

Climate Change Working Group

Carbon Sequestration and Woodland Creation for Net Zero

October 2023



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Chairman's Foreword

There is no quick fix for climate change, it is a global problem that has been hundreds of years in the making, and everyone must play their part to slow it down.

We want Staffordshire County Council to be leading and encouraging our residents and businesses to do what they can to reduce carbon emissions.

SCC has committed to reach net zero by 2050, in doing this SCC also aims to enhance the quality of life and well-being for our residents and provide a sustainable economy for business.

We found that the Staffordshire County Council is working on a range of initiatives and projects to reduce carbon emissions. The Council is making good progress and has reduced our carbon emissions by 43% since declaring a climate emergency in 2019.

Our focus was to look at carbon capture and carbon sequestration, taking residual carbon emissions that will not be able to be reduced and to look at solutions to mitigate these emissions.

We recognised that we needed to look to the future and widen our focus to the dual crisis of climate change and biodiversity and to follow our priority in the Corporate Plan to tackle climate change, enhance our environment, and make Staffordshire more sustainable.

We feel that the recommendations arising from our report about carbon sequestration and woodland creation will support the action plan and is a positive step forward to meet the council's commitment to achieve Net Zero by 2050.

I thank all the officials who administered the process and to Council officers and expert witnesses from the Forestry Commission, the National Forest Company and Norbury Park Estate, who provided comprehensive evidence to inform our work, they all played a large part in achieving this report.

Finally, I thank elected members for their enthusiasm, support, and insightful enquiries throughout the review and take great pleasure in presenting our findings and recommendations to the Cabinet Member for Environment, Infrastructure and Climate Change to take forward.

Councillor Samantha Thompson

Chairperson of the Climate Change Working Group

Members of the Working Group



Councillor Samantha Thompson (Chair)



Councillor Tina Clements



Councillor Jeremy Pert



Councillor Bernard Peters



Councillor David Smith



Councillor Conor Wileman



Councillor Nigel Yates

Executive Summary

Staffordshire County Council is tackling climate change by reducing its carbon emissions, with an aim to achieve net zero emissions by 2050 across every aspect of our service provision and estate. We have already reduced 43% of our carbon emissions since declaring a climate change emergency in July 2019.

Our working group considered how the Council is tackling climate change and we initially considered a wide range of topics as potential focus for our work and considered areas of the climate change action plan that needed more attention. We found that in order for the Council to meet its 2050 commitment, the Council would need to balance carbon reduction with carbon sequestration to mitigate the residual carbon emissions.

We started to look at what the Council does now and what more could be done. We found that technology was not yet affordable or available to capture and store carbon, but trees naturally take carbon from the atmosphere and store it, therefore the Council could achieve its 2050 commitment by planting 2.5 million trees by 2030.

It takes approximately 20-25 years of growth for a tree to be able to sequester carbon in large quantities, depending on tree species and other factors, and so the window for planting is now. When trees are felled, the carbon remains in the wood. When wood is burnt the carbon is released and therefore the sequestration is lost.

We considered where, what, and how to plant the number of trees required and sought advice from Council officers, the Forestry Commission, Norbury Estate and National Forest Company.

We identified that carbon sequestration could not be looked at in isolation, there is a dual crisis of climate change and biodiversity, and we broadened our approach to consider how to join up some of the individual strands of work in Staffordshire. We looked at what is working well, and we looked at the rural portfolio and benefits of woodland creation.

We understood that woodlands can bring multiple sustainable benefits (social, environmental, and economic) and identified funding and support to develop a plan and actively manage woodlands using the UK Forestry Standard.

We welcomed the visit to Norbury Park Estate. Seeing how the estate was pushing boundaries and providing a vision for what was possible, providing insight into species of trees, managing woodlands, innovative farming, planting herbal leys to reduce use of fertilisers and increase biodiversity was enlightening.

The Forestry Commission evidence opened a new dimension for consideration when planting trees, to consider the multifaceted benefits of woodland creation. We also identified available funding and support to access funding to plant, create, grow, and manage woodland and the legislative tree cover targets which will require the UK to plant more trees.

We understood that changing climate and disease may impact on some species of trees which may fail and there is a need to plant and maintain in the short, medium and long term and funding is currently available to do this.

We welcomed the presentation from the National Forest Company, the National Forest provided an opportunity to see what was possible and proven to be successful. Over 28 years the National Forest (which included woodlands and towns), had added value to the local economy, increased tourism, created 5000 jobs and planted 9.5 million trees. Increased nature, wellbeing, and sequestered many tonnes of carbon.

We considered Staffordshire County Council's existing rural portfolio which consists of country parks, county farms, regenerations sites, landfill sites, maintained schools and corporate property and considered how and where to plant trees and woodlands, we also considered what more could be done to work with County farms and how to improve the capacity for carbon sequestration and soil health and considered the potential benefits of using herbal leys.

We found the evidence gathered through our work enlightening and we believe that the best practice and expert advice given provides an achievable and sustainable way forward which links with real industry leaders and can be transformative in wider terms in Staffordshire.

Trees are the key to unlock our path to net zero, and there is a need to push forward with tree planting. Rather than looking at this in isolation we consider transformation of the area by creating multi-purpose woodlands and creating a concept forest with a pilot of farming, mixed economy, and tourism in Staffordshire.

We have identified an ambitious way forward for Cabinet to work towards, which will meet our net zero commitment and the wider outcomes and priorities of our Corporate Plan to look to support Staffordshire's economy to grow, generating more and better-paid jobs and tackle climate change, enhance our environment, and make Staffordshire more sustainable.

