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UK GOVERNMENT'S ACTIONS FOR SUSTAINABLE FORESTRY MANAGEMENT

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REPORT BREAKDOWN

This report aims to break down the UK government's past and current actions in tackling unsustainable deforestation management in the UK. Furthermore, this report will analyse the effectiveness of these actions.

FORESTS FOR CLIMATE CHANGE:

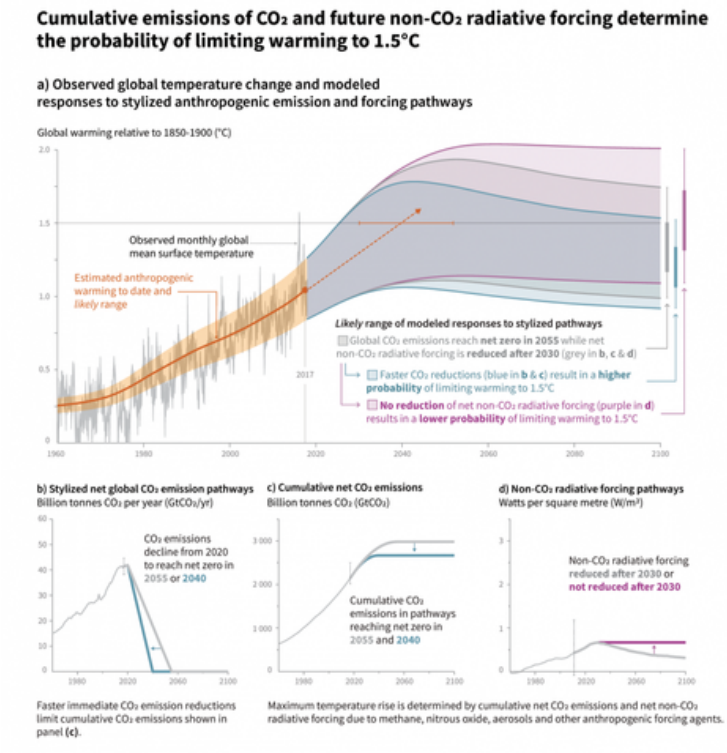
Forests are vital for mitigating climate change as they control and stabilise the climate through their regulation of ecosystems, and protection of biodiversity. Therefore, it is fundamental that international governments maximise the climate benefits of the forest through the implementation of laws and policies that are produced to manage forests more sustainably.

IPCC:

The Intergovernmental Panel on Climate Change (IPCC) has the objective to keep the global temperature below 1.5 degrees Celsius, above pre-industrial levels. This goal requires the removal of vast quantities of Co2 in the atmosphere, and the IPCC suggests that increasing the total woodland area of the world by 24 million hectares (hectare = 10,000 square metres) every year will aid the worldwide goal. The UK is a small country with one of the lowest forest covers in Europe (approximately 13%), and thus, it is critical to ensure all remaining woodland is protected whilst new woodland is being seeded.

EXECUTIVE SUMMARY OF CONCLUSION:

To achieve the IPCC's temperature goal, the UK government must form a long term plan to support the forestry industries. Replanting seedlings after mass deforestation is not enough to limit the forest's carbon excess. instead, a new policy should be introduced, limiting deforestation to a 60% patch retention per area.



GRAPH 1.1: CO2 EMISSIONS AND PROBABILITY OF LIMITING GLOBAL WARMING TO 1.2 DEGREES CELCIUS

THE RISE OF GLOBAL TEMPERATURE

CAUSES OF GLOBAL TEMPERATURE INCREASE:

The rise of global temperature relies primarily on the emissions of CO2 and other long-lived gases, such as nitrous oxide. Therefore, temperature limits will only be contained if emissions reach net zero. Accordingly, worldwide governments have lobbied for plans to help contain the emissions to net zero. In December 2015, multiple nations under the UN joined together to draw up the Paris Agreement. The signing of the agreement is a legally binding treaty that states all agreeing international governments must significantly contribute to the lowering of the overall Global temperature.

THE PARIS AGREEMENT:

The Paris Agreement aims to limit global warming to well below 2 degrees Celsius but to pursue efforts to reach 1.5. To further this aim, the treaty also sets a goal of net 0 global emissions worldwide from 2050. The IPCC hypothesised that increasing the total global woodland area by 24 million hectares annually would store approximately one-quarter of the atmospheric carbon necessary to limit global warming to 1.5 °C above pre-industrial levels.

25 YEAR ENVIRONMENT PLAN:

The UK government was one of many that pledged to the agreement and has since created a 25 Year Environmental Plan. The aims of this plan consist of increasing the rates of clean air and water and encouraging plants and wildlife to thrive through more sustainable use of resources. Furthermore, there is a goal to manage the exposure to chemicals to consequently reduce the risks of environmental biohazards. However, the UK is ambitious in its new targets as pre-existing targets are being stretched and the priority should be on taking action to meet these.

