade or so, meaning all the carbon stored in the trees goes back into the atmosphere, as the plantation waste and the wood products – mostly paper and chipboards – decompose.

“Instead, restoring all 350 million hectares

back to natural forests can meet the role forests need to play under Inter-governmental Panel on Climate Change emissions pathways that keep global warming to 1.5°C.

“Of course, new natural forests alone are not sufficient to meet our climate goals. Emissions from fossil fuels and deforestation must also stop. Other ways to remove carbon from the atmosphere are also needed but no scenario has been produced that keeps climate change below dangerous levels without the large-scale restoration of natural forests.”

The scientists recommend that the definition of ‘forest restoration’ excludes monoculture plantations, and propose four ways to increase carbon capture from today’s forest restoration schemes.

Firstly, increase the proportion of land being regenerated to natural forest; second, prioritise restoration in Amazonia, Borneo and the Congo Basin, which support very high biomass forest compared to drier regions; third, build on existing carbon stocks by targeting degraded forests for natural regeneration; and fourth, once natural forest is restored, protect it.

Deforestation and Conversion-free Supply Chains: What is Needed Now

An article by Hermine Kleymann, Policy Manager, WWF Global Forest Practice, published on www.sdg.iisd.org/commentary

OUR daily lives pose serious threats to tropical forests and eco-systems. When we eat meat or chocolate or when we use toothpaste or apply make-up, we are using products such as soy and palm oil. These commodities require large areas of land. Areas for which tropical forest is often cut or valuable grassland is cleared.

This is why we need to get serious about the consumption, production, trade and financing of products that pose a risk to tropical forests. At the fourth session of the UN Environment Assembly (UNEA-4), deforestation and agricultural commodity supply chains were high on the agenda, thanks to a draft resolution proposed by the EU.

Member States could not come to an agreement on the resolution, but UNEA-4 marked a critical point because it was the first time the topic of deforestation and conversion-free supply chains reached the UN policy level, including specific pathways for governments to engage on the issue.

In a side event organized by the World Wide Fund for Nature (WWF) titled, 'Free Your Supply Chain from Deforestation and Conversion: What is Needed Now,' French Ambassador for the Environment Yann Wehring called for an international resolution on deforestation-free supply chains and a new coalition against deforestation. The French Government recently launched an ambitious action plan that aims to ban imports of products linked to deforestation.

The private and financial sectors also have an important role to play. Nestlé recently announced a new action plan to help end deforestation and restore forests in its cocoa supply chains in Côte d'Ivoire and Ghana. A level playing field, higher accountability, strong governance and more engagement of young people is critically needed, said John Bee, Nestlé's Regional Head of Regulatory and Scientific Affairs, Sub-Saharan Africa.

Ivo Mulder, Head, Land Use Finance Unit, UN Environment Programme (UNEP), called on companies to invest in deforestation-free solutions and increase climate finance and on governments to shift from fossil fuels to renewable energy. BNP Paribas, for example, has policies in place to prevent it from financing and investing in activities linked to deforestation while leveraging sustainable finance at landscape level, such as in Indonesia through the Tropical Forest Finance Facility, a joint project with BNP Paribas, UNEP and other partners.

"A better integration of forest and agriculture in an emerging reforestation and agroforestry market is needed, as well as regulation to have an operating framework," said Pierre C.

Rousseau, Strategic Advisor, Sustainable Business, BNP Paribas.

One of the most important stakeholders, however, are the indigenous peoples and communities who live in forests and bear the brunt of deforestation.

"Bringing affected communities to the table is critical," said Wanjiru Kamau-Rutenberg, Director, African Women in Agricultural Research and Development (AWARD). "It is essential to create space for the voices of women, indigenous peoples and minority groups to contribute as experts on this topic. We need to acknowledge that the 60 million people who live in and depend on forests are already paying the highest costs for conservation of forests, and their investments, in terms of lost livelihoods, need to be recognized."

Five years ago, a critical mass of State and non-State actors agreed to take concrete actions to halt natural forest loss by 2020 by signing up to the New York Declaration on Forests. The signatories pledged to eliminate deforestation from agricultural commodity supply chains "by no later than 2020." This was a critical step as expansion of agricultural land is responsible for an estimated 80% of forest loss in tropical and subtropical regions.

Less than a year away from 2020, forests and other natural ecosystems remain under severe threat. The year 2017 was second-worst for tropical tree cover loss, and habitat loss – including deforestation and forest degradation – is one of the leading causes of nature loss.

"The bottom line is that we are losing an unacceptable amount of nature," said Marco Lambertini, WWF Director General. "We are failing to really recognize the issue of deforestation at a policy level that is required. It is possible to meet the demands of a growing population while also tackling deforestation."

Doing this is not just an environmental issue, it is a social issue. Sustainably managing forests and halting and reversing land degradation is a key component of SDG 15 (life on land). The services provided by nature are estimated to be worth USD 125 trillion a year – double the world's gross domestic product (GDP). Yet more than 75% of Earth's land areas, including many forest landscapes, are substantially degraded, undermining the well-being of 3.2 billion people.

UNEA-4 was a pivotal moment to create momentum around deforestation-free supply chains, and the EU's effort to put this issue on the forefront is commendable. But we need to make sure that momentum continues. We need more companies to step up and not just make

pledges but turn them into real action on the ground.

We also need policymakers to complement private sector actions both on the supply and demand side. Policies can create level playing field for businesses and restore fair competition. Policymakers need to ensure transparent and responsible trade, markets, investments and finance for sustainable commodities. These must include technical and financial support to smallholder producers and the protection of human rights and the interests and rights of indigenous peoples and local communities.

An international agreement, a New Deal for People and Nature, is needed to ensure that there is real action and our lifestyle choices are not destroying precious ecosystems.

Editor's comment.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) recently announced that some 30 experts from 12 CITES Parties met in Dar es Salaam from 7 to 15 March 2019 at the CITES Tree Species Programme Regional Meeting for Africa hosted by the CITES Management Authority of the United Republic of Tanzania. The CITES Secretariat, with support of the International Tropical Timber Organisation (ITTO), organised the meeting through the CITES Tree Species Programme.

The CITES Tree Species Programme (CTSP), funded by the European Union, with additional funding from the USA, aims to ensure the sustainable management of rare tree species and their products and to contribute to legal, traceable and fair trade in products from CITES-listed tree species. The Programme is also working to help strengthen forest governance, forest management policy, enforcement capacity and ensure long-term benefits for sustainable economic growth at country level through a healthy private sector and long-term poverty alleviation.

During the meeting, participants learnt about the CITES Tree Species Programme and the work done in Africa with a focus on the trade routes and patterns in the region. Benin, Burundi, Cameroon, Côte d'Ivoire, Gabon, Kenya, Madagascar, Nigeria, the Democratic Republic of the Congo, Togo, Uganda and the United Republic of Tanzania explained how they will be implementing their respective projects funded under the CTSP.

On 12 and 13 March, participants split into two working groups dedicated to specific

discussions on *Prunus africana* (African cherry) and *Osyris lanceolata* (African sandalwood).

Range States of the African cherry shared their perspectives and considered recommendations on methodologies for inventories, sustainable harvesting techniques, monitoring and traceability, plantations and agroforestry with the aim of improving the future management of the species. Participants also learned about livelihoods and the sustainable management of the African cherry through an overview of available experiences in this area.

The working group on *Osyris lanceolata* focused on the knowledge gaps with respect to the management of the species. While the distribution of species is mostly understood, the population level is little known, and much work is required to sustainably manage the species. There remains an urgent need to develop data on populations, regeneration and host species

because of its semi-parasitic ecology and the volumes of wood in illegal trade. Participants agreed that DNA level technology was needed to distinguish from look-alike species and for within species variation; that distribution maps should be updated; and that additional research was needed to improve the ecological understanding of the species, including its role in ecosystems.

On the last two days, participants agreed that future work should focus on non-detriment findings; marking and traceability; tree species product identification; and capacity-building and governance.

"The CITES Tree Species Programme Regional Meeting for Africa has proved to be a unique and invaluable opportunity to strengthen regional co-operation among CITES authorities across African States that do not often have the opportunity to combine efforts towards

implementing CITES for tree species. This meeting also provided an opportunity for CITES Parties in Africa to coordinate work in preparation for the 18th meeting of the CITES Conference of the Parties. We are most grateful for the support of ITTO as well as funding from the EU and USA that have made this possible", said CITES Secretary-General, Ivonne Higuero.

This meeting was the third of its kind, after similar regional meetings organized to support the work by the Parties in Asia and Central and South America and the Caribbean. African colleagues agreed that it would be valuable to replicate this experience in the future and encouraged the CTSP team to seek options to organise another regional meeting before the end of the implementation of the projects with the aim to evaluate progress and implement corrective actions as needed.

Three New Appointments to Forestry Commission England

Commissioners will be key to ensuring the organisation is all set for the future of forestry

Defra Ministers have appointed three new Non-Executive Commissioners to Forestry Commission England. Jennie Price CBE, Peter Latham OBE and Liz Philip have been appointed for three years commencing on 1 April 2019. The Commissioners will play a pivotal role in establishing a strong, sustainable future for the organisation, enabling it to set out with confidence on the road to the next 100 years of forestry in England.

The Forestry Commission is a non-Ministerial Government department established nearly a century ago as a body serving Great Britain.

In 2013, Natural Resources Wales took over most of Forestry Commission's functions in Wales, and the Scottish Government will take over Forestry Commission's functions in Scotland this year, which means that from this point on the Forestry Commission's work will be primarily in England.

Forest Research will continue to operate across Great Britain, and the whole Forestry Commission will remain an outward looking, connected organisation, engaging with the forest industry and other national and international partners and stakeholders, and delivering research and other services to Scotland and Wales by agreement with the devolved governments.

All appointments to Forestry Commission England are made on merit and political activity plays no part in the selection process. The appointments comply with the Ministerial Code

of Governance on Public Appointments. There is a requirement for appointees' political activity (if significant) to be declared. All three appointees have declared that they have not taken part in any political activity in the past five years.

Details about the Forestry Commission management structure can be seen at: www.gov.uk/government/organisations/forestry-commission

Until recently, **Jennie Price** was the CEO of Sport England. Jennie is a qualified lawyer and has previously been the CEO of WRAP, a Defra-supported environmental organisation specialising in recycling and resources management. She retains an active interest in sport and is Chair of the recently formed international supervisory board on integrity in tennis. She is also Chair of Youth United Foundation and a trustee of the Canal and River Trust. Jennie brings considerable expertise in engaging wide sectors of the community in outdoor activities and has an excellent understanding of the links to health and well-being.