Evidence Gathering

Climate Change Vision

'Staffordshire County Council will achieve net zero carbon emissions by 2050. In doing this, we will enhance the quality of life and well-being for our residents and provide a sustainable economy for business.'

We recognise the importance of climate change and its impact on the residents and businesses of Staffordshire. We have more to do and our strategic plan highlights climate change as one of the key principles. We have pledged to "Tackle climate change, enhance our environment, and make Staffordshire more sustainable."

We are one of 48 Councils appointed nationally under the Environment Act 2021 to lead the creation of Local Nature Recovery Strategies (LNRS). In February 2022 we made a nature recovery declaration, recognising the crisis facing our wild habitats and species and marking its commitment to securing their recovery.

Climate Change action across Staffordshire

As a response to local authorities in Staffordshire announcing climate emergencies the Staffordshire Sustainability Board was created in January 2022.

It brings together Elected Members (Sustainability and Climate Change Portfolio Holders) from the councils in Staffordshire to allow discussion on relevant environmental and sustainability issues, debate matters affecting multiple authorities and decide outcomes and objectives for collaborative projects. It facilitates a collaborative forum, to work together, to influence change and to encourage organisations and individuals to ensure Staffordshire is net carbon zero by 2050.

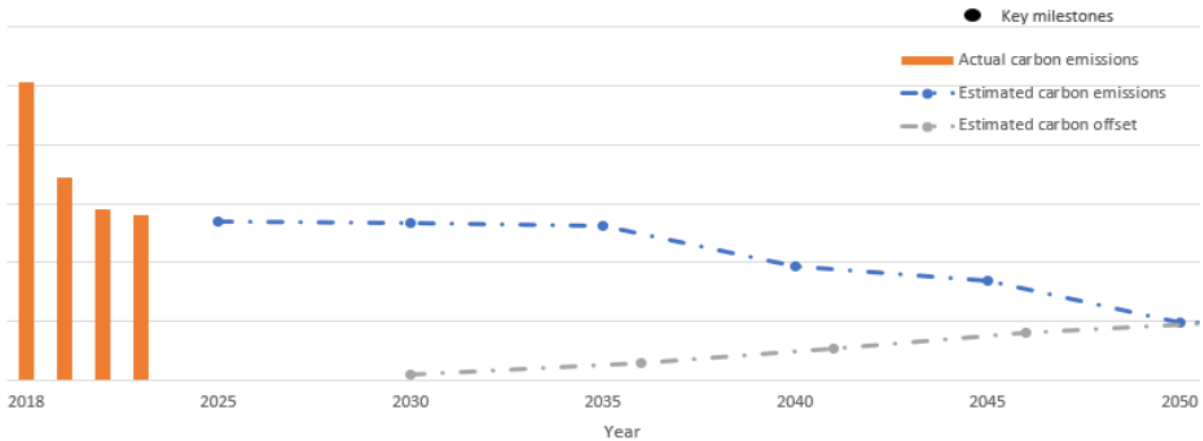
In January 2023, the Board joined with the Staffordshire and Stoke-on-Trent Joint Waste Management Board to improve effectiveness and efficiency of directing and monitoring on the sustainability agenda.

Borough and District Councils have the remit for delivering a wide range of services housing, planning, household waste collection, etc., and each Council has its own climate change action plan, looking at what is needed and how to do things differently to mitigate the impact of climate change, educate people about climate change and the positive impact they can each make if they start to change their carbon footprint.

Staffordshire Roadmap to Zero 2050

The Strategic Development Framework and Climate Change Action Plan (CCAP) details work and projects to reduce carbon emissions as much as possible.

Programme Roadmap:



There are five themes in the CCAP 1: Carbon Reduction 2: Air Quality 3: Natural Environment 4: Waste 5: Behavioural Change.

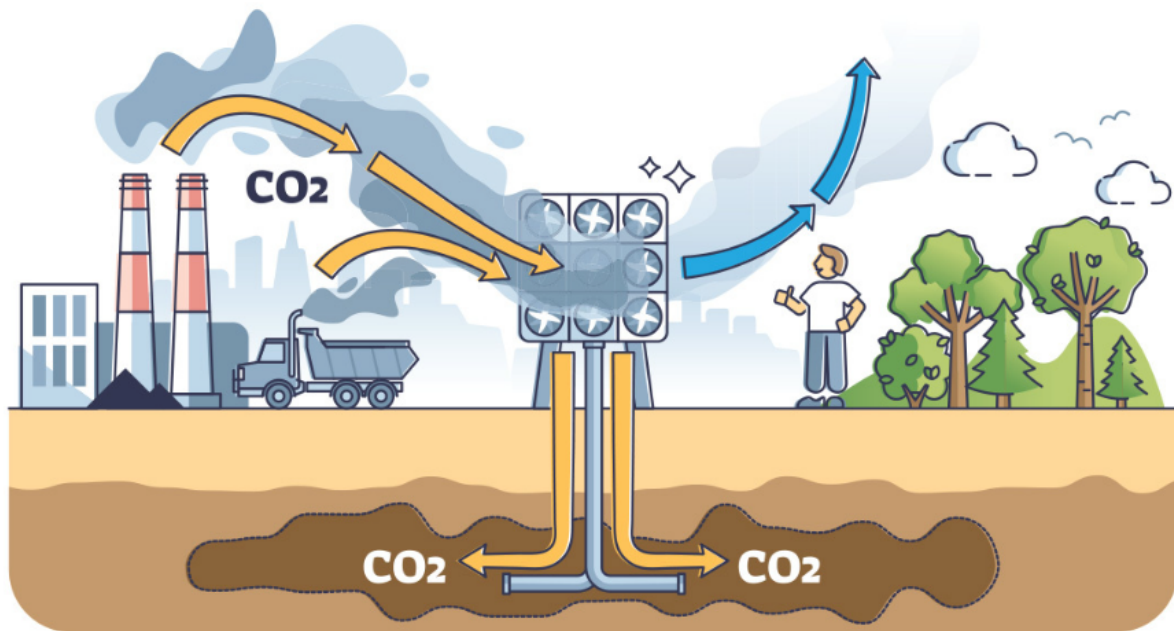
Each of the five themes have actions which will help SCC reach net zero by 2050. The initial years of the five-year action plan place significant focus on gathering and evaluating data to make sure we make the best use of public resources when implementing carbon reduction initiatives, this lays the foundation to make the changes needed. The action plan details work planned and already happening across SCC and the range of initiatives and projects being rolled out to reduce the Councils carbon footprint. Progress of actions is monitored and regularly reported.