80%

GAS EMMISSION REDUCTION BY 2050

UK'S LONG TERM PLAN:

As it stands, the UK's long-term target is to reduce greenhouse gas emissions by 80% by 2050 (relative to 1990 levels). Yet, there are currently no long-term plans to reduce the emissions from the UK's most challenging sectors: agriculture, aviation and industry. To put this into perspective, in 2019, agriculture produced 10% of the total GHG emissions, 68% of nitrous oxide emissions and 47% of total methane emissions in the UK. Scientist Matt Bell proposes that the UK Government should work with international charities such as Mission Innovation to help treat these difficult sectors.

MISSION INNOVATION

Mission Innovation is a global push collaborating over 10 years of research and development into clean energy, accessible for all. As a by-product, the goal of the Paris Agreement 2015 will be catalysed. The United Kingdom is one of 23 countries that are members of Mission Innovation, investing £200,000,000 in 2013, and since participating in many challenges set out by M.I.

INNOVATION CHALLENGES:

IC4: Sustainable Biofuels is one of the Innovation Challenges presented by Mission Innovation, led by Brazil, Canada, China and India. Transportation and Industrial Production Fossil Fuels contribute to approximately 35% of global GHG emissions. Second-generation biofuels (such as forest or farming residues) are a renewable energy resource that has the potential to massively decrease global GHG missions and be used as a replacement fuel for transportation and industrial production sectors. However, one can only create second-generation biofuels when first-generation biofuels are managed sustainably. Therefore, this challenge aims to accelerate the research and development of Biofuels to achieve breakthroughs in lowering GHG emissions. emissions and be used as a replacement fuel for transportation and industrial production sectors. However, one can only create second-generation biofuels when first-generation biofuels are managed sustainably. Therefore, this challenge aims to accelerate the research and development of Biofuels to achieve breakthroughs in lowering GHG emissions.

Furthermore, successful research into biofuels can offer opportunities to speed up the adoption of sustainable practices in other sectors, for example, forestry and agriculture. The UK's participation in such challenges demonstrates the efforts they are making to attain the target presented by the 2015 Paris Agreement. Although, it is unclear on websites what the UK government specifically did in their participation in these challenges.

BIOFUELS IN THE UK:

First-generation biofuels (stemming from food-based crops) are used as a substitute for petroleum in transport. Biofuels are a finite source, and therefore the UK government is trying to implement the use of second-generation biofuels. These biofuels are productions of forest and crop residues.

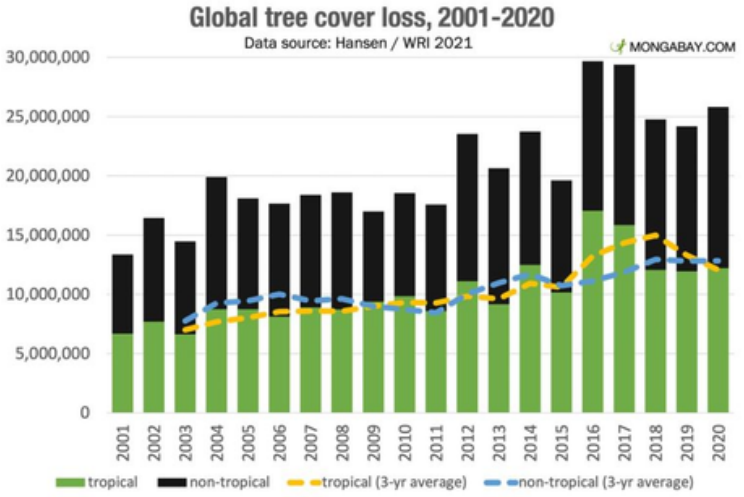
Second generation biofuels use a larger range of feedstocks than first-generation biofuels. these processes feed on straw, wood and waste paper. Second generation biofuels are usually a more efficient and sustainable method than the first generation too, although, their production is limited due to a shortcoming of technology.

MISSION INNOVATION
accelerating the clean energy revolution

GERMAN BONN CHALLENGE

RATE OF GLOBAL DEFORESTATION:

Global deforestation peaked in the 1980s. Half of the world's forest and woodland loss happened between 8000BC and 1900 AD, and the other half occurred in the 20th century itself. We lost so much in the 1900s due to a surplus demand for agricultural land and energy from wood. In the 1980s, 120 million hectares of forest and woodland were lost. However, since then, the rates of deforestation have declined, and in the 2010s, 47 million hectares of woodland were lost. Whilst this may seem a success, this amount of deforestation is still far too high in terms of carbon sequestration. Whilst the UK has participated in certain charities, such as Mission Innovation, they have not pledged to other charities and challenges such as the German Bonn Challenge.



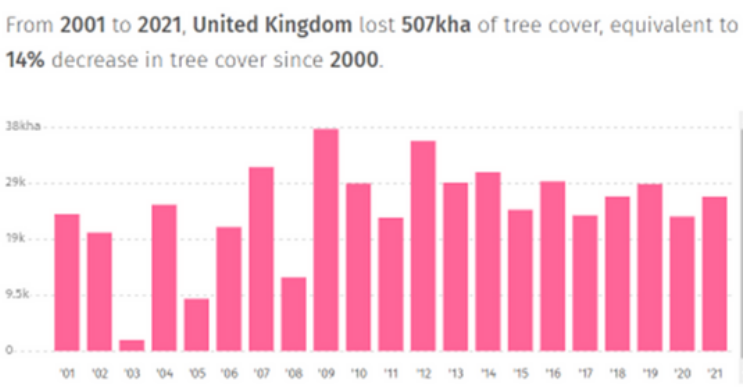
Graph 2.1: Global tree loss 2001-2020

THE GERMAN BONN CHALLENGE:

The German Bonn challenge presents an international goal to restore 350 million hectares of degraded and deforested landscapes by 2030. So far, 210.12 million hectares have been pledged by a variety of countries, however, the UK is not one. Researchers for the German Bonn challenge state that we lose 24 billion tonnes of fertile soil, and 13 million hectares of trees every year worldwide.