Peter Latham is currently the Chair of the Programme for the Endorsement of Forest Certification International, a Director of Association Technique Internationale des Bois Tropicaux and a trustee of the Commonwealth Forestry Association. He was previously CEO and Chairman of the timber distributor James Latham Plc. Peter brings extensive knowledge of the timber industry and experience of successful stakeholder engagement on an international level.

Liz Philip is a recently retired Principal of two agricultural colleges, including Newton Rigg in Cumbria which was established as the National School of Forestry in 1969. Liz was a founding member of the National Land-Based College and was a Chair and Board Member at Higher York, which unites the city's education and public bodies. She is currently a governor at Selby College. Liz brings a good understanding of the complexities of farming and forestry and their contribution to the rural economy.

The World's Tallest Known Tropical Tree has been Found—and Climbed

An article by Mary Gagen published on www.nationalgeographic.com

IN the last few years exceptionally tall yellow meranti trees (*Shorea faguettiana*) have been discovered growing in Sabah, a Malaysian state on the island of Borneo, again and again. The record height of an individual jumped from 88 m to 94.1 m in 2016, when an entire grove of 90 m plus yellow meranti were found. That record was been further eclipsed last month as a team led by the Universities of Nottingham and Oxford, working with the South East Asia Rainforest Research Partnership, announced the discovery of a 100.8 m giant growing in Sabah's forests.

This discovery is the first 100 m tropical tree (and the world's tallest known flowering plant) recorded anywhere in the world. If it were laid along the ground the tree would be longer than a soccer field.

The team named the tree "Menara," Malaysian for tower, and estimated it weighs 81,500 kg, or more than the maximum take-off weight of a Boeing 737-800, excluding roots.

It's possible an even taller tree is still waiting to be found in the region, the team notes.

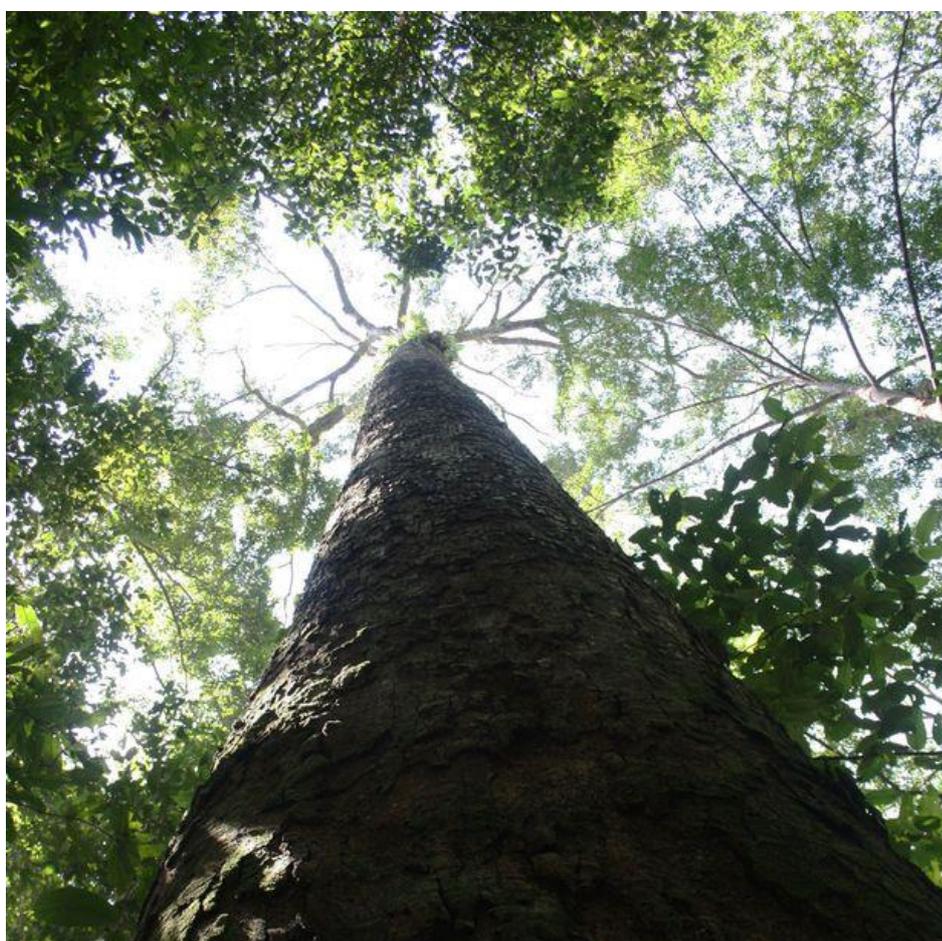
These rainforest giants have been found growing in the Danum Valley Conservation Area, at the centre of one of the best protected, and least disturbed, tracts of lowland rainforest left in South East Asia. Danum protects Borneo's iconic and endangered orangutan, clouded leopard, and forest elephants. Danum is also, it turns out, providing refuge for the tallest known tropical trees in the world.

The record-breaking trees are all, so far, of the same species, yellow meranti. It is highly endangered, and IUCN red listed, having been harvested relentlessly for decades. While Sabah's primary rainforest is under protection, yellow meranti felling still goes on elsewhere in Borneo, often to make cheap plywood and shuttering for pouring concrete. These incredible trees, each its own mini biodiversity hotspot hosting up to 1,000 insect, fungi and other plant species, can be reduced to planks in a sawmill in a few minutes.

These exceptionally tall trees were spotted by laser scanning the forest from an airplane in 2018. Three dimensional images are built up of the forest canopy, and slowly the giants pop out of the image. However, when laser scanning reveals an exceptionally tall tree, proof of its actual height is gathered in a remarkably low-tech way; someone climbs up the tree with a tape measure.

The job of climbing the tropics' tallest trees with a tape measure falls to Unding Jami, an arborist and research assistant with the South East Asia Rainforest Research Partnership. Tree climbing is risky and difficult and it requires a calm mind and a high level of fitness. The Danum Valley team hone such skills by working in primary rainforest every day and playing ferociously competitive games of badminton and soccer in their downtime in steamy temperatures and high humidity.

On 6 January 2019, Unding Jami climbed



what would eventually be announced as the tallest tree in the tropics and probably one of the tallest trees left standing in the world. The tallest known tree is Hyperion, a California redwood (*Sequoia sempervirens*), which has been measured at 115.85 m (refer to the article published in the April edition of Broadsheet).

Unding was interviewed twice. First as he and his team had received news of the new contender and were planning their expedition to measure its height and again after the successful climb in January.

"When we first found out about the new tree I was nervous of climbing it. The site is very steep, it's called Rhino Ridge. There's a valley nearby and a waterfall. In a straight line it's not

that far from the field centre but we had to put new trails in and it's difficult to find. A steep walk to a steep site. The plane measured the new tree at 99 m and I got 115 m from the base with a laser sight when I went in on foot. So before I climbed it I [thought it was] somewhere between those two measurements.

"The new tree is all by itself, high above the tallest canopy trees, in a small, steep hollow. The science team thinks its record height is due to the hollow providing damp soils and a ridge nearby that offers wind protection. Current theories on the amount of wind stress that trees can withstand, and how far they can pump water and sugars up to their crowns, leads the team to believe that Menara is close to the maximum

possible height for an Angiosperm anywhere on Earth currently.

"I knew it would feel very exposed [to climb], like you are just hanging in the air. There were really strong winds and a Colugo (flying lemur) nest! It was flying all around as we were trying to shoot the line up into the tree.

"It took me 15 attempts to shoot that line 86m up to the lowermost branches. Honestly, I almost gave up. We were so lucky to be able to finally shoot the rope over the lower branch.

"Once we had the rope up I took nearly an hour to climb up to 86 m and then another two hours from there to get to the top to take the final measurement. That last two hours the wind was very strong and it rained, which slowed me down.

"I was scared but honestly the view from the top was incredible. I don't know what to say other than it was very, very, very amazing! After we measured it I couldn't sleep for the whole night

"We use a system called rope walking. A rope is catapulted over a lower branch and tied off to a nearby anchor tree. Then we use a harness and one directional ascenders to walk up the rope, step by step, like you're climbing the stairs. You hook the tape measure onto your harness and climb and check the measurement when you get to the top and try not to drop the tape! It's not easy. At 80 m up you're by yourself in the canopy. You can't hear [anyone] on the ground anymore. So, we text each other instead.

"It's not easy work to do. I climb up slowly, checking the trunk every meter for centipedes, snakes, and things. If there are birds', bees', or wasps' nests that can be a problem. If I see one from the ground, we will climb at night when they're less active and shouldn't attack. It's almost less scary to climb at night, as you can't see everything!

"If you fall unconscious whilst climbing a tree the chest harness prevents you from slumping into a safe position, head lower than heart. An unconscious climber in that position has only three minutes or so to survive and that means the ground team must quickly get them down

using an emergency extra rope."

(Laughing) "Yes, you could say that. I was climbing a flowering Dipterocarp and those attract everything, bees and wasps and all sorts of insects. About half way up I saw a colony of bees flying past.

"I knew immediately that I needed to get down. Rainforest bees can be aggressive and become dangerous, if just one stings you the entire colony senses that and then they can swarm and attack.

"The problem was that I had to first change over from my ascending gear, on my harness, to descending gear so I could quickly rappel back down the tree. I was trying to do that and then I saw three bees flying really close to my face. Two flew past me and I thought, ok that's alright, but then the third bee flew into my helmet and so, of course, it stung me because it was trapped.

"That started the swarm. I remember thinking I should cover my face, so I pulled my t-shirt up over my head, closed my eyes and started changing over to my descender by feel, but they were just stinging me all over. My guys on the ground could see what was going on because I had a red t-shirt on and it had turned completely to black because it was covered in bees. I was really starting to worry because I needed to descend fast to get away from them, but I couldn't see to visually check my gear. So I just kept my eyes closed, felt and thought, that's right. I just let go and went.

"Then I stopped suddenly after a few metres drop. I forgot I had a safety lanyard clipped on, that would stop me falling if something went wrong. That was really bad because, with the safety lanyard on, if I fell unconscious from the stings my ground crew would not be able to lower me to the ground and by this point I had so many stings.

"Some climbers are suspicious of carrying a knife, but my instructor always made me carry one. I remembered I had it at that point and I just cut the lanyard and rappelled, as fast as possible, back to the forest floor.

"I was stung 200 times by the time I got to the bottom. I remember thinking I needed to stay

conscious long enough for me and my guys to get away from the colony, because of course all the bees had come down with me. I was conscious on the ground for a few minutes but then the stings started to act. I was out for about 40 minutes apparently. I woke up and remember my guys were so upset, they didn't know if I was alive. They'd put me on my side, and then they'd had to run and try and chase the bees away.