The working group considered wider climate change concerns, the impact of weather, food supply, flooding and how SCC could use its resources to offset the residual carbon by bringing together elements of the natural environment - biodiversity and planting trees. To reach net zero by 2050 our focus is carbon reduction, carbon capture and carbon sequestration.

Carbon reduction CR-03	Research carbon sequestration and other potential offsetting projects. Outline options and make recommendations for sequestration and/or offset projects.
Natural Environment NE-01	Commission a study to determine the current sequestration / storage of carbon in natural habitats on SCC landholdings and the potential to increase it through tree planting and habitat enhancement.
Natural Environment NE-02:	Review policies that impact on our management of habitats.

Carbon Capture Options

CARBON CAPTURE



Climate change gases which are emitted go to the atmosphere and contribute to climate change. We considered if the technology currently available to capture and store carbon is an option but found that it is currently expensive and not yet reliable to store carbon long term.

The sustainable way to capture carbon emissions is to plant and grow trees and to store carbon in trees and wood. Burning wood releases carbon back into the air therefore we should use timber to build.

Tree planting considerations

We found that there is a 25–30-year window to plant 2.5 million trees to sequester 10,000 tonnes of carbon annually to offset our residual emissions. This figure may vary, but we recognise the timeframe and need to start planting in Staffordshire.

We identified planting model(s):

Coniferous based model with biodiversity enhancement, through broadleaved planting and open spaces

Broadleaved based model with open spaces

Biodiversity led model focusing purely on habitat enhancement as primary objective.

Further considerations to be factored into planting:

- Which species - fast growing
- How to plant - density of planting
- Threat of plant pathogens - species diversity

- d. The purpose of planting - carbon capture or commercial forestry
- e. Re-look at what type of trees to plant as climate changes occur.

The Forestry Commission, Norbury Estate and National Forest Company all advise planting a mix of species. Broadleaf or conifer, we established that there is gradation of options and variables to try depending on what they are being grown for. Commercial timber providers grow a tree species for a purpose, this commercial forestry provides timber for a range of purposes and the carbon remains stored in the timber. Some decisions about which trees need to be planted is based on the site or on the soil type, this decision is made on a case-by-case basis and is made by the landowner – this can be Council or privately owned land.

Tree cover legislation

- a. Current England woodland cover: 10.2% (1,323 kha)
- b. Tree cover outside woodland: 4.3% (565 kha)
- c. Tree canopy and woodland cover: 14.5% (1,888 kha)
- d. Target: 16.5% (2,149 kha) or 261 kha additional tree and woodland cover – an area the size of Cheshire.
- e. Staffordshire accounts for c.2% of England. If Staffordshire were to play our part this would account for 5,220ha.
- f. Roughly 200 hectares of woodland creation, per year until 2050.
- g. Current rates are less than 20 hectares per annum.

What does this mean over the next few years?

Interim target: increase the tree canopy and woodland cover by 0.26% of land area (equivalent to 34,000 hectares) by January 2028.

This will require 7,500 ha per year by 2025 rising to 10,300 ha per year of woodland creation and agroforestry combined from 2035 to 2050. The assumed split is 7,500 ha of conventional woodland per year from 2025 rising to 9,000 ha per year from 2035 to 2050.

Woodland planting and management

Recognising the enormity of the task ahead to meet the Council's offsetting target and tree and woodland cover target, we identified the need to explore more about tree planting, species planting, growth, and management of woodlands.

We had also identified a wider scope:

- a. the need to look at the wider picture and link tree planting with other work in Staffordshire including the Local Nature Recovery Strategy (LNRS) for Staffordshire

- and Stoke-on-Trent which sets out priorities identified to drive a coordinated action plan to support the recovery of natural habitats and species.
- b. the need to utilise SCC rural portfolio which includes country parks, County farms, regeneration sites, landfill sites, maintained schools and corporate property where more trees could be planted.
 - c. to consider how to make better use of all of the land we have, such as rural, parcels of land, verges, derelict land, and county farms.
 - d. the need to look at the wider benefits of developing a multi-purpose forest. Which includes - Landscape enhancement; Habitat creation (woodland edge); Health agenda; Recreation; Education; Tourism; Timber production; Rural employment.

We identified the Norbury Park Estate in Staffordshire as a site of good practice to visit and invited the Forestry Commission and the National Forest Company to provide expert witness accounts.

Norbury Park Estate Site Visit

We visited Norbury Estate to witness how they had achieved to transform the Estate and offset carbon emissions in just over a decade. They achieved this through:

- a. A woodland planting programme.
- b. Improved woodland management
- c. Creation of a sustainable timber processing business
- d. Conversion of intensively farmed arable land to grassland and herbal leys
- e. A significant investment in renewable energy.