This challenge is the perfect opportunity for the UK to recognise its part in the mission against unsustainable deforestation, and use its resources to tackle this major issue.

RESTORE OUR FUTURE
BONN CHALLENGE



Graph 2.2: UK tree loss 2001-2020

THE UK'S FOREST TYPE

CARBON STORES:

Temperate broadleaf and mixed forests store the highest levels of carbon per hectare than any other forest, storing approximately 625 tonnes of carbon per hectare (tC/ha). Comparing this to 250 tC/ha stored by tropical rainforests and the 100 tC/ha stored by boreal forests proves this category of woodland holds vast amounts of carbon. Temperate broadleaf and mixed forest is a title created by the World Wide Fund for Nature that describes forests typically made up of Oaks, Beeches, Firs and Birches. All of the UK's forests fall under this category, presenting evidence that the UK holds a lot of responsibility for storing the world's carbon.

UK FORESTS CARBON STORES:

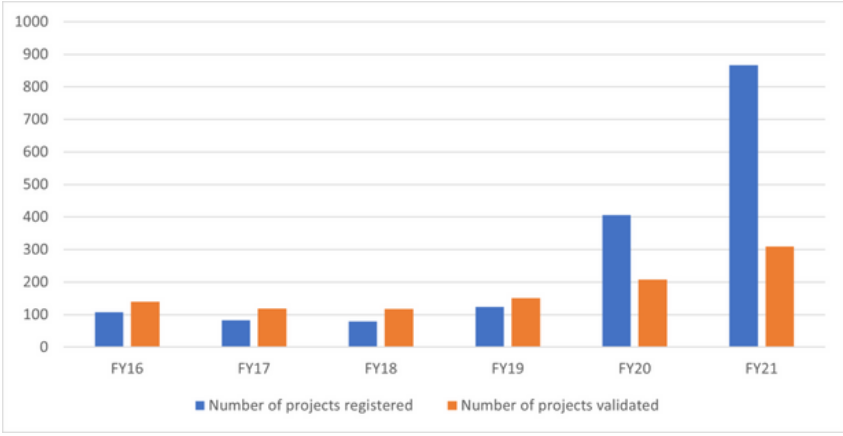
Forestry England has released the following statistics, presenting the vitality of the UK's woodland: trees in the nation's forests store 12 million tonnes of carbon, whilst the soils and leaf litter of the forest floor store 42 million tonnes of carbon. This totals to 56 million tonnes of carbon being stored within the UK's forests. Despite the immense level of carbon storage this forest type holds, it is still the most heavily fragmented forest biome in the world.

Over 95% of UK land carbon stock is found in the soils. This means that a change in land use can negatively affect the carbon storage of the soil, leading to higher carbon emissions.

PROTECTING UK CARBON STORES IN SOIL:

soil carbon accumulates at a decadal pace, but gains can be accelerated when farmland used for crops is converted into woodland or grassland. The protection of soil carbon stocks is crucial to increasing the UK's rate of carbon sequestration.

Populus Plantations are considered to be the most effective use of farmland. This is due to its rapid carbon storage in its initial planting, and its ability to hold carbon for a long period of time. Therefore, it is recommended that the UK converts some of its unused fields (that are more than likely privately owned), and invests in the conversion of their status.



Graph 3.1: Number of projects registering with the Woodland Carbon Code

FORESTRY ENGLAND

FORESTRY ENGLAND STATISTICS:

Forestry England (the UK's largest forestry organisation) has presented multiple plans for growing and maintaining their woodland with different goals. Forestry England owns 27% of the UK's woodland (approx 0.86million hectares). In the next 5 years, Forestry England plans to plant at least 2000 hectares of high-quality woodland, made up of predominantly broadleaf trees. Using a diverse range of species within their woods will create a resilient space that can easily adapt to climate change and maintain a sustainable approach to the economic harvesting of timber. Forestry England has further announced that they aim to reduce greenhouse gas emissions emitted by the organisation to net zero by 2030. Using their land to produce different sources of energy means that by 2030 they will no longer rely on fossil fuels to provide energy in maintaining their forests.

SUSTAINABLE POWER USE:

They plan to source and produce energy from solar, wind and hydropower. However, to successfully reach this goal they must rely on producing their funding. To do this, they rely on memberships purchased by the public, which currently stand at £40 per year for a single forest. Memberships are not enough to fund Forestry England's goal, and therefore they also cut and sell timber to fund themselves too. Forestry England is the largest supplier of Forest Stewardship Council® (FSC®) and Programme for the Endorsement of Forest Certification (PEFC) timber in England, and also sells their Timber under the "Grown in Britain" licensing scheme.