"I come from a very poor family here. I was born in a logging camp in Sabah and my late father worked as a logger. I grew up seeing many people hunting in the rainforest, cutting the trees and I thought maybe one day I can work to stop [people] from damaging the forest.

"My parents couldn't afford to send me and my three siblings all to school so I was only in school for two years; I left when I was 9 years old. When I was 13 I got a job with one of the rainforest replanting programmes, planting seedling to regrow the logged forest. I've worked in rainforest conservation since then, with Sabah Biodiversity Experiment and then SEARRP, as a rainforest research assistant. Slowly, as I worked with these groups, I started to understand why the forest is so important, to the whole world really, and why we need to protect it.

"The animals in the forest inspire me, the amazing gibbons inspired me to learn how to climb trees. They are just such brilliantly perfect climbers, swinging from tree to tree, jumping everywhere. I wish I could climb like them, just using my hands.

"This kind of expedition is good for our community and for rainforest conservation and it's about friendship too. A successful climb like this is not about one person. You need a great, skilled team.

"It is important to know that conserving the primary rainforest is working—some of these unique, giant trees are still out there, they haven't all been lost. I'm hoping my three young daughters and all the future generations still can see these trees standing when they grow up."

This interview has been condensed and edited for clarity.

Stately Homes Pledge Oaks for Notre Dame Restoration

AROUND 150 stately homes across the UK have pledged to provide oak trees which can be used to restore the Gothic Paris cathedral after it was ravaged by fire. One of those homes is Pitchford Hall, near Shrewsbury, which has been restored over recent years by James Nason and his wife Rowena Colthurst, with their three children, Georgiana, Serena, and Edward.

Their offer of timber for the reconstruction came from more than 100 members of Historic Houses, the association for independently owned historic houses and gardens, who have pledged to help towards the reconstruction effort.

It is not the first time Britain's great houses have rallied round to help with a major heritage restoration project. After the devastating York Minster fire in 1984, more than 40 Historic Houses members pledged 80 oak trees for the

reconstruction efforts, joining donations from the Queen and the Prince of Wales.

The construction of Notre Dame's 12th century timber roof is estimated to have required 1,300 mature oaks.

Mr Nason said they had been horrified to see the devastation caused by the fire in the French capital and would be delighted to play a part in helping the restoration effort.

He said: "My wife suddenly said - I think she was looking on Twitter or Instagram - and she said 'James, Notre Dame is on fire'.

"At first it is one of those moments where you think that can't be true, Notre Dame cannot be on fire. And then seeing it develop and

seeing the spire topple and your instant reaction is to think, is there anything I can do? I think it is a global reaction to those kind of events and the impact they have."

He added: "I just think it is a brilliant initiative from Historic Houses. To pledge UK trees from across the country to rebuild Notre Dame just seems to chime with what a lot of us felt when we saw the tragedy on TV."

Mr Nason said the house has two oak plantations and that he would be able to provide a tree to help toward the recreation of one of the world's most famous buildings.

Last Time CO₂ Levels were this high, there were Trees at the South Pole

An article by Damian Carrington published on www.theguardian.com

TREES growing near the South Pole, sea levels 20 m higher than now and global temperatures between 3 and 4°C warmer. That is the world scientists are uncovering as they look back in time to when the planet last had as much carbon dioxide in the atmosphere as it does today. Using sedimentary records and plant fossils, researchers have found that temperatures near the South Pole were about 20°C higher than now in the Pliocene epoch, from 5.3m to 2.6m years ago.

Many scientists use sophisticated computer models to predict the impacts of human-caused climate change, but looking back in time for real-world examples can give new insights.

The Pliocene was a “proper analogy” and offered important lessons about the road ahead, said Martin Siegert, a geophysicist and climate-change scientist at Imperial College London. “The headline news is the temperatures are 3-4°C higher and sea levels are 15-20 m higher than they are today. The indication is that there is no Greenland ice sheet any more, no West Antarctic ice sheet and big chunks of East Antarctic [ice sheet] taken,” he said.

Fossil fuel burning was pumping CO₂ into the atmosphere extremely rapidly, he said, though it took time for the atmosphere and oceans to respond fully. “If you put your oven on at home and set it to 200°C the temperature does not get to that immediately. It takes a bit of time and it is the same with climate,” Siegert said, at a Royal Meteorological Society meeting on the climate of the Pliocene.

He added that global temperature had already risen by 1°C since the industrial revolution, when CO₂ levels were 280 parts per million (ppm). CO₂ was now at 412ppm and rising, suggesting the planet would be locked into rises of 3°C-4°C in the next few centuries. Ice melting, he said, took even longer and the huge sea level rises indicated by the Pliocene evidence would probably take a few millennia to come about.

In the Pliocene a variety of beech and possibly conifer trees grew at Oliver Bluffs, 300 miles from the South Pole. The tree remains had been unearthed as fossils, along with cushion plants and mosses.

Jane Francis, director of the British Antarctic Survey, said: “This is an amazing discovery. They found fossil leaves of southern beech. I



call them the last forests of Antarctica. They were growing at 400ppm CO₂, so this may be where we are going back to, with ice sheets melting at times, which may allow plants to colonise again.”

The evidence showed summertime temperatures in the Pliocene were a tundra-like 5°C near the Pole, compared with -15°C to -20°C today. The presence of plants showed the Antarctic ice cap was much smaller in the Pliocene and the sea level much higher. “Twenty metres of sea level rise would have a major impact on our all our coastal cities and all our coastal areas where people live,” Francis said. Polar regions were especially important in understanding global climate, she said: “We know that is where the change happens first and where it is most dramatic.”

About 100m years ago an even more extreme climate occurred. In the Cretaceous

period CO₂ levels were 1,000ppm. Antarctica still sat over the South Pole, but the region was warm and covered in great forests, the stumps and soil of which have been preserved as fossils in places like Alexander Island. “If we keep carbon emissions going at the current rate, by the end of the century we will have 1,000ppm,” said Siegert. The low 280ppm level of CO₂ in the run-up to the industrial revolution was rooted in carbon being removed from the air by plants and animals and then buried. “It formed coal seams, gas and oil fields. And what we have been doing for the last 150 years is digging it all up and putting it back into the atmosphere, it’s crazy.”

One climate peril these emissions ruled out, said Siegert, was a return to an ice age, which had happened several times in the last million years; CO₂ was now at too high a level for there to be any chance of a big freeze, said Siegert. “We’ve killed it.”

Free App Gives Londoners Info on the Capital's Trees

Londoners can discover more about their surroundings with a free app that provides information on trees in the capital. GoJauntly, an app offering guided walks around green city spaces, has launched a new map feature, which pinpoints the location of more than 700,000 trees lining streets and parks around London. Users can click on the map to find out more about the species and its history in the capital.

The app uses the London Tree Map, which was launched by the Greater London Authority in 2015 to “raise the public profile of the important contribution of trees to our urban environment”. It also hoped to identify where more trees were needed. App Co-Founder Hana Sutch said: “Street trees play a really important role in cities and the benefits of them are considerable. Studies have shown that children are adept at identifying cartoon characters and those from video games, but are unable to identify common British species. Our mission is to do everything we can to encourage walking, exploration of our local surroundings and help people of all ages connect with nature.”

An Invasive, Thorny Tree is Taking over Africa - Can it be Stopped?

An article by Peter Schwartzstein published on www.nationalgeographic.com

MOHAMMED Al-Murawih remembers thinking what a joy it would be if the desert was always green. He wouldn't have to lead his camels on many mile-long migrations in pursuit of pasture, and he wouldn't run the risk of losing livestock in lean years. Never again would his family go hungry.

So when, about a decade ago, a host of brilliantly lush shrubs began to protrude from the sand and rocks around his home village in North Kordofan, to the south-west of Khartoum, the Sudanese capital, Murawih was jubilant.

At last some proper vegetation, he thought, and at last some major sustenance for his livestock, who'd been looking increasingly emaciated after frequent droughts. His fellow herders were similarly enamoured of this new arrival. In late 2012, the village mosque even offered a prayer of thanks for their good fortune.

It didn't take long, though, before the community began to have second thoughts. This shrub—a species of mesquite called *Prosopis juliflora*—was too prolific, too greedy. Its spiky undergrowth wasn't as useful as they'd hoped. As the problems mounted and the plants multiplied, Murawih soon wished he'd never clamped eyes on this botanical menace.

"When we first heard about this tree, this tree that can grow anywhere, we thought: good, this will bring shade, this will bring food," he said. "but really it's not like that. It's a devil tree."

P. juliflora was once offered as a solution to some of East Africa's most pressing problems when it was introduced by development agencies through much of the 20th century, starting in the 1920s. By producing foliage and animal fodder in areas with little of either, it was meant to fortify the region's crumbling drylands and by holding the sands at bay with its deep, cloying roots, it was envisaged as a much-needed weapon against desertification.

Initially, at least, it proved its worth. Some farmers credit their fields' continued existence to its sand-stopping properties; others value the mesquite as a ready source of charcoal at a time when states are taking tougher stances on tree cutting. However, in an almost textbook illustration of the perils of invasive species, the mesquite eventually displayed a crueler side. Slowly at first and then more rapidly of late, it has sprawled across much of Africa and as it has colonised tracts of land, the tree has complicated millions of people's lives.

It's out-competed weaker, more nutritious species, and poisoned livestock who consume its pods. In doing so, it's harmed herders, the very people it was supposed to help. Its tentacle-like roots have sponged up water in already thirsty districts. Such is the mesquite's capacity for wreaking havoc that it's seemingly even contributed to the spread of malaria.



"If you could potentially manage it better, it might be ok, but you can't. It's just a pretty nasty plant," said Arne Witt, co-ordinator for invasive species at the Center for Bioscience Agriculture International (CABI), who's spent decades tracking the plant's spread. "It's destroying habitats. It's creating monocultures. It's not going to stay where you've planted it." The International Union for the Conservation of Nature (IUCN) lists the *Prosopis juliflora*, which has also settled swathes of Asia and Australia, as one of the worst invasive species.

The mesquite was originally brought to West Africa from its native South America in the mid-19th century, before bit by bit establishing footholds throughout the continent. The tree's roots, which can burrow up to 50 m, enable it to search out water in drylands and its ability to withstand extreme temperatures has allowed it to prosper where other plants wither. With no natural predators outside of its native habitats, the mesquite has expanded across several million hectares in the last few years alone, according to the IUCN. The spread has been particularly dramatic in East Africa since the fierce El Niño rains of 1997-1998, which distributed the plant's seeds even farther afield.

