centre for sustainable energy

CLIMATE EMERGENCY SUPPORT PROGRAMME

Tree Planting and Land Management

Overview:

- **Tree planting for carbon sequestration**
  Why trees are seen as the solution to saving the world (and why they are not).

- **Planting trees on council owned land**
  Where, what and how to plant.

- **Management of council owned land**
  Managing land to enhance nature and lower your carbon footprint.

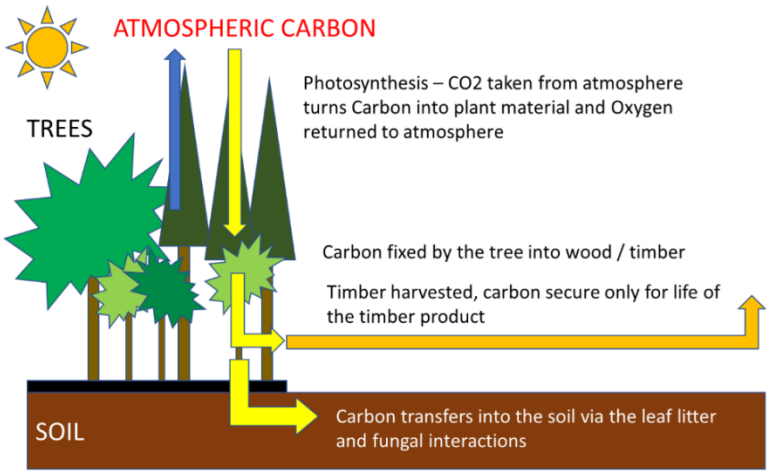
- **Encouraging community tree planting**
  Encouraging and supporting land owners to take part.

- **The role of neighbourhood planning**
  Utilising Neighbourhood Planning for nature restoration..

Tree Planting for Carbon Sequestration

Why trees are seen as the solution to saving the world (and why they are not)

In very simplistic terms trees take in carbon dioxide from the atmosphere during the process of photosynthesis. The tree takes CO_2 in from the atmosphere and turns the carbon into plant material and returns the oxygen to the atmosphere. In a mature forest carbon is fixed by the tree into timber (in a mature forest this accounts for 17% of the 'forest carbon'), this timber can then be harvested and the carbon secured for the life of the timber product. Carbon also transfers into leaf litter (5% of forest carbon) and below ground biomass via fungal interactions (6%). The remaining **72% of forest carbon** is stored in the soil.



Source: Kevin Stannard, Forestry England (data from Forest Research).

Although (mature) trees have a powerful carbon sequestration power, **trees alone can't save the world.**

For example, the UK has a surface area of 24.2 million ha, 3.2 million ha is already wooded (13%), 8% is built-on and 56% is enclosed pasture and arable land[1]. This leaves only 23% (5.5 million ha) of land available to plant. In 2018 the UK emitted 509 million tonnes of carbon[2]. The UK's current total forest carbon stock is 639 million tonnes of carbon, meaning to compensate for just one year's worth of UK emissions you would need to plant 2.5 million ha of new woodland (and that is ignoring the time it takes to build up forest soil carbon).

However, planting trees remains a key tool in reaching net-zero, the Committee on Climate Change has recommended that woodland increased from 13% in the UK to 17%, with 30,000 ha of woodland being planted annually - bringing us closer to the EU average of 37% cover. However tree planting should not be treated as a magic bullet to allow society to carry on with business as usual[3].

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[1] Kevin Stannard, Forestry England (data from Forest Research).
[2] Kevin Stannard, Forestry England (data from Forest Research).
[3] BBC, 2019. Climate Change: Tree planting rise 'needs to happen quickly'. https://www.bbc.co.uk/news/uk-england-47541491

It is also important to note that as well as locking up carbon, trees help to mitigate the extremes of climate change, along with a whole host of other co-benefits. Not only do trees improve soil quality and stability, reduce the impacts of flooding, offer shading and absorb excess heat, they also provide vital habitats for wildlife and landscape structure and linkage. Trees also help to improve air quality and provide mental health and wellbeing benefits, ultimately making a community a nicer and safer place to live.