GROWN IN BRITAIN:

Grown in Britain is an independent not-for-profit organisation that identifies wood that had been grown in the UK, and is audited by Control Union. This means that the UK is reducing their transportation fossil fuel rates as we are not relying on other countries to supply us with timber. This is helping the nation reach its targets under the Paris Agreement.

Forestry England states that sustainable forestry is based on working around the lifecycle of trees. They grow and collect seeds that they grow in their nursery, which is a one-hectare glasshouse that grows over 2 million trees per year. The glasshouse is computer controlled and regulates the temperature, light levels and humidity using different factors such as fans, roof ventilation and shade screens to ensure all seedlings grow to their optimal strength.

Forestry England also has an open nursery that grows a variety of broadleaved trees that are moved to a planting site once they have reached optimal size and strength. This is a massive positive as broadleaved forests accommodate the highest levels of carbon sequestration. The next stage of Forestry England's sustainable forestry is planting in the winter when the surrounding trees are dormant. This is so that the roots slowly search for nutrients and water by growing. Due to this, the trees will have a substantial root network to encourage an acceleration of growth, by spring. An example of Forestry England using this sustainable method is in their project, Pleasant Forest. They are turning a 100-hectare field into a forest to increase their woodland.

UK FORESTRY STANDARD

UK FORESTRY STANDARD (UKFS):

Forestry England follows the UK Government's guidelines. These are presented in the UK Forestry Standard, which was produced to maintain the UK's forests. The UK does not have any natural forests, as, during World War 1, the country's natural woodland was diminished to less than 5%. Since then, this standard has been the guidebook for Forest Owners to ensure all woodland is being managed responsibly. Most of the guidelines within this guidebook fall under certain treaties that the UK government has agreed to follow, such as the Paris Agreement (as mentioned earlier), and the Kyoto Protocol.

THE KYOTO PROTOCOL:

The Kyoto Protocol was adopted in 1997, and after a complicated ratification process, came into force in 2005. It only engages developed countries as it recognises that these nations are responsible for the highest levels of GHG emissions in the atmosphere. The protocol asks countries to adopt policies that reduce their GHG emissions to an individual target (respective to their current emissions). The Kyoto Protocol monitors, reviews and verifies all parties involved, and demands transparency from all participants.

FORESTRY MANAGEMENT:

Therefore, under the Forestry Standards, all forestry managements must maximise carbon sequestration during timber production, consider producing their energies within the limits of the site, and avoid removing stumps unless for health reasons after a risk-based assessment determines it is necessary. Forestry management must minimise soil disturbance during deforestation, consider the impacts of soil disturbance if it is caused during harvesting, and dispose of forest products from the site in a responsible way that does not affect the site's potential. When an area of forest is proposed to be felled, it is usually required to have an Environmental Impact Assessment, which will analyse the emissions of greenhouse gases and the practicality of restoration.

ENVIRONMENTAL IMPACT ASSESSMENT:

An Environmental Impact Assessment is governed by the Town and Country Planning Regulations (2017). This assessment aims to protect the environment by granting planning permissions after full knowledge of significant effects is taken into account. If the plan has too many adverse effects on the surrounding environment, permission will not be granted to the applier. The process of the Environmental Impact Assessment is to ensure that the public is given the optimal opportunity to participate in the decision-making procedures and object to any plans that may negatively affect them and their surrounding environments.

Forest Carbon was founded in 2006 and is an organisation that leads in voluntary woodland planting. This organisation pioneered the carbon-financed woodland sector, due to there being no domestic carbon standards at this time. Forest Carbon has since planted over 220 new woodlands, totalling over 10 million trees. The organisation estimates that its woodland stores 2.1 million tonnes of carbon.

AUCHINTENDER WOODS:

Smaller organisations like these are fundamental in catalysing the UK's ability to achieve the goals presented by the Paris Agreement, as they are applying scientific evidence to their practices. They are aware of the vitality of the forest and are adapting their knowledge and skills to store more carbon. Just one case study of this organisation's work is presented in their planting of Auchintender Woods. In 2003, Forest Carbon planted a 91-hectare farm with a productive conifer woodland. Economically, the afforestation massively devalued the land, however, they were able to continue funding this project by selling carbon credits. This is essentially when the government or other organisations fund woodlands in an attempt to mitigate carbon sequestration.

ECONOMIC AND CARBON RATES:

Whilst this forest has provided massive benefits to the carbon stores of the UK and is now an incredibly efficient woodland, it initially dispelled more carbon than it stored. This was due to the fact that the land was previously used for the agricultural farming of crops, resulting in low organic soil. Therefore, the action of machine planting caused negligible soil disturbance. It took many years for the soil to recover. This is an example that future projects should reflect upon, as less damage may have been caused if they had made the decision to manually hand plant the trees. Although the cost may have been greater, it would have allowed the project to meet its purpose in a more efficient manner.