At 9 am on a weekday morning in July, the

fields around Dulga in Sudan's Gezira state should be teeming with life. Instead, with planting season fast approaching, a solitary man roams back and forth with an axe. Hacking away at a particularly stubborn mesquite, he strikes root after root. Only when he's cleared a full tree, a deeply embedded, six foot-tall sapling, does Mohammed Zain Al-Baseer pause for a restorative cigarette.

"This needs so much work that for most people it's not worth it," he said, gesturing at the empty expanses around him. "We will spend more to prepare the land than we'll earn from the crops. It is a shame what a tree can do."

Farmers in East Africa thought they knew adversity, but in some badly afflicted areas mesquite has made agriculture all but impossible. It's forced them to spend time and money they don't have clearing their fields, while guzzling water that their crops desperately need. A South African study suggests that country loses up to 185 billion gallons of groundwater to this plant every year, an amount comparable to half of New York City's annual usage. The situation is particularly trying in countries like Sudan, where a recent fuel crisis has deprived many of the use of mechanised diggers, and Kenya, where most farmers lack

access to these tools in the first place.

Those land management troubles are, if anything, even more challenging for herders, who are already reeling from desertification and droughts. In swathes of northern Kenya, mesquite is growing so thick, so fast, and so abundantly that it's blocking animal migration trails. In Garissa, not far from the Somali border, thick mesquite growth along the river banks has prevented livestock from approaching major watering holes.

Officials in some of Africa's most arid nations say these plants are robbing them of what meagre pasture they have left. "It occupies all the space, so the grazing land disappears," said Dini Abdullah Omar, director-general of Djibouti's Ministry of Environment. "We have almost none to start with, so this is a tragedy."

Then there are the implications for livestock health. Mesquite was supposed to be a source of nourishment for animals in drylands and eat it they have, but not with the intended consequences. The pods are extremely sweet and stick to animals' teeth. Cattle are suffering from severe tooth decay; camels are contracting diabetes. The tree itself is so formidable that it's beaten off most other species. Livestock now have little but the dreaded pods to feed off.

"Ideally this shouldn't be more than 20 to 25 percent of their diet, but somewhere like Baringo, there's nothing else," said George Muthike, a senior research scientist at the Kenya Forestry Research Institute,

referring to a particularly hard-hit county in northern Kenya. "It occupies whatever land is in front of it."

However, the worst might be yet to come. By colonising vital grasslands in Kenya and Ethiopia, extinguishing much of its other vegetation in the process, the mesquite has helped push the endangered Grevy's zebra to the brink. In a bitter twist, the zebra has been one of the inadvertent architects of its own downfall as its droppings act as fertilizer and its grazing helps the seeds spread.

Furthermore, by providing mosquitos with bountiful nectar, the mesquite might be helping malaria advance into new areas. With flowers that bloom for most of the year, the plant looks to be fostering the disease's transmission, according to several studies, including one in rural Mali.

Still, for all the mesquite's problems, opinion is divided on what ought to be done. As debilitating as it can be, some farmers have grown dependent on its assets. Mahmoud Jamal, a farmer near the northern Sudanese town of Karima, attributes his property's continued existence to the plant. While many of his neighbours' farms have crumbled into the desert, the deep-rooted trees he planted around his land appear to have foiled the sands.

"It's nasty and eats everything. That's why I call it the National Congress Party tree," he joked of the Sudanese dictator's political party. "But it's good when it's on your side!"

In Kenya, where the government has imposed a moratorium on tree cutting due to rampant deforestation, the mesquite has been mooted as an undesirable and prolific alternative to struggling native species. It could bring in up to \$300 million worth of charcoal, the ministry of environment and forestry suggests. The tree might have timber and biomass energy potential, too. None of this may be sufficient to balance out the drawbacks the plan's advocates acknowledge, but with major mesquite contamination and little cash, they feel it's the best of a bad bunch of options at their disposal.

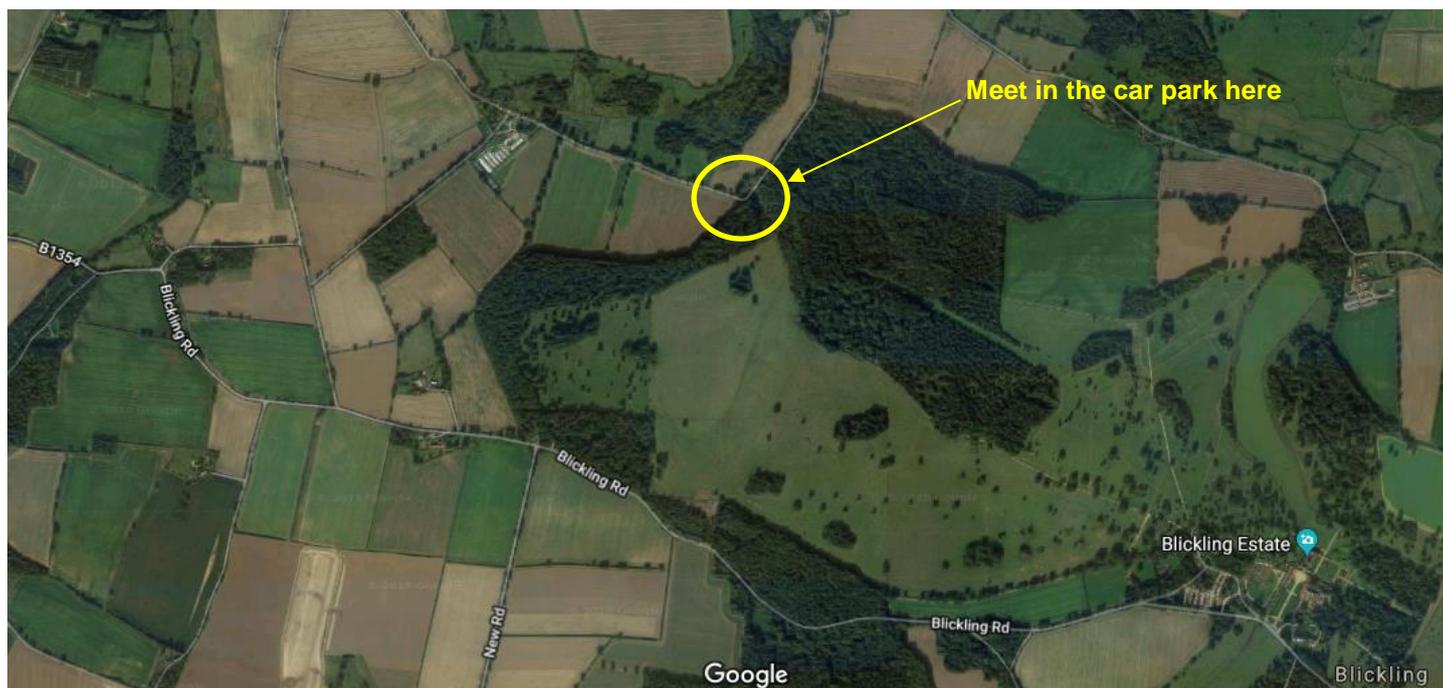
"Looking at the budgets, the amount of money that will be needed, it may not be possible to get rid of it," Muthike said. "So looking at the challenges, we have to utilise it."

Other scientists, however, insist that eradication must be prioritised. Championing its use will only contribute to its spread, they warn.

One proposed idea is to release natural enemies of the plant, such as the evippe moth, but despite assurances from some scientists officials are worried that the moth could end up being a problem of its own. In the meantime, conditions are ripe for continued spread of mesquite. More climate change-related extremes, like flooding, could carry its seeds far and wide. The tree, too, may adapt, allowing it to spread even farther. It seems likely it will continue to impact one of the world's most vulnerable regions.

Our Next Meeting : Blickling Great Wood 8 May 2019 at 19:00

JOIN us for an evening walk around the superb Blickling Estate, exploring the ancient woodland. We shall meet in the Great Wood car park on the Blickling Estate, illustrated on the map below, for a 2 hour stroll and discussion, sharing views on the 950 acres of woodland and parkland. Please arrive on time.



Tree Sleuths are Using DNA Tests and Machine Vision to Crack Timber Crimes

An article by Aisling Irwin published on www.nature.com

WHEN 420 tonnes of deep crimson logs arrived at a Sri Lankan port in April 2014, customs officers cast a suspicious eye over them. The wood was en route from Zanzibar in Tanzania to Hong Kong, where it would probably be crafted into expensive furniture for the Chinese market. However, a tip-off from international police organisation Interpol alerted Sri Lankan officials to the fact that the 3,669 rosewood logs were from Madagascar, which had banned such exports in 2010.

To prove the origin of the rosewood, Sri Lankan authorities sent samples to a laboratory in Oregon that was testing a new weapon in the fight against illegal logging, a US\$200,000 mass spectrometer. In mere seconds, scientists at the US Fish and Wildlife Service Forensics Lab in Ashland determined that the wood bore the distinct chemical signature of a Madagascan species of rosewood and not one of wood legal to export.

After a drop in the early 2000s, the trade in illegally logged timber is rising again. Interpol estimates that between 15% and 30% of the global timber trade violates either national law or international treaty. In some tropical countries, such as the Democratic Republic of the Congo, Laos and Papua New Guinea, illegal timber could account for more than 70% of the nation's production. This market is worth between \$10 billion and \$100 billion a year, according to a 2016 report from the International Union of Forest Research Organizations in Vienna.

Some high-income countries, including the US, South Korea and those in the EU, have banned the import of illegally sourced wood and products made from it and forced importers to prove their supplies are bona fide. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international agreement signed by 183 countries, forbids or restricts trade in the most threatened species. In 2016, it added to the list all the rosewoods belonging to the genus *Dalbergia*.

Such efforts suggest that illegal timber imports are thriving, in part because the crime is so difficult to uncover. From Brazil and Madagascar to Europe's Carpathian Mountains, trees move from forest to living room through serpentine routes, with twists and turns where illegal wood can be hidden. A single piece of plywood can contain 18 different tropical timbers. An illegally harvested oak tree from Russia can voyage to Vietnam to become a table, and by the time it reaches a US retailer, its origin has mysteriously changed.

The global paper trail that accompanies timber is notoriously easy to manipulate. So those tasked with fighting illegal trade and the companies now compelled to crack down on it

are turning to technologies that can spot the signatures of illicit timber. Scientists are developing a suite of tools that can identify the species and the country, and even the region, it came from. Thanks to advances in chemical and genetic fingerprinting, it is now possible to determine where a tree grew, sometimes down to a particular patch of forest. Some of these tools are already being used to catch criminals.

A few formidable obstacles are keeping these techniques out of routine use, one of the biggest of which is a lack of reference samples against which to compare suspect timber. However, there are signs of progress towards developing a library of the world's forests. In February, the US government and various international partners said that they would plough resources into collecting and curating thousands of georeferenced tree samples.

