

**Environment, Economic Growth and Transport Scrutiny Committee**  
Meeting to be held on Thursday, 25 April 2024

Electoral Division affected:  
(All Divisions);

**Corporate Priorities:**  
Protecting our environment;

## **Carbon Capture through Nature**

Contact for further information:  
Debbie King, Tel: 01772 534195, Head of Environment and Climate  
debbie.king@lancashire.gov.uk

### **Brief Summary**

The report provides an update on the council's activity to capture carbon through nature projects, including tree planting, peatland restoration and trials of biochar to store carbon in soil.

### **Recommendation**

The Environment, Economic Growth and Transport Scrutiny Committee is invited to formulate any recommendations to the Cabinet Member for Environment and Climate Change.

### **Detail**

Carbon capture, or carbon sequestration as it is often referred, is the process of removing carbon dioxide (CO<sub>2</sub>) from the atmosphere and storing it. The natural environment plays a key role in carbon sequestration storing CO<sub>2</sub> in carbon sinks such as forests and woodland, soils, grasslands, and water bodies. Speeding up the rate of carbon sequestration in natural systems is one way to mitigate the impacts of climate change.

The council has a long history of delivering nature projects and has been very successful in securing external funding to deliver projects that capture carbon and provide a range of benefits including habitat creation, increased biodiversity, resilience to flooding and benefits to health and wellbeing. This report provides an update on three key areas of activity: tree planting, peatland restoration and the trials of the use of biochar.



## Tree Planting

The Treescapes programme is a collaborative project between Lancashire County Council, Blackburn with Darwen Borough Council and Blackpool Council. Led by the County Council £300,000 was secured from the Government's Woodland Creation Accelerator Fund to establish a new team to remove the barriers to woodland creation and tree planting leading to the creation of 170 hectares of rural woodland plus 30,000 trees (urban and semi-urban) over two years. The team is working with partners such as the Woodland Trust, Groundwork Trust, Ribble Rivers Trust, and Lancashire Wildlife Trust, along with district councils, town and parish councils and private landowners to identify tree and woodland planting opportunities and to seek funding for their delivery.

Since the programme was established in June 2023 eight successful bids to various DEFRA and Forestry Commission grant schemes have been made, generating a total of £303,000 for tree planting projects. The first planting season has just been completed delivering the following:

- Funding from the Local Authority Treescapes Fund has delivered planting of 97 highway trees. This includes replacements for all recently felled roadside trees in east Lancashire districts and 500 whips (slender, unbranched bare root trees grown from seed) at a site on the A59 near Clitheroe where Ash Dieback was first confirmed to be present in the NW of England.
- Funding from the Urban Tree Challenge Fund for planting of 90 trees in urban areas.
- A grant of over £150,000 from the Coronation Living Heritage Fund will deliver up to ten ['Miyawaki'](#) micro-woods and up to 50 community orchard projects. Miyawaki woods are named after Japanese botanist Akira Miyawaki who found trees naturally grew much faster if planted closer together. The method has been tested over the years and has shown the resulting forest can be 30 times denser, with plant growth 10 times faster – thereby absorbing carbon faster. Six pilot projects have been delivered this planting season (three micro-woods and three orchards), with the remainder to be delivered in 2024/25.
- In addition to the larger grants, the team has project managed and delivered over 3,000 trees for parish and town councils, community groups and schools through small grants from funders including The Tree Council, Woodland Trust, The Conservation Volunteers, Lancashire Environmental Fund and The Ribble Rivers Trust. 15 small projects have been successfully delivered this planting season.

In total 30 projects have been delivered with 6,230 trees planted this season. This is despite the limited time the team had to identify sites, secure funding, and prepare for the 2023/24 planting season. This was due to delays in the initial Woodland Creation Accelerator Fund bid being confirmed successful by DEFRA and the subsequent delay in being able to carry out the recruitment process because of this.