IMAGE 1.1: ALL LOCATIONS OF FOREST CARBON PROJECTS IN THE UK

FOREST RESTORATION

UK FOREST RESTORATION RATES:

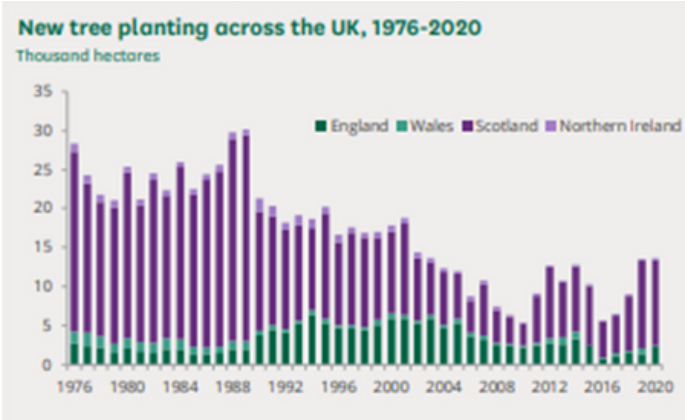
Forest restoration is now a leading factor of the UK climate mitigation strategy, with goals to increase woodland from the current 13% to at least 17% by 2050. Furthermore, companies use this strategy to justify deforestation. For example, Forestry England cut their trees for commercial timber, but justify these actions by replanting seedlings to replace felled trees. In 2020-2021, 13,300 hectares of new woodland were manually planted in the UK. However, numerous factors diminish the simplicity of replanting seeds. The threat of pests and diseases within seedlings is a significant problem that is a growing result of globalisation and climate change.

RISKS OF IMPORTING FOREIGN SEEDLINGS:

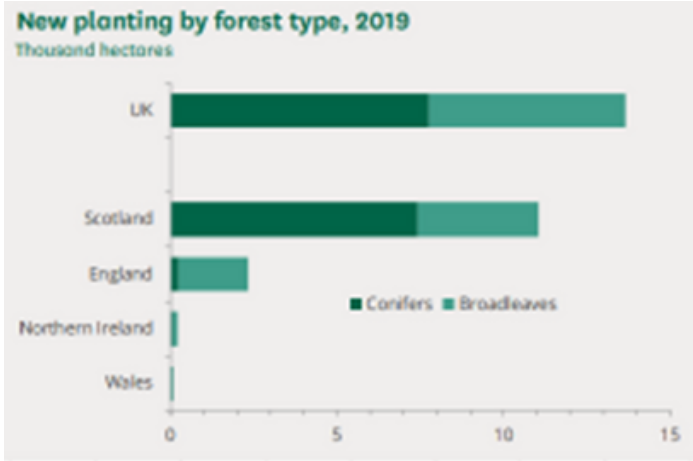
Importing seedlings to grow a more diverse woodland carries a major risk of importing foreign diseases that can infect and kill off a large proportion of English woodland. Smith et al. (2018) estimate that 267 plant pathogens were introduced and established in the UK from 1972 to 2013. These pathogens can have disastrous effects.

DUTCH ELM DISEASE:

For instance, the Dutch Elm Disease (Ophiostoma Novo-Ulmi) is native to Eastern Asia and was introduced to the UK through imported elm logs from Canada. The disease infected and killed 45 million elm trees in the UK. The UK currently imports approximately 80% of its wood and wood products, and therefore the risk of foreign diseases is at an all-time high.



Graph 4.1: Tree planting across the UK over time



Graph 4.2: Rates of tree species planting in the UK, 2019.

BIOSECURE PROCUREMENT REQUIREMENT

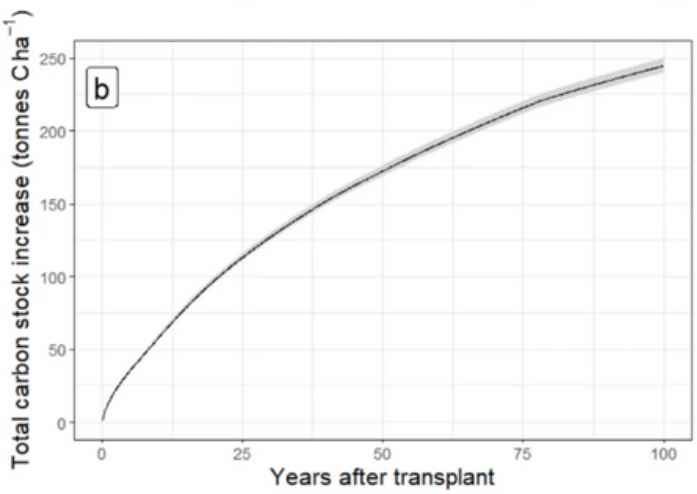
1988 WOODLAND GRANT SCHEME:

As mentioned previously, since WW1 the UK woodland area has increased from 5% to 13% of total land area, meaning the majority of these trees originate from other countries. Furthermore, due to the value and importance of broadleaved trees in regards to storing carbon, broadleaf woods are worth double that of regular conifer woods. This is due to the 1988 Woodland Grant Scheme that values trees on their economic and environmental prospects.

BIOSECURE PROCUREMENT ASSESSMENT:

To combat this risk, the UK has produced a new requirement, that comes into place in June 2022, that requires all applicants for funding under the England Woodland Creation Offer must get their trees from suppliers who are a part of the Plant Healthy Certification Scheme, or have completed and passed the Ready to Plant Assessment, which is audited by Fera Science Ltd. This is known as the Biosecure Procurement Requirement and ensures all suppliers' operational practices comply with the practical terms set out by the Plant Health Management Plan Standard.