"I'm convinced that in five, ten years, with any wood product, you'll be able to know exactly where it came from," says Phil Guillery, head of supply-chain integrity at the Forest Stewardship Council (FSC), a voluntary certification body in Bonn, Germany, and one of the forces behind the library effort. "You can't fake the science."

A giant eucalyptus tree dominates the view from Peter Gasson's office in London's Royal Botanic Gardens, Kew. The lab of the wood anatomist is strewn with curiosities: 'oak' blinds that turned out to be softwood and a millefeuille of plywood from China with a suspicious veneer. In a cabinet are 36,000 microscope slides, each containing a sliver from Kew's vast collection of wood samples. The microscope picks out more than 100 features that betray the sample's identity.

Two kinds of wood lie beneath a tree's bark. An outer sapwood layer holds vessels called xylem tubes that siphon water and minerals up the plant. In the inner layer, of heartwood, resin blocks much of the xylem. A horizontal section of the wood reveals the rings; a vertical section exposes the long lines of vessel elements, giving the familiar grain of the wood. Depending on the genus, vessels can lie in neat, concentric rings or can be dispersed through the trunk.

Gasson's lab has hundreds of obscure guides to wood anatomy, "but mostly it's all in here", he says, pointing to his head. It's taken 30 years to understand the quirks of the world's 30,000 or so tree species, so that knowledge is precious, but, after staff cuts, Gasson is Kew's sole wood anatomist, and one of just 131 members of the International Association of Wood Anatomists.

Yet wood anatomists are more in demand than ever. "Now, is as sexy as being a wood

anatomist will ever be," says Alex Wiedenhoef, Gasson's counterpart at the US Forest Products Laboratory in Madison, Wisconsin.

Gerald Koch at the Thünen Centre of Competence on the Origin of Timber in Hamburg, Germany, has helped to push wood anatomy to new heights, using it to expose a far-reaching scandal involving European charcoal supplies. In 2017, the wildlife charity WWF in Germany approached Koch over concerns that Germans were unwittingly using charcoal that had been made from protected forest wood.

Charcoal is too brittle to slice into the thin sections that wood anatomists ordinarily analyse under a microscope. "If you cut it with a knife, you just get a powder," Koch says. So his team worked out a way to digitally reconstruct such sections from irregular lumps of charcoal, using an €80,000 (US\$90,500) 3D reflected-light microscope, the first application of the technology to wood anatomy.

Koch's analysis provided enough information for Johannes Zahnen, a specialist in forest policy at WWF Germany, to deduce that 40% of the samples of barbecue charcoal he had submitted to Koch had come from tropical countries.

"That was a surprise to everybody," says Zahnen. Armed with this and other questionable claims of provenance exposed by Koch, he traced a large proportion of Germany's charcoal back to Paraguay and Nigeria, two countries where illegal logging is rife. The investigation triggered others in Europe and, ultimately, helped to expose a major logging fraud in Ukraine.

The dearth of wood anatomists has inspired some to turn to machines. At the Forest Products Laboratory, Wiedenhoef and engineer John Hermanson have invented the XyloTron, which they hope will be used as a field screening tool that can alert inspectors to timbers that merit further, forensic analysis. The machine, which is currently in field trials, consists of a customized camera and a computer loaded with a reference collection of images that allow the device to identify wood types.

However, even with technology such as the XyloTron and Koch's 3D microscope, anatomists cannot usually pinpoint the exact origin of a tree, or its species — important details because legality might hinge on where a particular species was sourced.

That was the information the London-based Environmental Investigation Agency (EIA) needed for an inquiry several years ago. The non-profit organization suspected that Mongolian oak (*Quercus mongolica*) was being

plundered from forests in eastern Russia, and not from legal stocks in China, before being purchased by a US hardwood-floor retailer, Lumber Liquidators.

The EIA contacted Agroisolab, a firm based in Welburn, UK, and Jülich, Germany, to see whether it could pinpoint the origin of the wood. The company uses a technique called stable isotope ratio analysis, which probes variations in the proportions of several non-radioactive isotopes of oxygen, hydrogen and nitrogen. These ratios differ across landscapes depending on geology and weather patterns, and leave their imprint in a tree's tissues as it absorbs water and nutrients.

Applying the technique to trees has been tricky, says Roger Young, chief executive of Agroisolab, because its success relies on having a map of the isotopic ratios of the relevant plant across all regions of interest and such reference samples need to be collected with great care, says Bernd Degen, head of the Institute of Forest Genetics in Grosshansdorf, Germany. Geographical factors, such as proximity to a river, can influence the isotopic ratio. Even the annual rings in a tree can vary isotopically, depending on the environment during each year of growth.

EIA investigators tracking Lumber Liquidators' supply chain retrieved wood from Russian sawmills and Chinese flooring factories, and sent them to Agroisolab. However, they hit a problem: although the lab had oak reference samples from other parts of the world, it lacked them for Russia and China, where the wood was suspected to have come from. So investigators from the WWF, which was collaborating with the EIA, travelled to eastern Russia to collect samples from 50 sites and the isotopes in those showed a clear correlation: the oak flooring pieces had come from Russia, not China.

The EIA shared its results with US federal prosecutors, who were also investigating Lumber Liquidators' oak supplies. The isotopic data confirmed evidence, such as company documents, that the federal investigators had already gathered. The firm pleaded guilty in 2016 and agreed to pay a \$13-million penalty, the largest ever levied in the United States for trafficking illegal timber.

The stable-isotope analysis didn't win the case, but had the technology been available when the investigation began, the US Department of Justice said in a press release,

"perhaps Lumber Liquidators could have been flagged for violation years ago, thus averting the flow of money back to China and Far East Russia in support of illegal logging".

That case transformed the field by showing that it was possible to determine where a tree had been logged, says Meaghan Parker-Forney, a geneticist at the World Resources Institute in Washington DC. The US government's endorsement, she adds, showed people that "this stuff is actually potentially really valuable to combat the trade and maybe we should be pursuing this".

The aroma of agarwood incense and the tell-tale colours of rosewood are the result of the timbers' chemical make-up, which varies with genetics and environment. At the Fish and Wildlife Service Forensics Lab, these chemical fingerprints can now be revealed using a sophisticated technique known as direct analysis in real-time, time-of-flight mass spectrometry.

The technique bombards toothpick sized wood samples with a stream of high-temperature helium ions. These skim molecules off the surface, ionize them and propel them towards the mass spectrometer, where they pass through electric and magnetic fields that separate the ions according to mass, creating a unique spectrum. If the reference collection is good enough, two species indistinguishable by anatomists can be discerned "like night and day", says Cady Lancaster, a chemist at the lab.

Lab chemist Edgard Espinoza, who co-pioneered the application of the technique to wood, has been examining suspicious items for US customs since 2013, including the Sri Lankan rosewood shipment. He and Lancaster are building up a reference collection of thousands of samples from around the world. It already includes all the commercially traded species listed under CITES.

Genetic fingerprinting is another technique showing promise in timber investigations. The approach analyses the unique genetic make-up of individual trees, and has already had some successes. During the hunt for the people who illegally chopped down big leaf maple (*Acer macrophyllum*) in Gifford Pinchot National Forest in Washington in 2015, investigators used the technique to match planks seized at a sawmill in the state to the exact stumps in the forest from which the timber had come.

Such clear-cut conclusions are rare because of the global nature of illegal logging.

So researchers are hoping to use genetic variation to match suspect wood to local or regional populations of a tree species. That way, a sample from a mahogany shipment purporting to come from Brazil might be proved to carry the genetic profile of trees from adjacent Colombia.

To do this, as well as to apply the other approaches, will require a georeferenced library of the world's forests. Most of the hundreds of thousands of wood samples already collected lack data about their precise origins. So researchers are fanning out across the world's forests to collect samples.

It wasn't the humidity or the biting insects of the French Guianan rainforest that bothered Niklas Tysklind, an ecological geneticist with the French National Institute for Agricultural Research in Paris. It was the botanists who accompanied him on his expedition in 2014.

Tysklind was trying to obtain wood and leaf samples from *Manilkara huberi*, one of the tree species commonly known as balatá, for the LargeScale Project, an endeavour led by the Thünen Institute to develop genetic reference data for trees in Africa and Latin America.

However, the botanists were finding that balatá was not one species, but possibly dozens. When the number of species reached 16, "I started losing hope", says Tysklind. It is tasks such as these that make creating reference maps and databases a gargantuan undertaking.

Now, the FSC is trying to help such efforts. Together with Kew, the US Forest Service, Agroisolab and others, it is creating the Global Timber Reference Project. This effort will collect samples from the FSC's network of 1,500 certified forests in such a way that they can meet the technical needs of the different identification techniques. Each sample will be precisely geolocated and will travel from tree to filing cabinet in a manner sufficiently secure for any evidence to be admissible in court.

One database won't stop illegal logging, but law enforcers, investigating non-government organisations and scientists have a new, if fragile, optimism that they can start to turn the tide on the illegal timber trade. "Once the industry — the traders — begin to see there's a method that works, it's the equivalent of a policeman on the block," says Young. "The chance of them being caught now is no longer zero."

Hedgehog Street

I AM indebted to Mark Symonds at Broadland District Council for recently introducing me to www.hedgehogstreet.org, part of a wider campaign to help hedgehogs, run by two UK-based charities, People's Trust for Endangered Species (PTES) and the British Hedgehog Preservation Society (BHPS).

Whilst the two charities have been working together for over a decade, recent efforts have been focused on the conservation of the hedgehog, as the evidence for a decline has mounted. They run a steering group that meets every six months to decide on the direction of the work.

They have four 'arms' to their strategy for

hedgehogs. They have invested in a range of research projects that are looking at answering some of the unknown questions concerning hedgehogs and their ecology. Some of this research has helped us to develop completely new ways to detect hedgehogs.

They have set up and manage a series of professional training courses for land managers and consultants, delivered by mammal experts in different parts of the UK. They are also building links with developers to ensure hedgehogs are not forgotten in the rush to build houses.

Needless to say, training is a key element of their work and outreach and engagement are also important.

Now, the website gives us all the opportunity to record our sightings of these precious creatures. The BIG Hedgehog map helps us to understand where hedgehogs are in the UK and where they are missing from. There is no need to log multiple hedgehogs in your garden, or to do so every night, but please continue to log each month/year if it's the same location so that we can see if they are still coming back.

Go on. Do it today!