Currently there is no reliable methodology for predicting the amount of carbon sequestration from urban trees, which is what has been planted this year, so an



estimate of carbon saving has not been provided. There is, however, a methodology for estimating carbon saved from woodland creation, and this approach will be followed for the larger scale woodland planting programmed for 2024/25.

The programme is currently being prepared for delivery in the 2024/25 planting season (October to March). The remainder of the Coronation Living Heritage Fund projects will be delivered with a further 6,000 trees planted in seven Miyawaki micro-woods, and through a grant which will be made available to parish and town councils, schools, and community groups to enable them to purchase trees for the creation of their own orchards. The highway tree replacement initiative will continue, with an application to the Local Authority Treescapes Fund to support this.

New and previously used funding streams will be exploited including a large bid to the Forestry Commission for the Urban Tree Challenge Fund. Larger scale woodland planting will be supported by the England Woodland Creation Offer (EWCO) and Woodland Trust's Grow Back Greener scheme. Sites of interest currently identified for these funding streams have the potential for planting of over 64,000 trees. Funding for the Treescapes team will continue until June 2025, currently there is no confirmation that the Woodland Creation Accelerator Fund will be extended, and any opportunities to secure funding to continue the programme are being explored.

Tree planting is also being built into the design at key county council developments, with the planting of 3,000 trees at the Samesbury Enterprise Zone concluding in March as part of the landscaping and ecology work on the site. There is an ambition for the Enterprise Zone site to be exemplar in its approach to mitigating against carbon emissions and wider ecological impacts. Going above the required mitigation, the development of Edith Rigby Way has provided 1000 extra trees, over 13,000m<sup>2</sup> of woodland and over 10,500m of extra hedgerow.

## **Peatland Restoration**

Peatlands are the UK's largest on-land store of carbon, holding three times as much as woodlands nationally. However, peatlands can also be a source of emissions if damaged or managed incorrectly. Restoration of peatland is therefore a valuable and cost-effective way to help limit climate change. 14% of Lancashire's area contains upland peat, providing the potential to capture thousands of tonnes of CO<sub>2</sub>.

Between 2011 and 2021 upland peat restoration projects in the Forest of Bowland National Landscape (recently renamed from the Area of Outstanding Natural Beauty) has restored 755 hectares of peatland, saving a projected 174,369 tonnes of CO<sub>2</sub> equivalent by 2050.

Since January 2022 our strong partnership in Bowland has secured over £3.7m from the Nature for Climate Peatland Grant Scheme leading to the restoration of a further 406 hectares and saving an estimated 93,500 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) by 2050. Delivery is underway as follows:

- Funding of £230,000 was secured from the Nature for Climate Peatland Discovery Grant Scheme to survey over 12,000 hectares of the Bowland Fells Sites of Special Scientific Interest (SSSIs) resulting in the creation of 22 restoration plans.



- A successful application to the Nature for Climate Peatland Restoration Grant, which provides funding for the restoration plans to be implemented, secured £1.4m to undertake restoration work across four peatland sites in the Bowland Fells. This work has now completed restoring a total area of 166 hectares.
- A second application to the Restoration Grant in 2023 secured £2.3m for work at a further five sites between January 2024 and April 2025, restoring a total of 240 hectares. To date 60 hectares has been restored with the remainder of the work to be completed between September 2024 and April 2025 after the nesting season. In addition to the restoration grant around £750,000 in match funding has been provided by landowners and the private sector.

Details on a potential extension to the Nature for Climate Peatland Grant Scheme to cover April 2025 to April 2026 have yet to be confirmed. Due to the survey work already completed through the Discovery grant, restoration plans are in place and ready to be submitted for restoration funding should an announcement be made.

The Forest of Bowland team is also supporting work to secure funding to scale up the work of the [Lancashire Peat Partnership](#), and work is underway 'opportunity mapping' peatlands in the Rossendale area / Irwell catchment ahead of a desire to up-scale Natural Flood Management in the area. Work also continues with the [Great North Bog](#) to secure private sector funding to support peatland restoration.