Woodland Creation

- a. Since 2009 a total of 400 acres of new woodland have been planted predominantly with native broadleaf species with the aim that oak would dominate after 100 years.
- b. In 2012 a 60-acre Diamond Wood was planted at Ranton Abbey as part of the Woodland Trust's Diamond Jubilee Woods scheme to celebrate Her Majesty's Jubilee. The young plantation comprises an innovative mix of 60 species planted with resilience to climate change in mind. The plantation was highly commended by the Royal Forestry Society in 2014 in its Woodlands for Climate Change Awards.

Woodland Management

- a. The estate includes 350 acres of mature woodland predominantly of oak planted c140 years ago. A programme of active management was started, and in 2017 the European halo thinning approach was adopted.
- b. c2,000 tonnes of timber are being harvested each year, most of which is processed at the estate's new sawmill. Boards, beams, and cladding are air-dried in a traditional way and kiln finished. Timber of lesser quality is cut into firewood logs or chipped for fuel. The timber processing business is almost entirely powered by electricity generated by 100Kw of solar photo-voltaic panels. Heating for the kiln and for the main house and barns is provided by two wood chip boilers.
- c. The estate employs seven forestry staff under a Head Forester.

Agricultural Land

- a. The estate includes c700 acres of agricultural land comprising arable, pasture and permanent pasture.
- b. On the expiry of existing tenancies all arable land has been laid to grass and licensed to local dairy and stock farmers. In 2018 the decision was taken to improve the capacity for carbon sequestration and soil health by adding herbal leys and this model will be rolled out to all agricultural land using a minimum tillage method over the next few years.

Research

- a. In 2013 Prof Bradwell and Dr Scott (through their family charitable Foundation – The JABBS Foundation) donated £15m to the University of Birmingham to establish the Birmingham Institute of Forest Research (BIFOR) to investigate tree health and the impact of climate change on trees and woodland. The BIFOR Free Air Carbon Dioxide Enrichment experiment is located in Mill Haft, one of the estate’s mature oak woodlands.
- b. In 2018 The JABBS Foundation made a further grant of £500,000 to the University of Birmingham in support of the Action Oak initiative to research the response mechanisms of oak trees to pests and diseases.
- c. An 11-acre field is the location for an experiment looking at soil recovery after a period of intensive agriculture.

The owners had also funded a series of research projects including the BIFOR (Birmingham Institute of Forest Research) project.

Visit to BIFOR – Research Facility

BIFOR is the focus of education and community work, but the estate also works with the local schools, hosts the RFS Teaching Trees scheme and visits from inner city schools with the Country Trust. The Ranton Diamond Wood is open each year and in 2017 on the 5th anniversary of the planting hosted a community open day with the Woodland Trust on the theme of woodland and the environment.

The profile of the estate in the wider forestry community is increasing through involvement in wider industry initiatives such as Action Oak. In 2018 Professor Bradwell was awarded the Peter Savill Award by Woodland Heritage and the Sylva Award by the Royal Forestry Society in recognition of his outstanding contribution to UK forestry.

Forestry Commission Evidence Session

We welcomed evidence from the Forestry Commission which provided the current national inventory of woodlands and trees distribution in Staffordshire by interpreted forest type.

The evidence highlighted the dual crisis of climate change and biodiversity issues. As trees grow, they take carbon dioxide out of the air and store carbon in the tree and roots. The roots, help stabilise the ground and prevent flooding, and the ground and trees create places for insects and animals to live which helps biodiversity. Woodlands and trees also deliver social space at the same time as social wellbeing space.

The holistic benefits of woodland creation include:

Restored landscape	Soil stabilisation	Carbon capture
Reduced pollution	Improved air quality	Increased biodiversity
Health and Wellbeing	Timber and woodland	Food source for pollinators
Flood alleviation	Recreation	Enhanced water quality
Dappled shade keeping rivers cool	Sheltered crops and livestock	Reduced soil and nutrient loss

Legislation supports nature recovery and in Staffordshire we have the Staffordshire Local Nature Recovery Strategy which aims to broker the best solution and outcome in our wild habitats and species and marks its commitment to securing their recovery. When carefully planned taking account of the UK Forestry Standard process, and when actively managed, woodlands provide multiple sustainable benefits (social, environmental, and economic). This will support the recovery of natural habitats and species, and the legislation supports nature recovery.

We had identified that the statutory target for tree canopy and woodland cover in England is to increase from 14.5% to 16.5% of land area by 2050. The 261,000 hectares of woodland are to be proportionately spread across England. The Staffordshire share of that was unknown at this time.

This target aims to support the delivery of net zero emissions and contribute to other outcomes such as habitat restoration and flood regulation. This target sits alongside 12 other targets. Successive Governments have been responsible for actioning the targets.