BBC Countryfile: 'That's Awful' Charlotte Smith Uncovers National Park Funding Slashed by 40%

As reported by Rebecca Miller on www.express.co.uk

COUNTRYFILE returned to BBC One on 7 April with a national park special and it wasn't long before the funding for these protected areas was under close scrutiny as Charlotte Smith found out how the government cuts had affected the parks. Countryfile viewers tuned in to see the show look back and celebrate the 70-year history of Britain's national parks.

During one segment, presenter Charlotte Smith was seen in the South Downs, East Sussex "87 beautiful miles of chalk hillside, dense woodland and people - lots of people".

She was finding out how it wasn't just dog walkers who were "trapesing through the protected landscape" instead it was whole urban communities and it wasn't long before she revealed how much the national parks had suffered from recent government funding cuts

Scenes aired showed Charlotte alongside a volunteer park ranger picking up litter from a hillside and whilst she was happy to see so many locals doing their bit to protect the landscape, she revealed just how dire the financial situation for national parks all over the country was.

"Between 2010 and 2015 National Parks in England had their government funding slashed by up to 40%," Charlotte explained to those watching at home. "Following an outcry, a



promise was made that there would be no further cuts for at least five years, but budgets never recovered."

She then went on to discuss the Wales and Scotland's situation: "Cuts to the Welsh and Scottish parks have seen around a fifth of their total funding disappear. There's no doubt how the parks of funded will be coming under close scrutiny as park of the current government review."

Discussing the case study of South Downs, the chief executive spoke about a solution he believed could work. "We're not a luxury we're

a necessity," Trevor Beattie commented. "We're the natural health service."

Discussing the future review he said he was confident "more opportunities, more freedoms and powers" would be presented for the National Parks. "With those opportunities we can tackle the fundraising issues and meet the pressures of this very popular park."

Some of those watching Countryfile couldn't believe the figure of funding that was cut.

Taking to Twitter to discuss, one said: "#Countryfile 40% funding cuts to #NationalParks that's awful."

"Funding has been cut for national parks say the chief executives of each of the national parks #Countryfile," someone reiterated.

"#Funding has been slashed #brexiteffect #Countryfile," another commented.

Meanwhile many enjoyed the theme of the programme as one said: "Great episode of #Countryfile about the national parks."

"Watching tonight's episode of @bbccountryfile and feeling blessed that we have these wonderful national parts to visit," someone wrote.

UK Scientific First for Ancient Caledonian Pine Forest

THE uniqueness of Beinn Eighe's ancient Caledonian pine forest has been recognised with the establishment of the National Nature Reserve (NNR) as the UK's first area designated for genetic conservation. Beinn Eighe was the UK's first NNR, and now it is hailed as a genetic first.

The move reinforces the special nature of the pines at the Wester Ross reserve and the importance of protecting them for future generations. Some of the remarkable specimens at Beinn Eighe are more than 350 years old, and the genetic composition of the pinewood has been shown to be truly distinct.

Research has shown that the Beinn Eighe trees colonised via a different route from pines in other parts of Scotland after the last ice-age, and recent scientific work makes it clear that these pines have a unique genetic diversity.

The Scottish Natural Heritage (SNH) reserve is managed to conserve this special woodland, and now this work has been formally recognised with the registration of the site as a Gene Conservation Unit with the European Forest Genetic Resources Programme.

Gene Conservation Units have been set up elsewhere in Europe, but this step reflects a major breakthrough for genetic conservation of wild species in the UK.

This new status for the NNR is a vitally important contribution to the care of the core biodiversity of Scotland. Genetic diversity is essential for resilience to pressures such as climate change and tree diseases, allowing populations to adapt as conditions change.

The intention is that the designation of the Beinn Eighe pinewood will act as a beacon for the UK, leading the way for gene conservation units to be established for all of our tree species.

Jeanette Hall, SNH Woodlands specialist, said: "Beinn Eighe is renowned for the beauty of its ancient Caledonian pine forest and we've been working to restore and expand this unique woodland for more than 65 years.

"Registering the nature reserve as the UK's first Gene Conservation Unit shows how committed we are to protecting and preserving

these special trees. It also marks another important step towards meeting our international obligations on gene conservation."

Professor Pete Hollingsworth, Director of Science and Deputy Keeper at the Royal Botanic Garden Edinburgh, said: "Conserving genetic diversity is important. Loss of genetic diversity can lead to elevated extinction risks for populations or species and reduce their ability to adapt to future changes in the environment. Integrating genetics into conservation planning is thus important for long-term species survival prospects".

Organisations involved in the Beinn Eighe designation include: Scottish Natural Heritage, Royal Botanic Garden Edinburgh, University of Edinburgh, Centre for Ecology & Hydrology, Forest Research and Forestry Commission Scotland.

Property Developer 'Cuts Down Huge Wood Before Applying for Permission to Build There'

An article by Emma Rosemurgey published on www.pretty52.com

FURIOUS residents claim a property developer cut down a massive woodland before he applied for planning permission to build there. The large wood was once a green hillside but has now been cleared of its trees and reduced to flat mud to make way for a proposed nine houses, but neighbours are fuming because permission has not yet been granted by the local council who have since voted against it.

Andy Love, 56, who owns a house backing onto the land said they were shocked in December when the developer started lopping down trees.

Several residents in Brixham, Devon, complained to South Hams District Council who confirmed the developer didn't have planning permission as yet. The Forestry Commission is also now investigating reports of "alleged illegal felling".

Developer Dave Holloway is now locked in a battle with the local authority but local residents say the damage has already been done and the wildlife cannot be reclaimed.

The application submitted to the council says work has not begun on the site, but locals say from photographs it appears rubble and other debris may have been dumped there.

A tree survey, designed to show what species are there and how many, was submitted on 22 January this year, but locals, including Andy, a sales manager, said this was submitted after the trees were felled and doesn't accurately assess the ecology impact.

Andy moved to the fishing town from the Midlands, and said he found his perfect home on Seymour Drive, adding that the woodland nearby was a selling point. He said: "For us it started when we moved down two and a half years ago, we always wanted to live here one day.

We found this house and loved it because it was next to some woodland. We spent a long time looking for the right house."

Andy says the land was later sold by Linden Homes to Mr Holloway, explaining: "A few months in we decided to inquire about the land next to us, as we wanted to understand what Linden Homes's plans were for the land. We were told we were just too late and it was sold a few weeks ago.

"We hadn't seen it advertised and there wasn't a sign on it. We subsequently found out that it was advertised in Brixham for some reason. As a precaution, we put a drone up to get some footage of the area just in case anything happened re new ownership of the land."

Soon after learning the land had been sold, Andy saw a team of workers on the land chopping down the trees.

He continued: "In December last year a whole team of people showed up and started taking one tree after another down. This area is

a SHDC Environmental Improvement Zone, it was a wildlife corridor and part of a RSPB consultation zone for the Cirl Bunting.

"The trees were planted as a condition of previous planning approvals to shield my house and my neighbours from the South Devon AONB which is 2km away. We thought the trees would be there forever and they would never be felled. This woodland area was part of the National Forest Inventory for England.

"I went out to speak to this guy who arrived on site on 8 December at 07.30 to ask what was happening, and he said 'houses obviously'. I said 'but what about the wildlife in there' and he said 'it's all clear'. He explained he was the Landowner. This was the first time I had been able to have any correspondence with the owner of the land."



Andy said that when planning was submitted, Mr Holloway included wildlife and ecology surveys completed after the trees were felled.

Andy continued: "He didn't have planning permission, no plans were submitted until 18 March 2019. His planning application, dated 18 March, includes various reports. One of those is an ecology report looking at wildlife implications and the second is a tree report looking at the impact of the development on any trees. Both of those reports were done in January, a month after he felled all the trees.

"The tree report describes the area as derelict of trees and the ecology report suggests there will be no impact on wildlife.

"8 and 9 December he felled the trees and moved them up to the top of the site adjacent to my house through December. Through Christmas and New Year he was chainsawing the trees, removing them from site and shredding branches etc."

Danielle Hunn, a Seymour Drive resident, said: "We are all outraged that our quiet

Seymour Drive has become a target by unscrupulous developers.

"My quiet cul-de-sac end of Seymour Drive has been exactly that for 20 years. We bought here eight years ago precisely so that our very young children would have a safe place to learn to ride their bikes, scooters and skateboards - which they did regularly.

"We enjoyed the birds, bats and hedgehogs that we saw living in the woodland that has now been meticulously obliterated. On purchasing here, we were told that Linden Homes managed the woodland site and that it was always required to be a non-developmental site.

"In fact, I returned many live mice, voles, birds, and many, many live slowworms and actually a hedgehog to this woodland myself that were being regularly presented to me by my cats from this very site, or arriving in my garden from this site.

"The cats were always hunting in there, which told us the site was always abundant with wildlife... contrary to the developer's post-land clearing surveys."

The planning application was taken to a council meeting on Wednesday, 17 April where members voted against it. The planning committee backed protesting neighbours, describing the site as an "overdevelopment" and "unneighbourly".

Cllr Robin Springett said: "The person who brought this land cleared it over the Christmas period when it was virtually impossible to get a council stop notice." He added: "I recommend that this council strongly opposes this planning application.

"It's building on land that was set aside on a previous development as a greenspace. It's actually calling the land a brownfield site but it's not and I consider that this is an over development in any case."

The planning application will be decided by South Hams District Council on a date yet to be announced.

Mr Holloway confirmed that he owned the land but refused to comment further, saying: "I'd rather not."

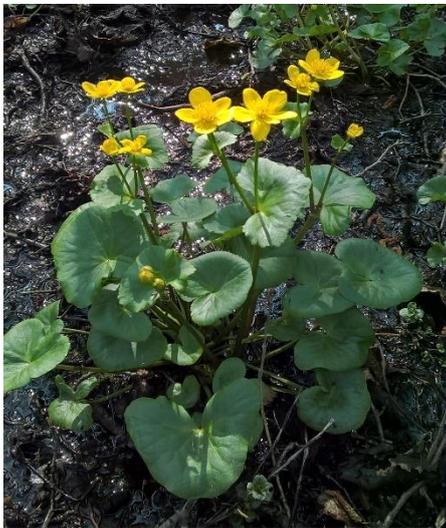
A spokesperson for the Forestry Commission said: "Trees are a precious part of our environment and we take all reports of alleged illegal felling extremely seriously. We can confirm that we are investigating reports of alleged illegal felling at Seymour Drive in Dartmouth, Devon. Cutting down trees without permission can result in numerous actions including prosecution."

Dr Jo's Corner

The column by Jo Parmenter, Reedham's Parish Tree Warden

This month I would like to consider two species, both of which are of great interest and very important in Norfolk. They are the Marsh Marigold *Caltha palustris* and the Nodding Star of Bethlehem *Ornithogalum nutans*. I hope you find them as interesting as I do and should you spot them in the future you may afford them the appreciation they deserve.