### **Biochar – carbon capture through soil**

The County Council has been part of the [AgriCaptureCO2 Project](#), a 3-year EU Horizon 2020 funded project looking at developing robust and affordable solutions to measure carbon capture in soil. As the only public body participating in the project, the aim was to investigate how the public sector can learn from regenerative agricultural practices, and how these can be applied to public land. Funding from the project has enabled us to trial a pioneering grass and soil management technique using biochar and to assess the merits of this approach to carbon capture.

Biochar is a carbon-rich, charcoal like material made from plants. It is very stable and has the potential to remain in the soil for thousands of years, effectively locking up carbon. It also has potential benefits for soil structure, moisture and nutrient retention which can enhance crop and tree growth. A key strength of biochar is that it can be applied whilst still retaining the existing functionality of the land.

Two County Council owned sites were identified for field trials, Chisnall Hall (Chorley) and Midgeland Farm (Fylde/Blackpool), with non-waste biochar to be applied at 3 hectares of grazing land at a rate of 10 tonnes per hectare at each site. Five hectares will then remain under existing agricultural management, with one hectare at Chisnall Hall planted with trees.

Two applications of biochar have now been applied at Chisnall and the tree planting has been completed. However, wet weather and poor ground conditions during the available time for spreading, outside of grass cutting, meant a second application at Midgeland Farm was not possible during 2023. A final application at both sites is scheduled during 2024. Soil sampling was undertaken prior to biochar application to



give a carbon baseline and is being repeated annually after each application. The different rates of biochar application at the two sites will enable us to compare the soil carbon content in relation to the amount of biochar applied.

Through participating in the AgriCaptureCO<sub>2</sub> project we have formed a relationship with the UK-based [Biochar Demonstrator Project](#), and the project researchers from Bangor University are conducting the soil analysis. At the time of writing, we do not have the results of the soil analysis, however, the working assumption is that 1tonne of biochar is equivalent to ~3tonnes of atmospheric CO<sub>2</sub><sup>1</sup>. On that basis the two biochar pilot sites have sequestered 180 tonnes of CO<sub>2</sub> since 2022, with the potential to increase this to 330 tonnes by the end of 2024. Around 405 hectares of the County's Council's estate is managed under agricultural licenses. Applying biochar at 10 tonnes/hectares to this land would equate to around 12,000tonnes of atmospheric carbon permanently stored each year.

By carrying out the field trials we have gained valuable understanding of the regulatory issues around biochar use and useful insights into practical issues around handling and applying biochar. The AgriCaptureCO<sub>2</sub> project finished in December 2023, however, we continue to work with the UK Biochar Demonstrator Project on the further application at Lancashire sites during 2024 and to assess the impact on soil functioning through multiple cropping cycles and seasons.

The UK market for biochar is currently not well developed and there is limited UK-based production. An aim of the Lancashire biochar trials is to help demonstrate that there is a viable market for the product which will encourage the establishment of local production. Virgin timber arising from felled trees is one potential source and, subject to the establishment of a suitable national regulatory framework (like that for PAS 100 compost), the potential exists to investigate options for using green waste collections as a biochar feedstock. We will continue to work with the Biochar Demonstrator Project to explore opportunities for local production.

## **Consultations**

N/A

## **Implications:**

This item has the following implications, as indicated:

### **Legal**

There are no significant legal implications detailed in the report.

### **Financial**

The report does not contain any specific financial implications. All projects and activity reported on are being delivered within existing budgets and funding secured

---

<sup>1</sup> Atmospheric carbon removal via industrial biochar systems: A techno-economic-environmental study. <https://www.sciencedirect.com/science/article/pii/S0959652622032383>



from external grants. Any requirements for additional funding to support future delivery will be presented to Cabinet for approval.

### **Risk management**

The report provides an update on projects underway and opportunities for future development, however no new proposals or recommendations are made, there are consequently no risks of significance associated with the report.

### **Local Government (Access to Information) Act 1985 List of Background Papers**

Paper	Date	Contact/Tel
-------	------	-------------

None

Reason for inclusion in Part II, if appropriate

N/A