Benefits of New Woodlands	Climate Change	Nature Recovery
Carbon sequestration	New woodlands absorb carbon dioxide through photosynthesis, helping to mitigate climate change by reducing atmospheric CO2 levels.	Woodlands provide habitat and food sources for various wildlife, supporting biodiversity and enhancing ecosystem health.
Reduced emission	New woodlands can act as carbon sinks, offsetting	Woodlands create corridors and habitats for native

	emissions from human activities like transportation and industry.	species, aiding in their migration and survival.
Air quality improvements	Trees in woodlands filter pollutants from the air, improving air quality in surrounding areas.	Woodlands help filter and purify water, improving water quality and benefiting aquatic ecosystems.
Climate resilience	Woodlands enhance landscape resilience by reducing the risk of erosion, landslides, and flooding.	Biodiverse woodlands are more resilient to pests and diseases, reducing the need for chemical interventions.
Temperature resilience	Woodlands provide shade and cooling effects, helping to mitigate the urban heat island effect.	Woodlands create microclimates that support a variety of plant and animal species, fostering resilience in ecosystems.
Soil health	Tree roots enhance soil structure, fertility, and nutrient cycling, promoting healthy soils.	Decomposing leaves and organic matter from woodlands enrich the soil, supporting diverse plant life.
Recreational health and education	Woodlands offer recreational and wellbeing opportunities & serve as educational resources for people to learn about nature and climate.	Woodlands provide natural spaces for people to connect with and appreciate wildlife and ecosystems.
Economic benefits	Sustainable forestry and woodland management can provide livelihoods and economic benefits to local communities.	Ecotourism, forest products, and sustainable timber can generate income and employment opportunities.

The Working Group found that multi-purpose forestry holds a range of benefits – landscape enhancement, habitat creation, health agenda, recreation, education, tourism, timber production, rural employment, and carbon sequestration.

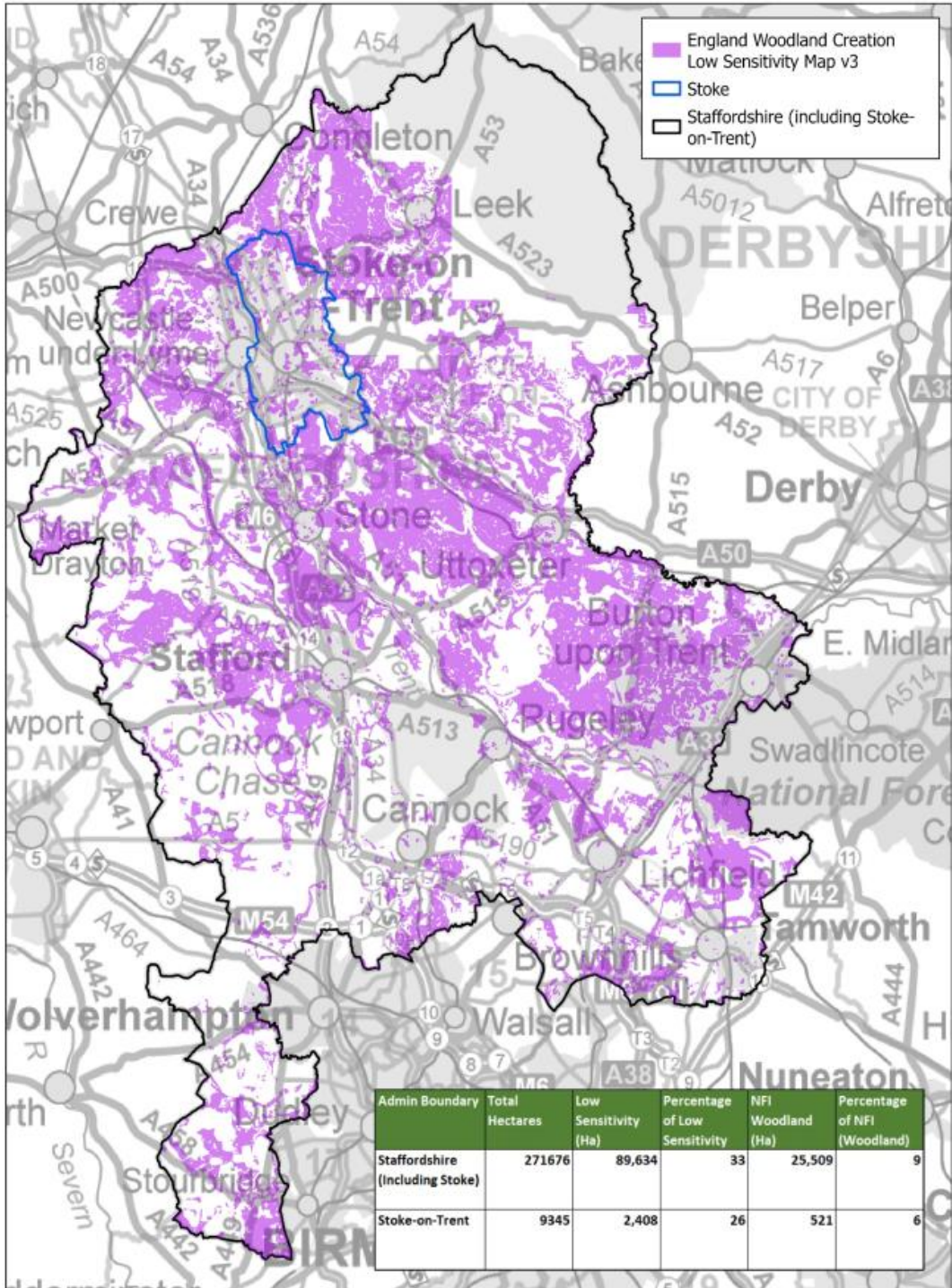
Other factors to be considered:

- a. Biomass renewable energy source – woodlands need to be sustainable, burning wood releases carbon into the air.
- b. Build with wood, carbon is embedded in the building.
- c. Need to manage the woodlands.
- d. Have a range of woodlands – some take longer due to tree growth rate (e.g., Oak).
- e. Plant a mixture of species not more than 70% one species – must conform to Forestry Commission Standard.
- f. Employment opportunity - Forestry Commission staff are all paid staff, roles are in demand, recent woodland development jobs advertised had over 800 applied for apprenticeships (22k salary).