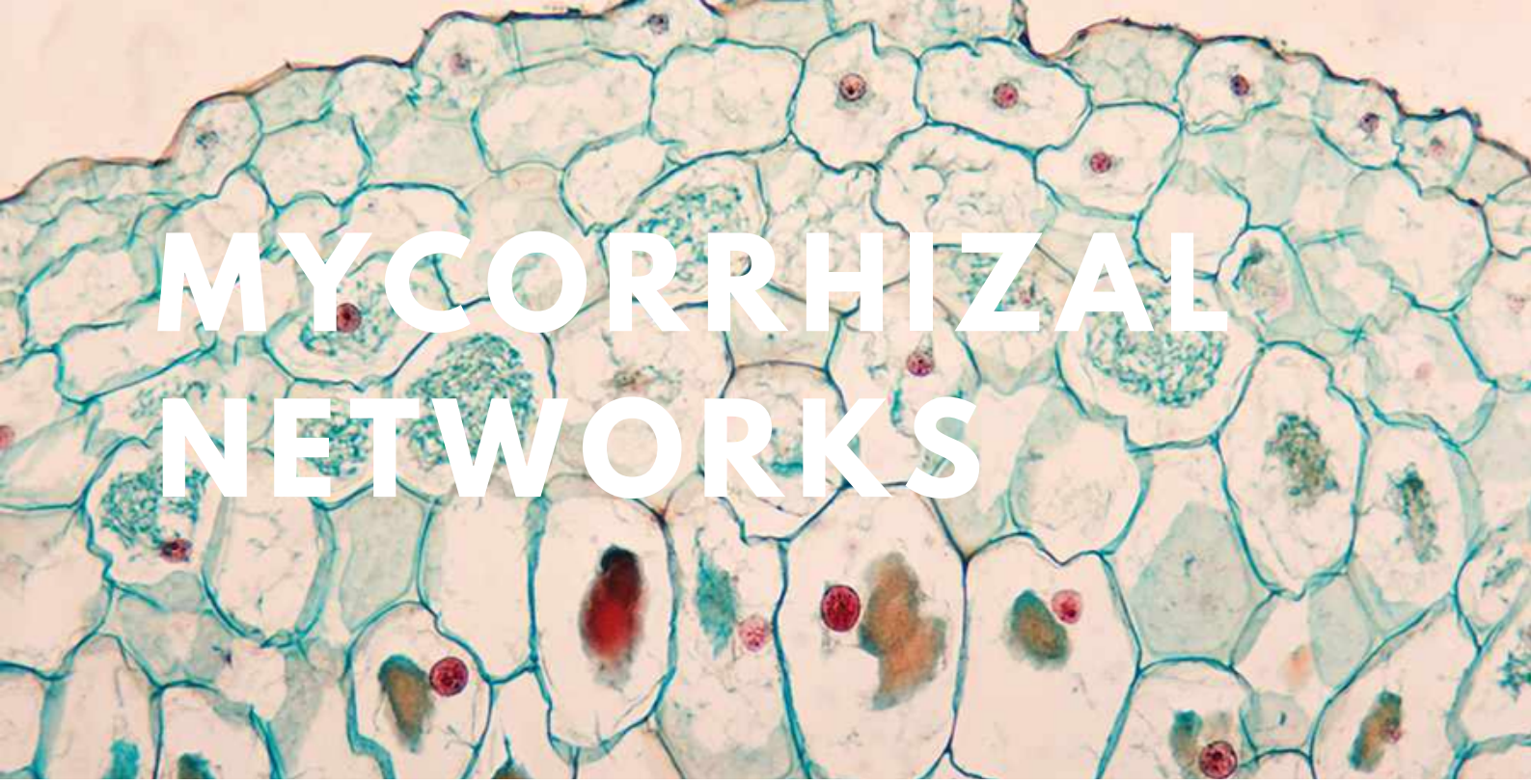
This standard was formed by the governmental Department for Environment Food and Rural Affairs. Diseases within trees do not only risk the lifespan of a tree, but also the amount of carbon it stores. An infected can only store minimal carbon due to the infection of the tree's biomass (trunk, roots, leaves), and therefore is desultory when replacing felled trees. Therefore, the implementation of the Biosecure Procurement Requirement is a pivotal point for the UK in reaching its goals under the Paris Agreement.



Graph 5.1: yearly total carbon storage per tree after planting

"By leading the way with this new pilot, we are addressing the significant and increasing threat of pests and diseases and building a strong biosecurity culture across the country."

- Professor Nicola Spence, UK Chief Plant Health Officer



MYCORRHIZAL NETWORKS

INFINITE BIOLOGICAL PATHWAYS:

Another factor organisations must consider when replanting trees is the effects this action has on pre-existing mycorrhizal networks. Underneath forest floors are infinite biological pathways that connect trees and allow the forest to work as a single organism. Suzanne Simard (2010) discovered the existence of the mycorrhizal network when she conducted an experiment using Pine seedlings and discovered that one seedling root can transmit carbon to another seedling root. Therefore, trees can provide surrounding trees with the necessary nutrients they may be lacking.