Slowing the flow scheme in Yorkshire

A £500,000 tree planting scheme in Pickering, North Yorkshire which planted 40,000 trees is reported to have reduced peak river flow by 20% when 50mm of rain fell in 36 hours, saving many local homes and the town museum from flooding.

After the town experienced four serious floods within 10 years, the scheme was set up in 2009. In addition to the planting of trees the scheme included 300 "leaky" dams and the restoration of heather moorland, all intended to reduce the river's peak height by slowing the flow of incoming water. The project cost the government £500,000, significantly less than a proposed flood wall and much less than the £7 million of damage caused by the 2007 flood.

Source: Guardian, 2016. https://www.theguardian.com/environment/2016/apr/13/500000-tree-planting-project-helped-yorkshire-town-miss-winter-floods?CMP=Share_iOSApp_Other

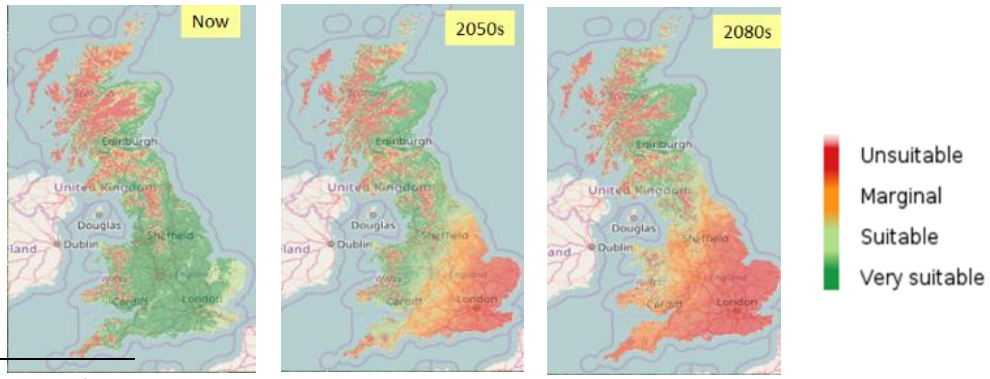
Green Spaces key element of people's mental health

There is strong evidence that green spaces are a key element of people's physical and mental health. Using data from 5,000 households over 17 years researchers from Exeter University found that people reported lower levels of mental distress and higher degrees of life satisfaction when they were living in greener areas. A New York study found that asthma rates among children aged four and five fell 25% for every extra 343 trees per km^2. The presence of street trees was linked with a 29% reduction in early childhood asthma.

Source: BBC, 2013, Green spaces can 'save NHS billions' and Lovasi G. S. *et al.*, 2008. Children living in areas with more street trees have lower prevalence of ashtma.

When considering planting trees it is really important to plant the right tree, in the right place, for the right reason. However, it is not as simple as planting native or continuing with traditional choices. Our changing climate demands thought, innovation, foresight and **ACTION**.

For example, a rise in temperature may mean native species are no longer appropriate for the UK's climate. Even if fully implemented, current global commitments to reduce emissions will lead to an estimated 2.7°C average annual temperature rise by 2100. In 2100 sessile oaks planted today will be 80 years old and acting as superb carbon sequesters, however the diagram below shows that under projected temperature increases much of the land currently suitable for this species will be become unsuitable in the UK by 2100[4].



[4] Kevin Stannard, Forest Research/ Ecological Site Classification Tool.

It is also worth noting that, contrary to popular belief, wildlife habitats in woodland are more closely related to the woodland structure than the exact species of tree.

Don't forget about wetlands and bogs! They have a HUGE carbon sequestration power. Protect your bogs.

Planting Trees on Council Owned Land

Local councils can help to increase tree cover by planting more trees on council owned or managed land – create a planting regime with the help of your local authority tree officers and the Woodland Trust.