THESE Marsh Marigolds *Caltha palustris* (AKA King-cup) were growing on the surface of a boggy pool in carr woodland. Supported only by their roots (and possibly by sheer willpower). I made my way out to photograph them perching on tussocks of sedge and the odd dead twig.



This is a species that we have observed to be declining in Norfolk, and possibly more widely, over the past 20 years for reasons hitherto unknown. However, a possible answer came to light recently when I met Ernest Hoyos at a swampy spot in the Broads and he told me that he has independently observed that the Chinese water deer (which continue to increase in number so that we have more here now than in China) browse very heavily on their succulent leaves in early spring and this could be enough to tip the balance between past abundance and present scarcity.

Marsh Marigold is not a marigold at all of course, but a member of the buttercup family. It is native of marshes, fens, ditches and especially open wet woodland in the UK. It has been in flower for a little while now and will continue until late spring, so it is well worth trundling down to your local swamp and seeing if you can see any.

The glossy golden yellow flowers are borne on stout fleshy stalks above a dense rosette of kidney-shaped dark green leaves. The seeds are spongy and float on the surface of the water, until they wash up in a location suitable for germination.

The generic name *Caltha* is derived from the Ancient Greek 'kálatos', meaning "goblet", and



is said to refer to the shape of the flower. The species epithet *palustris* is Latin for "of the marsh" as befitting its typical habitat.

As with many readily recognisable plants, Marsh Marigolds have many traditional names such as, Yellow-Boots, Molly-Blobs, Horse-Blobs, Water-Blobs and Water-Bubbles. Bit of a blob theme going on there I googled it to learn that they are also known as May-Blobs because traditionally the flowers were used in church festivals and scattered in cottage doorways on May Day to usher in the month. Still no wiser as to the "Blob" bit!

FOR reasons best known to itself, the Nodding Star of Bethlehem *Ornithogalum nutans* seems to be having a good year. Most years it doesn't seem to do much !

Nodding (also known as drooping) Star-of-Bethlehem or Bath asparagus (the young, unexpanded flowering shoots are cooked and served like asparagus, although personally I think you'd be best growing the real thing) is a species of flowering plant in the same family as Asparagus and native to Europe and South-West Asia.

It is a bulbous perennial growing to 20–60 cm, with strap-shaped leaves and bears fragrant grey-green striped, white flowers, which give it an overall silvery-grey colour, in spring.

It is a garden escape and found close to civilisation on woodland edges or along shady roadside hedge banks, and in churchyards. It was first cultivated in Britain by 1648 and



recorded from the wild by 1821. Populations are usually small and short-lived though some are persistent, such as at Bodney churchyard (West Norfolk) where it has been known since 1917.



Global Tree Cover Loss Continues but is Down from Peak Highs

THE WORLD lost 12 million hectares of tropical tree forest cover in 2018. That's a loss the size of Nicaragua and a rate of 30 football fields every minute, according to data announced by the World Resources Institute's (WRI) Global Forest Watch. Among the tree cover lost were 3.64 million hectares of primary rain forest which had not been cleared or re-grown in recent history. That's an area the size of Belgium.

The losses of tropical tree cover are sharply down from 2016 and 2017, when forest fires swept through Brazil, but still represent a gradual increase since record keeping began in 2001. The loss of tropical primary forest also is sharply down from 2016 and 2017 and is almost unchanged since 2001.

"It's really tempting to celebrate a second year of decline since peak tree cover loss in 2016, but if you look back over the last 18 years, it's clear that the overall trend is still upward," according to Frances Seymour, a senior fellow at WRI, a Washington, D.C.-based global research organization. Seymour, an authority on forest and governance issues, was among the experts who announced the new data at a briefing.

"We are nowhere near winning this battle" to halt forest loss, despite some progress in forest monitoring and protection efforts in Indonesia, Brazil, and other countries, Seymour said. "The world's forests are now in the emergency room. Even though they are recovering from extensive burns suffered in recent fires, the patient is also bleeding profusely from fresh wounds. It's death by a thousand cuts."

The data derive from the University of Maryland's annual tree cover loss data set, which measures the complete removal of tree cover canopy in 30m x 30m pixels, according to WRI. That measurement does not differentiate between permanent and temporary land cover change or between natural and human causes of the loss.

"Continued tropical forest loss pulls the rug out from under efforts to stabilize the global climate," Seymour said. She noted that forests store carbon in addition to providing such other services as habitat for numerous species and resources for people.

"For every area of forest loss, there is likely a species that's 1 inch closer to extinction," she said. "And for every area of forest loss, there is likely a family that has lost access to an important part of their daily income from hunting, gathering, and fishing."

Seymour added that forest loss also poses "an existential threat" to the cultures of indigenous people.

The primary forest loss was less concentrated in 2018 than it had been in the past. In 2002, Brazil and Indonesia accounted for 71% of primary forest loss but made up just 46% of the loss in 2018. Instead, those two countries, along with the Democratic Republic of the Congo, Colombia, and Bolivia, accounted for more



than two thirds of the loss in 2018.

In Colombia, the loss appears to be linked to land grabbing in the Amazon, as the peace process opened up lands previously occupied by the Revolutionary Armed Forces of Colombia (FARC) guerrilla movement, according to Global Forest Watch manager Mikaela Weisse. Forest losses in Bolivia are largely due to large-scale agriculture and pasture, and many of the losses in the Democratic Republic of the Congo are related to small-scale agriculture, Weisse said.

Brazil often is touted as a success story in reducing deforestation, with the country lowering the rate of deforestation by about 70% in the early 2000s, Weisse noted. However, she said that although the country's primary forest loss of 1.3 million hectares in 2018 is less than the 2016-2017 fire-related spike, the losses otherwise are the highest for Brazil since 2006.

"It's too early to say whether this increase is related to Brazil's new administration," Weisse

said. "Next year's data should give us a better idea." Brazilian President Jair Bolsonaro, who has indicated his support for expanded development in the Amazon, took office on 1 January 2019.

Other countries of concern include Ghana, where primary forest loss in 2018 jumped 60% higher than in 2017. Madagascar lost 2% of its primary forest in 2018, the most by percentage of any tropical country.

One bright spot appears to be Indonesia. Although Indonesia lost 340,000 hectares of primary forest in 2018, it was that country's lowest rate of loss since 2003. Reasons for this improvement include recent government policies about forest and peatland management, according to Belinda Arunarwati Margono, director of forest resources inventory and monitoring for the Indonesian Ministry of Environment and Forestry.

"We can expect dryer, more fire prone conditions in the 2019 El Niño year, a true test of how successful these policies are," WRI documents state.

Other causes for optimism include increased monitoring, protection, and enforcement measures, along with heightened concern among people in tropical countries about forest loss.

"Clearly, at the end of the day, the decisions about whether to continue allowing tree cover loss to take place [are] going to take place in the forest countries themselves," Seymour said. "And increasingly, there is an appreciation within those countries of why preserving the forest is important domestically."

She added, "We know what to do to stop forest loss, but we're not doing enough of it."





Dates for your Diaries

Important dates you need to be aware of

National events are shown in black and our local Network dates are shown in red. Why not have your events advertised here in Broadsheet? It will cost you nothing and will help you to get an interested attendance. Don't leave it until the last minute though!

21 March – 21 September 2019 Tree Care Campaign

The annual campaign highlights the need for better care for all trees, in order to ensure their survival and increase the numbers reaching maturity. In particular, anyone who has planted trees in the past 5 years is reminded to involve their local community and re-visit them to carry out a few simple tree care tasks that can save young trees from dying and allow them to develop into the mature trees. This helps enhance our urban and rural landscape, provide shade and local climate change, and supports biodiversity.

1 – 31 May 2019 Walk in the Woods

In May every year, community groups, environmental organisations, local authorities and Tree Wardens organise Walks in the Woods. Events as diverse as bluebell trails and healthy walking routes, bat and badger watches, treasure hunts, tree trails and woodland open days. It is also an annual reminder that more trees and woodlands need to be planted now if there are to be any for future generations to enjoy.

If you don't have an accessible wood in your parish, then hold a "Walk in the Street". Choose the street in your parish with the most interesting trees and/or oldest buildings (they tend to go hand in hand) and organise a walk there. You'll be surprised just how successful that could be.

8 May 2019 at 19:00 Broadland Tree Wardens' Evening Walk around the Blickling Estate

See the specific article in this edition of Broadsheet.

10 July 2019 at 19:00 Broadland Tree Wardens' Evening Visit to a site yet to be arranged

The second of this year's visits. Do you have a site or project we can visit? Let me know.

8 June 2019 Tree Council Pilot Advisory Group

The Pilot Advisory Group (PAG) will meet in Birmingham for its second meeting.

23 September – 23 October 2019 Seed Gathering Season

Through this autumn festival The Tree Council aims to inspire everyone, particularly school children and families, to gather seeds, fruits and nuts and grow the trees of the future. Growing trees from local seed can have great benefits in re-stocking areas with trees of local provenance. The concept of local provenance suggests that trees that are adapted to the local circumstances and so are likely to flourish and help restore, conserve and beautify local urban and rural spaces.

9 October 2019 at 19:00 Broadland Tree Warden Network Annual General Meeting at Freethorpe Village Hall

Our first AGM and a celebration of our first year as an independent Network. Learn the state of the Network, our achievements and plans for the future. Air your opinions and share any views or suggestions you may have. Then, of course, we shall elect our Executive Committee for the coming year.

This is the one meeting of the year that you simply cannot afford to miss.

October 2019 East Anglian Regional Tree Warden Forum here in Broadland

I am still finalising the details but we are definitely hosting this year's event. The plan is to hold the event in Brundall Memorial Hall.

I shall invite Prof Tom Williamson, landscape historian and landscape archaeologist at the University of East Anglia and Anne Crotty, Senior Arboricultural & Woodland Officer at Norfolk County Council to be our guest speakers.

Tom has spoken to Forums before and is superb. Anne will tell us about the Council's ash dieback management plan. I have yet to contact either of them, so at present this is just my plan.

In the afternoon we shall visit the Brundall Church Fen Local Nature Reserve where we will board a bot for a short exploration of the Norfolk Broads.

Whatever happens, I guarantee that this will be the best Regional Forum you have ever attended (not that many of you have ever attended one) so make sure you note down the date.

23 November 2019 Tree Charter Day

"Trees deserve to be celebrated. Each year the whole of UK society should unite in celebrating the value and importance of trees and woods to people."

On the last Saturday in November each year, the first day of National Tree Week, local communities, schools, organisations and individuals should mark a national 'Tree Charter Day' with activities and events that celebrate and reinvigorate the relationship between people and trees.