INTERDEPENDENT SPECIES:

Since this experiment, more data has been released proving different species of tree are interdependent and share a below ground mutualistic symbiosis called a mycorrhiza, that stems from the threaded roots of fungus. These roots colonise all the living plants in the area, connecting them all in a large network. Underneath a single footstep is hundreds of miles of this mycelium. Mycorrhizal fungal biomass stores significant quantities of carbon, and thus a disturbance in this network can cause excess levels of carbon to be emitted into the atmosphere.

SAPROTROPHIC FUNGI:

Furthermore, the carbon stored in the forest floor and soil is also controlled by the same fungi, particularly the carbon stored in deadwood, leaf litter and soil. Saprotrophic fungi (the largest group of fungi) control the .

Saprotrophic fungi (the largest group of fungi) control the decomposition of dead plant matter and store significant carbon from these dead plant matter into the soil organic matter to prevent the emissions of carbon. Consequently, these fungi must be taken into consideration during plans for deforestation and reforestation. It is very easy to disturb the fungi and their process which would cause immense levels of carbon emissions into the atmosphere.

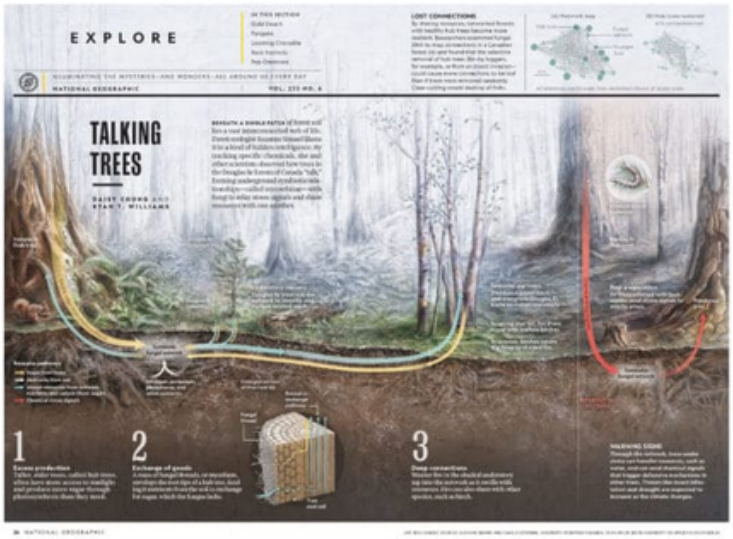


Image 2.1: Illustration from National Geographic on how forests us a mycorrhizal network

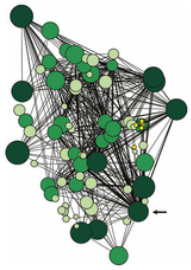


Image 2.2: a network model showing the linkages of a mycorrhizal network in a douglas-fir forest

HUB TREES

HUB TREES AND THE COMMUNITY:

Within these networks are large trees known as ‘Mother Trees’ or ‘Hub Trees’. These are large trees that are the ‘hub’ of the community. When a local smaller tree is struggling and needs resources to survive, the hub tree will transmit said resources through the mycorrhizal network connecting them. Without this network, trees become much more vulnerable to weather, diseases and malnutrition. Therefore we must do all we can to keep these networks intact. During deforestation, the felling of a hub tree causes a complete network collapse, negatively impacting the belowground resilience of trees, leaving them vulnerable and isolated. The death of a single tree has dire consequences for all of the surrounding trees. Even a simple disturbance to the network can affect the hydrological cycles of the network, which can cause massive levels of dieback in the woodland. Therefore, any deforestation can have devastating effects on the woodland.

SUCCESS RATES OF MANUALLY PLANTED SEEDLINGS:

Simard conducted a 2-year long experiment in 2009 to analyse the success rate of manually planted seedlings. Her team of scientists created 160 isolated plots containing both manually planted douglas-fir seedlings and older standing trees, intending to assess the effects the mycorrhizal network has on seedling survival and growth. After two years, the researchers found that natural seedlings received more carbon from their older neighbours than the manually planted seedlings the scientists had planted. This tells us that trees can distinguish and prioritise their kin. The Mother Trees, as Simard coins them, will first support their offspring before any other tree in need. Therefore, it is evident that manually planted seedlings do not have as much of a positive effect as these organisations try to convince the public. Rather, natural regeneration is a far more successful method of reforestation. Yet, this new science is not taken into account in the UK Forestry Standards, which causes more damage and distress to the trees during felling season in the UK.