If you're looking to plant lots of trees, the Woodland Trust has the trees, grants and funding schemes to help. From 30 trees to 300,000, their expert advisers can help you put the right trees in the right place to achieve your goals. Planting season is November to March, but it's never too early to start planning! Apply now to plant trees in the 2020/2021 planting season. Contact the Woodland Trust for advice on everything from species selection and financial support to protection and maintenance: https://www.woodlandtrust.org.uk/plant-trees/enquiries/

The Woodland Trust also offers free tree planting packs for local councils (https://www.woodlandtrust.org.uk/plant-trees/schools-and-communities/). They are currently taking applications for trees to be delivered in **NOVEMBER 2020.**

They also offer subsidised tree packs: from 30-420 trees, packs in their online tree shop start at just £41.15.

Where 500+ trees are planted as woodland on at least half a hectare, they'll help you design your woodland, create a bespoke species mix, supply the agreed trees and tree protection, and cover up to 75% of costs. If you would like a contractor to plant the trees for you they can arrange this and cover up to 60% of all costs. Other funding and schemes available can be found here: https://www.woodlandtrust.org.uk/plant-trees/large-scale-planting/

For longer term woodland management, many organisations can provide more information, including Forestry Commission booklet 'So, you own a woodland?' and Institute of Chartered Foresters.

For funding for woodland management, visit the Forestry Commission website.

What is Forestry England?

Forestry England is responsible for managing and promoting forests in England owned by the Government and are England's largest land manager. .

Forestry England, Forest Management Plans can be found online for your area here: https://www.forestryengland.uk/forest-planning.

A plan for each local forest area sets out how they aim to manage the woodlands in their care over the next 30 or more years.

A Forest Plan:

- Provides a description of the woods as they are now.
- Outlines the main points considered when deciding what is best for the woods.
- Describes how the forest will develop over time.
- Gives specific information about approved tree felling, replanting and regeneration over the next ten years.

The Baildon Tree Planting Partnership

Following the idea from a local resident, Baildon Town Council, in partnership with the Forest of Bradford and Friends of the Earth, have set up the Baildon Tree Planting Partnership. A partnership which plans, designs and delivers local planting schemes. Bradford Council, the land owner, has given the partnership the go ahead and planting is scheduled for Jan-March 2020.

Source: NALC, 2019. https://www.nalc.gov.uk/library/our-work/tree-charter/3120-baildon-town-council/file

Town Council Plants on High-street

Haywards Heath Town Council plans to plant trees along its high street to "improve the public realm and make it more appealing to visitors." The council is working closely with Mid Sussex District Council and West Sussex County Council to obtain funding and advice, including support to deliver the project for local community and highways approval.

Source: NALC, 2018. https://www.nalc.gov.uk/library/publications/2801-tree-charter-day-case-study-haywards-heath-town-council/file

More information on funding and where, what and how to plant can be found at:

- **Woodland Carbon Fund**

  https://www.gov.uk/guidance/woodland-carbon-fund

- **Forestry Commission**

  https://www.forestresearch.gov.uk/news/climate-change/

- **Woodland Trust**

  https://www.woodlandtrust.org.uk/plant-trees/advice/
  https://www.woodlandtrust.org.uk/plant-trees/large-scale-planting/
  https://www.woodlandtrust.org.uk/plant-trees/schools-and-communities/
  https://www.woodlandtrust.org.uk/media/1168/twigged.pdf
  https://www.woodlandtrust.org.uk/publications/2020/01/emergency-tree-plan/

- **The Royal Forestry Association**

  https://www.rfs.org.uk/news/2020/2/growing-not-planting-trees-key-to-unlock-climate-change/

Management of Council Owned Land

A recent study has reported that rewilding presents regionally specific opportunities for mitigating climate change[5]. As you have responsibility for allotments, bridleways, burial grounds, commons and open spaces, and village greens. All of these can be managed to enhance nature in general, particularly through changing mowing regimes.

Friends of the Earth and Buglife have produced a guide to developing an action plan for helping pollinators such as bees[6]. A Local Pollinator Strategy or Plan provides an opportunity to review current management of parks and other green space, often identifying new more attractive and potentially cost saving opportunities. Making changes will not only benefit pollinators but will provide higher quality public green space; helping to bring people closer to nature, with the health and wellbeing benefits this provides. Developing and implementing a Local Pollinator Strategy or Plan is much more beneficial than carrying out small-scale, piecemeal work, as it will help ensure whole urban and rural landscapes become fit for purpose to support pollinators and other wildlife for many years to come[2].