- g. The biggest challenge is inertia about bringing land to a permanent land change status.
- h. Must commit to change, have land availability, and build capacity in the sector, must have people to manage woodlands, maintain at the right time of the year and compete for land.
- i. The Government offer is good, but we must decide proportionally what to do and plan. The Government land use strategy requires the landowners to determine land usage or woodland development. The Government lead target for Staffordshire in 2025 is 7,500 increasing to 10,000 by 2050. To achieve this, we need to also plant trees outside of the woodland. The Fund offers assistance for woodland planting plus individual trees.
- j. Sussex has 20% woodlands and still has farming.

Staffordshire has scope for planting woodland, the Forestry Commission provided a map which demonstrates locations for woodland creation and avoiding sensitivities.

Forestry Commission England Woodland Creation Low Sensitivity Map v3.0 - Staffordshire & Stoke-on-Trent



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We found the map of locations (highlighted in 'purple') showing land at the lowest level of sensitivity to plant and create woodlands in Staffordshire was particularly useful to see where to go first. Member were keen to share this information with District and

Borough colleagues. It highlighted the need to use the land in Staffordshire effectively moving forward. The land highlighted could be used for woodland or building and it was considered that the highest priority land (grade 2 agricultural land), should be for food production, rather than use best quality land to build on.

Forestry Commission funding is available until March 2025. Financial assistance and advice to plan, fund, establish, grow, and manage woodlands.

There are a number of grants available:

- a. Woodland Creation Planning Grant
- b. England Woodland Creation Offer (EWCO)
- c. Woodland Carbon Code
- d. Woodland Carbon Guarantee
- e. Woodland Management Grant

The Forestry Commission have offered to explore with any land the Council would like to plant trees on.

National Forest Company – evidence session

The National Forest is right in the heart of the country, embracing 200 square miles of the Midlands. It spans across parts of Derbyshire, Leicestershire and Staffordshire and aims to link the two ancient Forests of Charnwood and Needwood. With a history of coal mining and heavy industry, the landscape is now that of rolling farmland, ancient forests, and new planted woodlands. Its main towns and villages include Burton upon Trent, Coalville and Swadlincote and the historic town of Ashby-de-la-Zouch.

The National Forest was set up by DEFRA, bids were submitted to transform the area. In this area mines had been closed, there was a need to landscape and a huge amount of regeneration and restoration. The National Forest Company manages the National Forest. There are 40 employees, it covers 6 Borough and District Councils and two County Councils. The NFC works with Staffordshire on local nature recovery, Enjoy Staffordshire, etc.

The Values of the NFC include tackling Climate Change and sustainability, and has confidence that trees transform things and that the National Forest is for everyone. The NFC enables organisations, it works with people, it does not do the work for them but leads, enables, inspires, invests, advises, demonstrates, and promotes. It is a vital role to emphasise the wider benefits of tree planting. It is not just about the trees; NFC also provide grants to landowners.

The work they have done so far is impressive.

- a. In 30 years 9 million trees planted
- b. From 6% forest cover in 1991 to 22% forest cover in 2021
- c. Aiming for 30% forest cover

NFC approach and key drivers:

- a. Creating secure and safer future
- b. Improving the wellbeing of our communities
- c. Facilitating Low Carbon and suitable economic

We found lots of synergy with Staffordshire County Council Priorities; work includes:

- a. Supporting Landowners
- b. Tree planting, some funding is available to support tree planting.
- c. Land acquisition – will consider others to buy land.
- d. Land to do research – can also pass on land with a covenant on it.
- e. Planning policies agreement with planning authorities (6 of them).
- f. Have a good relationship with builders in the National Forest – hedgerows instead of fences.

NFC work with people to develop community woodlands. They work with the community to prepare mapping and a woodland management plan; they apply for funding and engage with local people and schools. The importance of planning to plant the right trees in the right place was emphasised. Community woodlands are local to where people live, they are looked after by local communities, provided positive outdoor learning (forest schools and focus on secondary schools), develop skills and wellbeing, provide recreation and leisure. The outcomes were many for the green economy, greater resilience, regenerative farming, local grown timber, and green jobs supporting the environment and development sectors.