CASE STUDY:

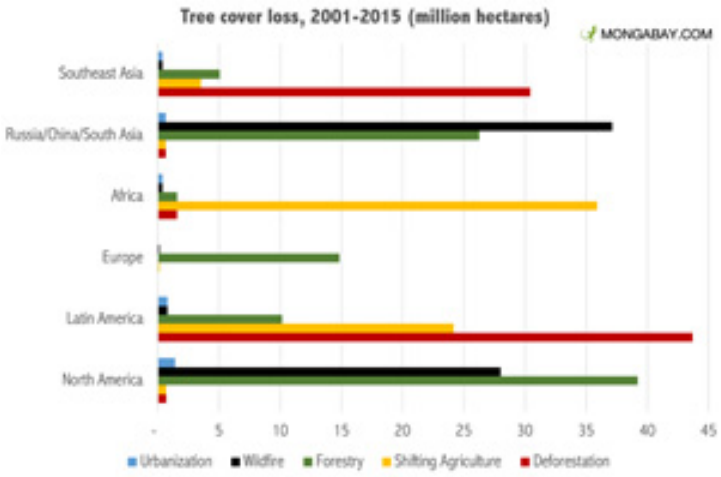
Furthermore, another study was conducted by Wall. C, and Egan. C which analysed how 3 decades of afforestation affected the mycorrhizal networks of the remnant primary forests. After sampling 12 soil plots within remnant and restored forests, they concluded that the original mycorrhizal networks were not restored. Whilst new mycorrhizal networks had formed, they did not allow the forest to work as a single organism, rather it was as though there were multiple separate communities in the forest.

This leaves the woodland more vulnerable than it should be, as certain communities may not store enough of a specific nutrient to support each other and survive. It is recommended that the UK forestry organisations should apply this newly respected scientific research to their practices, although it does not seem that this will be the case for the foreseeable future.

SELECTIVE LOGGING

FIVE LEVELS OF SELECTIVE LOGGING:

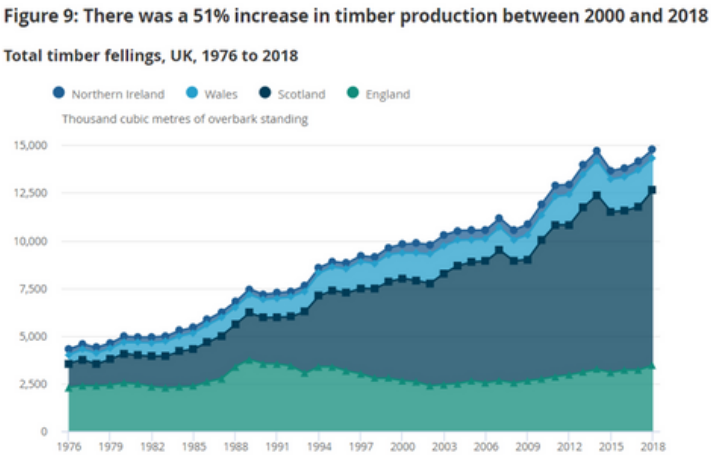
There are 5 levels of selective logging. Each produces its standards of seedling regeneration and carbon losses. Clearcutting is the worst of these 5 levels, offering 0% seedling regeneration and maximum carbon releases. Uncut control, on the other hand, offers 100% seedling regeneration and minimal carbon releases. Unfortunately, it is not possible for the UK to just stop selected logging, as it would take years of protest and policymaking. Therefore, a 60% patch retention would be an ideal introduction to a reduction of clearcutting. It massively reduces carbon losses and helps to encourage higher rates of regeneration.



Graph 6.1: tree cover loss by region

FOUR SOLUTIONS TO PRESERVE MYCORRHIZAL NETWORKS:

Simard presents four simple solutions to combat the destruction of mycorrhizal networks: we must reestablish local involvement in our forests, and preserve old-growth forests. We need to aim for 60% patch retention when felling trees. The partial retention of these hub trees protects the mycorrhizal networks, which consequently protects the biodiversity and soil of the woodland, as well as promotes the natural regeneration of trees. We need to regenerate forests with a diversity of species to create a more resilient patch, and finally, we need to take a more holistic approach to tree felling.



Graph 6.2: Total timber fellings, UK, 1976 to 2018

REPORT CONCLUSION

Overall, it is evident that the UK is taking many stepping stones to achieve the objective to keep the global temperature below 1.5 degrees Celsius, above pre-industrial levels. Agreeing to legally binding treaties such as the Paris Agreement and the Kyoto Protocol prove that the UK is self-aware of its responsibility to store more carbon. However, the government may be taking the wrong steps in efficiently meeting this standard. From the research compiled above, it is recommended that the government prioritise limiting deforestation and maximises afforestation. Rather than focusing their efforts on the transportation of fossil fuels, they should maximise the sustainable harvesting of the woodland that we have. As all UK woodland falls under the Temperate broadleaf and mixed forest category, they have the perfect opportunity to optimise the UK's carbon storage in the greatest form of carbon sink.

Unfortunately, it is not possible for the UK to completely cease deforestation as this would have a colossal negative impact on the country's economic and social state. It would also lead to an increase in the importing of would which has the very high risk of introducing foreign diseases to UK trees. However, a 60% patch retention of woodland during deforestation is currently the most holistic and sustainable approach to deforestation, and this should be adopted by all forestry organisations in the UK.

Furthermore, these organisations should weigh up the risks of machine planting, as it can cause massive carbon exposure through damaged soils. Whilst it may cost more to manually hand plant, this cost can reduce the risk of limiting carbon sequestration. As it stands, the UK has no long term plan to efficiently use the woodland to store carbon, and this may be sabotaging their process of meeting the Paris Agreement.

Therefore, it is obvious that they are neglecting the country's current strengths, and are instead chasing after new innovative (but less useful) concepts.

FURTHER READING:

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