They recommend five keys actions:

1. Grow more flowers, trees and shrubs to provide pollen and nectar.
2. Leave areas of your garden to grow wild.
3. Cut grass less often to allow plants to flower.
4. Don't disturb insect nests and hibernation spots.
5. Think carefully where to use pesticides.

[5] Sandom et al., 2020. https://doi.org/10.1098/rstb.2019.0125
[6] BugLife and Friends of the Earth, 2018. Helping Pollinators Locally.
https://cdn.friendsoftheearth.uk/sites/default/files/downloads/Helping%20pollinators%20locally.pdf

There is a large body of evidence on the harmful effects that pesticide use can have on pollinators and other wildlife. Local Councils should aim to use pesticides only if absolutely necessary (for example the control of Japanese Knotweed) and avoid using pesticides on flowering plants or where pollinators are active or nesting. The use of neonicotinoid pesticides is particularly concerning. Local authorities should make sure that bedding plant seeds, bedding plants or turf have not been treated with neonicotinoids. This policy can be implemented through procurement both from external contractors and in -house services[2].

PlantLife have an interesting guidance on managing road verges for wildflowers[7]. Roadside verges and roundabouts are often maintained as short grassland. Although this may be necessary for road safety purposes, it is often simple carried out due to habit. Reducing the frequency of cutting or creating wildflower meadows can be a simple and effective way to lower management costs and attract pollinators[7]. Similarly by changing hedge cutting schedules this can allow a better structure to develop in hedgerows, allowing flowers to bloom for longer. The exact timing of mowing regimes depends on the vegetation being managed. A general rule is that nectar-rich plants should be allowed to finish flowering before mowing takes place. It is also important that hedge and verge cuttings are removed to prevent the growth of 'rank' vegetation and keep fertility low[7].

[7] PlantLife, 2016. Managing Grassland Road verges.
https://www.plantlife.org.uk/application/files/3315/7063/5411/Managing_grassland_road_verges_Singles.pdf

Bishop Waltham Parish Council's wildflower meadow

Bishop Waltham Parish council have developed a Priory Meadow which includes a logged seating area, Community Orchard and wildflower area. The council has also produced a Nature Reserves Leaflet, which gives details on the four local nature reserves and also a Pubs Walk leaflet, helping locals to value the surrounding countryside.

Source: NALC, 2019. https://www.nalc.gov.uk/our-work/treecharter

Isle of Wight council reduces verge cutting

Isle of Wight Council plans to reduce verge cutting, saving £11,000 a year. This will allow more wildflowers to bloom, benefitting pollinators, while essential road safety standards are maintained.

Source: Friends of the Earth 2017. https://friendsoftheearth.uk/bees/huge-public-backing-councils-reduce-grasscutting-help-save-our-bees

Dorset County Council stops neonicotinoid use

Dorset County Council is stopping the use of neonicotinoids on land owned by the council. This is a key part of their 'pollinator strategy' adopted in June 2016.

Source: Dorset Council, 2016. https://news.dorsetcouncil.gov.uk/2016/06/30/dorset-agrees-action-plan-for-pollinators/

Encouraging Community Tree Planting

Council owned land appropriate for tree planting is often limited. It is therefore important to also encourage and support local landowners to take part in community based tree planting schemes.

Local authorities around the UK have already come up with unique and creative ways to do this.

The Woodland Trust offers free tree planting packs for communities and schools, along with local councils (https://www.woodlandtrust.org.uk/plant-trees/schools-and-communities/). They also offer 'trees for your farm', funding of up to 100% of costs are available for agroforestry schemes, planting 500+ trees to improve productivity and the environment of your farm.

As a local authority you can promote this scheme to your local farm owners – they can apply via this enquiries form https://www.woodlandtrust.org.uk/plant-trees/enquiries/.