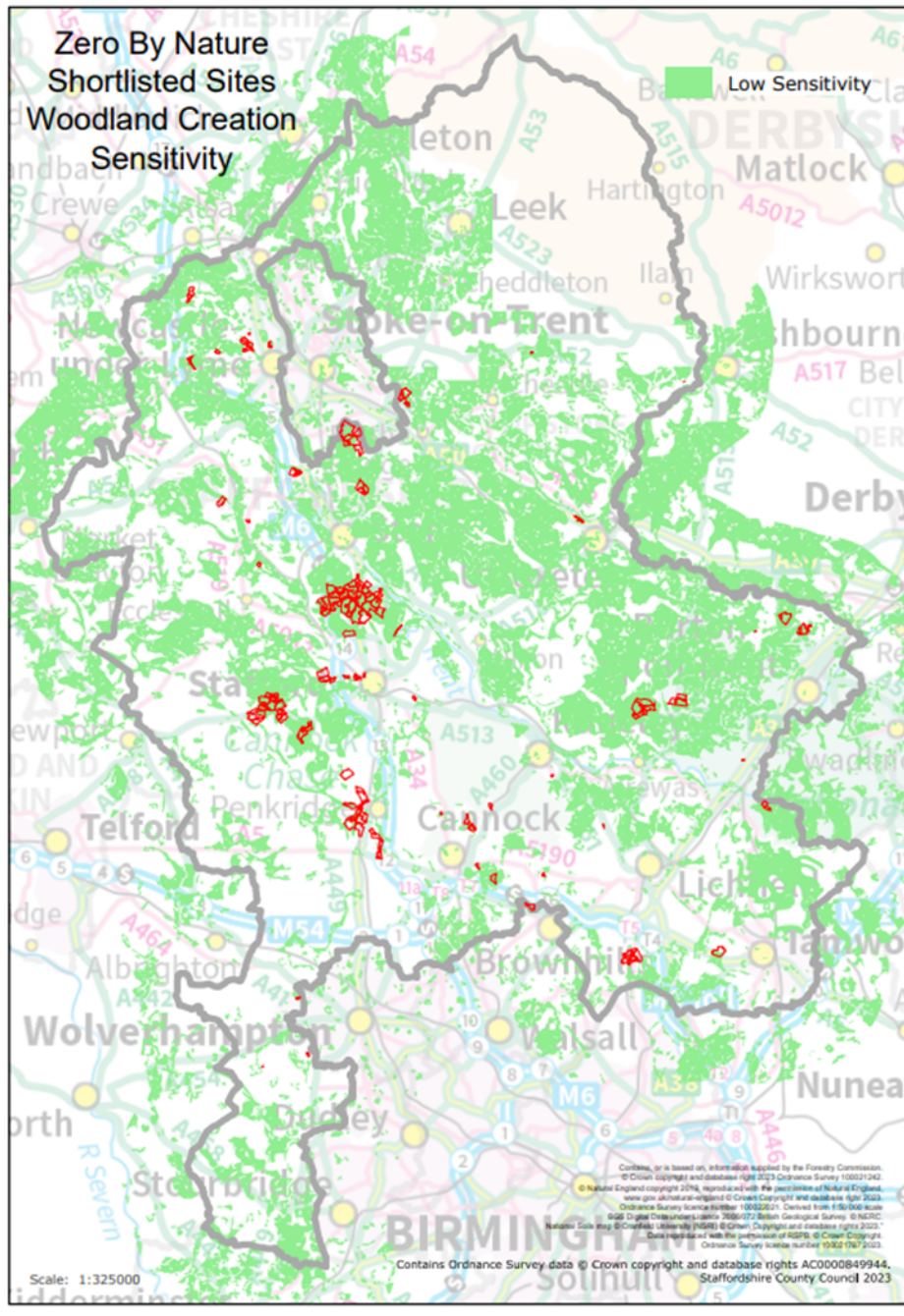
The National Forest provides an opportunity to see what was possible and proven to be successful. Over 20 years the National Forest (which included woodlands and towns), had added value to the local economy, increased tourism, created 5000 jobs and planted 9.5 million trees.

The benefits are highlighted:

- g. Increased nature, wellbeing, and reduced carbon.
- h. Regenerative farming with improved productivity
- i. Growing culture, arts, tourism, and leisure sectors inspired by nature, trees, and woodlands.
- j. Greater resilience in our economy through locally grown timber/wood products and renewable resources
- k. More and greener jobs supporting our environmental, land and development sectors.

Staffordshire County Council summary of evidence session

We considered the Staffordshire County Council Existing Rural Portfolio which consists of country parks, county farms, regenerations sites, landfill sites, maintained schools and corporate property, and viewed the Staffordshire County Council - Zero by Nature shortlisted sites:



The map indicates woodland creation sensitivity. County farms are shown on the map highlighted in red.

We considered that the acres needed for SCC to be totally zero carbon using its own portfolio would depend on the target and the type of trees planted. But it was estimated between 2,500 and 3,000 acres which would be 1,200 hectares. County farms have 2,600 hectares.

We recognised the need to consider planting trees on other small areas of the SCC portfolio land including gaps in hedgerows by roadside, windfall sites on farmland and other land considered was peat land which is of low sensitivity and quarry land. We

understand the need to consider the type of trees planted on highways and how we maintain these trees and trees in public spaces and housing estates. We were reassured that the Forestry Commission carry out aerial surveys to see what woodland and hedgerow is there and where small gaps are.

We understood that planning was vitally important - the right species, the right space to grow trees and to focus on low sensitivity land (highlighted in green on the map).

We understand that there is a need for the Council to engage better with farmers to respond to concerns around land value and tax benefits. It was understood that planting trees on agricultural/ fruit production land could potentially de-value land by 25-30%, but that the benefits of the greener economy, jobs and timber production may level that out. Currently 80% of timber in the UK is imported each year and there is potential to use land in a different way, to build resilience in changing international markets and support rural employment by growing and harvesting trees in the UK. We understood that tax benefits on a working farm would be minimal, benefits were on growing stock value, but that there would be tax incentives for rural areas. We further considered that biodiversity net gain payments were possible where cloughs or small unusable land were planted, and alternative use woodlands offer carbon payments which may help. This is a real shift towards planting a greater number of trees and we are aware that the concerns of farmers need to be an area of focus, to provide information and re-assurance, to encourage further consideration of change in land use but we also recognise that farmers would have to want to change land usage.

We also considered delivery of additional annual carbon sequestration by capital outlay on land and planting trees out of County. Other models were available to look at where land had been leased long-term or acquired cheaper and planting had happened in Wales and Scotland, but the wider benefits would not be realised in Staffordshire and although Forestry Commission had paid a peppercorn rate after the war this was not the situation now. We queried potential for strategic policy development of SCC land in a commercial model, considering tree planting credits based on current figures. It was established that currently there was not an exact figure available, but that GIS can be used to identify and overlay to determine if this was feasible. This was potentially an option to explore.