The trees and woods around us are clues to how our history has shifted and our culture has changed over centuries. The diverse cultural associations of trees bring multicultural communities together and can foster a sense of belonging in the natural landscape. Our rich tree heritage should be remembered, celebrated and experienced, and Tree Charter Day is the perfect opportunity!

23 November – 1 December 2019 National Tree Week

First mounted in 1975, National Tree Week is the UK's largest tree celebration annually launching the start of the winter tree planting season. It is also a great chance for communities to do something positive for their local treescape.

Each year, The Tree Council's member organisations such as voluntary bodies and local authorities, schools, community groups, Tree Wardens and many others, support the initiative by setting up fun, worthwhile and accessible events, inspiring upward of a quarter of a million people to get their hands dirty and together plant around a million trees.

4 December 2019 Broadland Tree Wardens' Christmas Social at a venue yet to be arranged

Join us for a social event to end our first full year.



News from Broadland District Council's Conservation Team

Broadland Tree Preservation Orders Served, Confirmed and Revoked

TPO Number	Address	Served	Trees Protected	Status
2019 No 1 (1294)	11 Station New Road, Brundall	06/02/2019	11 Douglas fir	Provisional - 1 objection
2019 No 2 (1295)	15 Cawston Road, Reepham	06/02/2019	1 pine	Confirmed 05/04/2019

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

App No	Address	Species / Requested Works	Decision
20181591	1 Fullers Loke, Drayton	Cedar x 5 – fell.	Approved
20190153	Dellhouse, 47C The Street, Brundall	Oak A - remove two dead branches, raising up and reducing horizontal branches by up to 25% to reduce overhang above building. Oak B - remove whole tree (single trunk) which is dangerously growing at 45 degrees into garden over building of 6 Deepdale.	Split decision
20190159	Saint Andrews Park, Thorpe St Andrew	T1, T2, T3 & T4 lime and T5 deodar cedar – re-pollard, trim basal suckers and epicormic on stem. T8 copper beech - remove deadwood (exempt works), selectively reduce end loading on any crossing branches with significant abrasion damage, remove dysfunctional branch at 12m from ground level to the west (no live foliage). Crown raise over building to give 3m clearance and over green space area to give 5.5m clearance. T9 sycamore - remove deadwood (exempt works). T16 & T17 holly - reduce extended branches to canopy line. T18 lime – re-pollard and remove basal suckers and epicormic on stem. T19 lime - remove basal suckers and epicormic on stem. T20 lime - remove deadwood (exempt works) and suppressed and crossed branches.	06/05/2019
20190196	64 Wilks Farm Drive, Sprowston	Oak - crown reduce by 1.5-2m from 13m, height down to 11m and crown spread from 14m to 11.5m.	Approved
20190283	Weston Park Golf Club, Morton Lane, Weston Longville	See Schedule of Works.	Withdrawn
20190291	Crofts, 3 Cromer Road, Aylsham	T1 conifer - reduce height by approx 4m to 4.5 m as per photo 1 due to the recent loss of a large section. T2 conifer - reduce two heavy limbs as in picture by 1.5m approx to suitable reduction points.	Approved
20190298	Land rear of 28 Springfield Road, Taverham	T1 oak - current height 18m and spread 9m. 12 % reduction from garden side removing 2.4m in height and 1.2m in width. T2, T3 & T4 sycamores – fell.	Split decision
20190317	3 Barnby Road, Badersfield	Large mature cherry located on open green space area at front of a domestic property. Proposed work is to control the overall size of the tree and reduce the 'sail area' to lessen the wind and weight loading to limit the risk of branch failure.	Split decision
20190322	5 Edwards Close, Halvergate	T1 cherry - reduce north-western portion of crown by 2m to reduce load on main branch union with included bark and reduce remainder of tree by 1m to shape, 20% thin to alleviate rubbing branches and removal of dead wood. Crown lift/reduce over driveway to 4m in order to provide clearance HGVs and taller vehicles.	Approved
20190324	39 Church Lane, Sprowston	T1 poplar - fell	Split decision
20190334	Felthorpe Hall, 81 The Street, Felthorpe	T13 sweet chestnut - pollard to previous cut points at approx 2-3m, as per annotated image attached. T17 oak - pronounced lean to south and overhangs period glasshouse. Current branch spread extends up to 12m to the south. Proposed work is to reduce the canopy by 4m from the south only to improve balance and prevent branches dropping on the glasshouse.	Approved
20190360	14A South Avenue, Thorpe St Andrew	T1 leylandii x 3, T2 maple, T3 leylandii and T4 oak – fell.	Approved

20190361	Woods End, 23 South Avenue, Thorpe St Andrew	T1 birch - remove due to bad form from poor pruning years ago. Replace with similar species in a better location away from the house.	Approved
20190367	Acorn House, 7A Station New Road, Brundall	T1 oak - reduce northern 50% of the tree by 3m and over-extended limbs on southern 50% of the tree by 5m.	10/05/2019
20190368	21 South Avenue, Thorpe St Andrew	T1 goat willow – re-pollard at 4m. T2 box elder - reduce to previous pruning points, reducing height from 10m to 6m and spread from 10m to 6m.	Approved
20190369	21A South Avenue, Thorpe St Andrew	T1 Lawson cypress & T2 Leyland cypress - reduce height from 10m to 7m.	Approved
20190373	1 Spinney Close, Thorpe St Andrew	T4 oak - crown lift to 3m, reducing back small tertiary branches to provide 3m vertical clearance.	Approved
20190374	Land adj to Norvic Centre Car park, Thorpe End	T1 oak - raise crown to 2.5m over site.	Approved
20190381	43 High Street, Marsham	T1 & T2 oak - reduce long branches on roadside from 4m to 3m, reduce drive and property side from 4m to 2.5m (to old cuts) and crown lift to 4.5m on drive side.	Approved
20190382	28 Evans Way, Old Catton	T1 oak - crown lift to 4.5m, reduce spread from 8m to 5.5m and reduce height from 18m to 15.5m.	Split decision
20190394	The Beeches, The Street, Burgh next Aylsham	T1 beech, T2 sweet chestnut stem. T3 damson, T4 silver birch. T5 walnut and T6 - T12 ash – fell. Dead/dying trees. T13 - T19 oak and T20 sweet chestnut - deadwood removal. T21 oak - remove large limb overhanging main road. T22 leylandii – fell. Too close to buildings.	Approved
20190409	The Belt Lodge, Sir Williams Lane, Aylsham	Whitebeam – prune.	Approved
20190416	70 Lower Street, Salhouse	T1 beech (12m) - crown raise to 2.5m, 1.5m reduction and 10%. T2 Atlas cedar (13m) - crown raise to 2.5m. T3 Atlas cedar (12m) – remove. T4 walnut (11m) - reduce crown from 6m to 1.5-2m to improve it. T5 & T6 spruce (12) – remove. T7 chestnut (13m) - crown reduce by 2m - 2.5m and thin by 12%. T8 weeping beech (12m) - reduce end weight on north-eastern side from a spread of 7m to 5.5-6m. T9 Scots pine - crown raise to 2.5m - 3m. T10 oak (12m) - crown raise to 2.5m - 3m, re-balance crown by reducing south-east side by 1.5m. T11 silver birch - crown raise by removing lowest limb. T12 silver birch - remove limb over horse stables. T13 larch x 2 – remove. T14 Portuguese laurels (8m) - reduce to 1.8 – 2.1m and reduce garden side by 1m - 2m. T15 Lawson cypress (14m) – remove.	Approved
20190424	Paddock opposite Church Farm House, Hindolveston Road, Foulsham	T1 sycamore - remove due to internal structural decay and increased failure of significant large limbs and physiological decline of live crown. T2 roadside oaks - undertake selective reduction of 3-5m of heavy overextended limbs over grass paddock to reduce risk of large limb failures. Crown raise to 5.2m.	Approved
20190428	Land to the rear of 14 Church Close, South Walsham	T1 oak - current height 18m; current spread north 10m, east 8m, south 6m and west 8.1m. T2 oak - current height 16m; current spread north 7.8m, east 4.6m, south 7.5m & west 3.9m. T3 oak - current height 17m; current spread north 6.6m, east 4.4m, south 4.1m & west 4.7m. T4 oak - current height 20m; current spread north 7.4m, east 7.2m, south 7.6m & west 6.7m. T5 oak - current height 20.5m; current spread north 11.4m, east 9.7m, south 9.2m & west 12m. Reduce canopies by 2-3m, thin crowns by 20% and raise lower crowns to 4 - 5m.	31/05/2019
20190430	44 Hungate Street, Aylsham	Oak - remove deadwood, reduce crown by 1.5m over car park side, remove limb indicated on plan.	Approved
20190481	44 Millgate, Aylsham	T1 Portuguese laurel - current height 3.5m, reduce to 1.8m.	Approved
20190487	Farndale, The Avenue, Wroxham	Cedar - reduce height by 7.5m, extending limbs by 10% and reshape.	10/06/2019
20190488	Porthcothan House, 40 The Avenue, Wroxham	5 x large conifers alongside main drive – fell. Fir - reduce height from 8m to 7m. Eucalyptus - reduce height from 15m to 13.5m.	Approved
20190491	18 Pond Lane, Drayton	T1 silver birch (three stems) - reduce crown by approx 2m to suitable pruning points (current spread north 7m, south 5m, east 5m, west 6m).	30/05/2019

20190648	36 Albion House, High Street, Foulsham	Reduce side laterals of bullace and holly clump by 0.5 to 1.5m, reduce height by 2 to 3m, prune back from wall for clearance. Remove holly.	27/05/2019
<p>Explanatory Notes:</p> <ol style="list-style-type: none"> 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. In other words, it is the address where the trees for which the application is made are located. 3) 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. 4) Decision is either the date by which a decision is due to be made by Broadland District Council or the actual decision. 5) This list is not designed to be a definitive list of all the relevant details. The reader should always refer to the specific application on the Broadland District Council "Planning Explorer" at https://secure.broadland.gov.uk/Northgate/PlanningExplorer/GeneralSearch.aspx to view the application or read the Council's decision. 			

Don't Forget

Don't forget to give your annual report at the annual parish meeting of your council this month. It is very important that your parishioners know who you are, what you've done for them and what an asset a Tree Warden can be to a parish.

Ok. So maybe only one man, one woman and one dog may turn up to the meeting, but the point is that the Broadland Tree Warden Network fulfils its responsibilities.

Tell your parishioners that we have had to form our own, independent, Network and that we need financial support from the parishes if we are to be fully effective.

So make sure that the voice of the Broadland Tree Warden Network will be heard, loud and clear, in your parish.