The Role of Neighbourhood Planning

Rattery Parish Council offers households free trees

Rattery Parish council in Devon has offering every household a free tree during winter to be planted in people's own garden or around Rattery town. The council also had an 'environment and climate' stall at their recent annual garden and sports show, where they offered free trees and had information about local wildlife.

Source: NALC, 2019 https://www.nalc.gov.uk/our-work/treecharter

Organise seed stalls and seed swaps

Bristol based volunteer group 'Bristol Seed Swap' organise seed swap events in the city, helping to reduce waste, promote diversity amongst crops and keep culture heritage alive.

Source: https://www.evensi.uk/bristol-seed-swap-seeds-stalls-cake-station/283649900

Parish and Town councils get existing groups involved in tree planting

Laverstock and Ford Parish Council launched a project to create a new local woodland to act as a First World War Memorial. The council called on local residents to get involved and help plant the first 600 trees and made it a priority to get local community groups involved.

Source: NALC, 2018. https://www.nalc.gov.uk/library/publications/2799-tree-charter-day-case-study-laverstock-and-ford-parish-council-wiltshire/file

Leamington Town Council partnered up with Age UK and local schools to revamp a local woodland area to support people with dementia. Volunteers from Age UK Warwickshire and the local business community worked on the project and continue to maintain the woodland. Other existing groups to consider involving in tree planting projects include scout groups, Sunday school groups.

Source: NALC, 2018. https://www.nalc.gov.uk/library/publications/2802-tree-charter-day-case-study-leamington-town-council/file

Bristol City Council launches one tree per employee scheme

Bristol City Council have launched a one tree per employee scheme – a campaign to get Bristol's businesses to plant one tree per worker. The aim is to plant 250,000 trees in the city by 2030. In 2014 they launched a one tree per child scheme which plants trees in schools, parks and open spaces. 57,000 trees have been planted since 2014.

Source: Bristol City Council, 2019 https://www.bristol.gov.uk/museums-parks-sports-culture/one-tree-per-employee

Stowmarket Town Council plants one tree for every couple married that year

In 2019 Stowmarket Town council provided 50 trees to be planted for the first 50 couples which get married or enter into a civil partnership at their registry office, "in the name of love and new beginnings". The council plans to host a temporary exhibition showcasing local love stories centring on a wish tree.

Source: NALC, 2019. https://www.nalc.gov.uk/library/our-work/tree-charter/2985-tree-charter-day-case-study-stowmarket-town-council/file

You can use your Neighbourhood Plan to designate valued green areas as Local Green Spaces. A Local Green Space designation is recognised in the planning system and offers such sites protection from future development. This will therefore provide certainty and longevity to any community conservation initiatives such as tree planting or habitat restoration which happen on these sites.

Key questions to ask:

1. **Have important green spaces and other aspects of local Green Infrastructure[8] been mapped as part of the development of the neighbourhood plan – and have these been designated as Local Green Spaces in the Neighbourhood Plan document?**

2. **Does your plan include a policy protecting any existing green roofs and green walls and street trees, and require inclusion of such features as part of future development sites?[9]**

CSE Support

CSE runs a Neighbourhood Plan support programme, funded by the Esme Fairbairn Foundation.

If you are in the process of writing a neighbourhood plan or wish to begin so, CSE has a team which can support you through bespoke advice and workshops.

We also have some free resources online including:

- *"Neighbourhood Planning for a Climate Emergency" a new and updated version of CSE's popular guidebook which explores the potential of 'low carbon' neighbourhood plans to incorporate poicies to mitgate and adapt to climate change.*

- *"How Green Is My Plan?" to help you assess your draft plan and see how well it does in terms of climate change and sustainability.*

Get in touch with us via email or phone if you would like to access any of this support:

neighbourhoodplanning@cse.org.uk

0117 934 1400

Or visit our website

https://www.cse.org.uk/local-energy/neighbourhood-plans

[8] Green Infrastructure is the network of green spaces and waterways serving as habitat for wildlife, including parks, streams and rivers, hedgerows, trees, back gardens, railway corridors, drainage ditches, road verges and disused land.
[9] green roofs and walls and street trees can help mitigate both flooding and heat waves and can also offer wildlife habitat