Carbon sequestration and woodland creation will be important to meet our commitment to net zero by 2025, we found that our climate change action plan is progressing well and is regularly reviewed and updated. We look forward to seeing the Zero by Nature report to further inform this work stream and what this Council plans to do next.

Conclusions

We must mitigate our residual carbon to meet our commitment to reach net zero by 2050.

We found the evidence gathered through our work enlightening and we believe that the best practice and expert advice given provides an achievable and sustainable way

forward which links with real industry leaders and can be transformative in wider terms in Staffordshire.

We have identified an ambitious way forward for Cabinet to work towards, which will meet the Council's net zero commitment and the wider outcomes and priorities of our Corporate Plan to look to support Staffordshire's economy to grow, generating more and better-paid jobs and tackle climate change, enhance our environment, and make Staffordshire more sustainable.

Trees are the key to unlock the Council's path to net zero, and there is a need to push forward with tree planting. Rather than looking at this in isolation, the Council consider transformation of the area by creating multi-purpose woodlands and creating a concept forest with a pilot of farming, mixed economy, and tourism in Staffordshire.

This report provides a fresh perspective to explore how the Council use its Countryside Portfolio and explore woodland creation and farming in a leadership role and to work to meet the Council's climate change and biodiversity targets, develop skills, economy, and the wider agenda.

The Council has an opportunity to work with agricultural colleges and universities to develop skills in forestry and to plant and use a forest which can grow the green economy in Staffordshire.

The Council has potential for growth in its tourism offer and opportunity to increase visitor accommodation, forest lodges and glamping. Increasing well-being of Staffordshire residents and more diversity in the County tourism offer.

Staffordshire County Council is already moving forward with multiple workstreams to tackle climate change and biodiversity matters as demonstrated in the Climate Change Action Plan and we are aware of some specific constraints within the current policy framework that may need to be re-visited, there is more work to do.

We are assured that in a recent climate change consultation, feedback had shown that SCC is a trusted source of knowledge. As landowners we recognised the need for SCC to commit to lead the way by locking its carbon usage in its own assets.

We welcome Cabinet considering our report, we feel that our recommendations need to be ambitious recognising the significance and the speed required to progress them, but we also recognise more work is needed to:

- i. Identify land in the SCC rural portfolio that sits within the Forestry Commission low sensitivity areas of Staffordshire.
- ii. Complete an options appraisal for a given area of land use change, exploring options through agricultural diversification, woodland creation, and other alternatives to include financial value through carbon sequestration.
- iii. All benefits to be identified to give a balanced financial appraisal over a timeframe 2030-2070.

Staffordshire County Council values are 'ambitious courageous and empowering'. We are confident that this Council can lead the way for Staffordshire and that the recommendations coming from this work will provide a base for meeting our climate

change commitment, biodiversity enhancement and toward developing a plan for a Country Park for Staffordshire, developing skills, and improving the green economy in Staffordshire.

Recommendations

- 1) To consider the report of the Climate Change Working Group.
- 2) To recommend the following to Cabinet:

Carbon Sequestration

- a. That the Cabinet be requested to consider the amount of carbon sequestration that can be achieved on SCC land to mitigate residual carbon emissions from SCC's carbon footprint that will be present in 2050.
- b. That Cabinet consider how to progress planning for tree planting, woodland creation and to shape the concept model to plant a Staffordshire Forest taking into consideration comments made in the report conclusions.
- c. That Cabinet be requested to consider cessation of disposal of Council owned land /County farms already on the asset disposal list until it has been considered for inclusion in the concept model.

Woodland Creation

- d. That the Cabinet take advantage of Forestry Commission Funding identified by the working group which is available until March 2024 and apply for the planning, funding, establishing, growing and management of Woodlands at the earliest opportunity.
- e. That the Cabinet undertake to develop a delivery model to plant a Staffordshire Forest, not only to mitigate our carbon emissions but also to realise the wider benefits of woodland creation and, explore the wider benefits and partnership opportunities with organisations like Forestry Commission and National Forest Company (FC/NFC).
- f. That the Leader and Cabinet Members be requested to engage with the District and Borough Councils at the Leaders Board and Sustainability Board to consider the concept model for a Staffordshire Forest, to invest in woodlands as a way to tackle the dual crisis of climate change and biodiversity.

Acknowledgements

- a. Norbury Estate
- b. Forestry Commission
- c. The National Forest Company

Scope of the Working Group

- a. To identify mechanisms to mitigate carbon emissions in Staffordshire through sequestration and offsetting.
- b. scrutinise/offer challenge to the Cabinet on sequestration to ensure the Council are doing all they can to ensure that it achieves its commitment to be net zero by 2050.
- c. scrutinise any plans/strategies that are developed on sequestration, with particular focus on timescales to achieve our aims.
- d. scrutinise SCC departments to see whether their strategies are aligned with sequestration.
- e. Scrutinise and identify the wider benefits to Staffordshire that sequestration schemes in the County may bring to resident and businesses.

Methods of evidence gathering

- a. Research secondary data
- b. Reports and presentations at meetings
- c. Evidence gathering by the Working Group - primary data
- d. Site visits – Norbury Park Estate and BIFORS
- e. Expert witnesses – Forestry Commission and National Forest Company
- f. Consultation with the Cabinet Member for Environment, Infrastructure and Climate Change who also attended a number of working group meetings as an observer and also the participated in the Norbury Park Estate site visit.

Visit to Norbury Park Estate – Group photo

