



W O O D L A N D C R E A T I O N



LEEDS CITY COUNCIL PARKS AND COUNTRYSIDE WOODLAND CREATION INITIATIVE

Leeds City Council have declared a Climate Emergency in the city, followed by a commitment to make Leeds carbon neutral by 2030. In line with this, Leeds City Council Parks and Countryside service have committed to create woodlands across the city. This will support the delivery of the White Rose Forest which forms part of the Northern Forest. The national Committee on Climate Change have advised that for the UK to reach net zero carbon by 2050, tree planting rates need to be at 30,000 hectares/year across the UK.

Currently on average 17.1% of the Leeds Metropolitan District is tree canopy (9,434 hectares). To offset carbon emissions, Leeds would require the tree canopy to increase to around 33%, an additional 9000 hectares.

In line with this projection Leeds Parks and Countryside Service will:



Plant **5.8 million trees** over the next 25 years



Create woodland on **1250 hectares** of land at a rate of 50 hectares each year



Identify council owned land that could be suitable for tree planting



Carry out **due diligence** for each location to ensure its suitability and sustainability as woodland



Design, prepare, plant and maintain the woodlands created

As suitable sites are identified and proposed, local ward members and members of the community will be consulted.

The approach to adapting parks and green spaces in response to climate change as outlined to Executive Board in September 2019 will continue to be implemented.

WHY PLANT TREES?

Because planting trees...



IDENTIFYING SITES

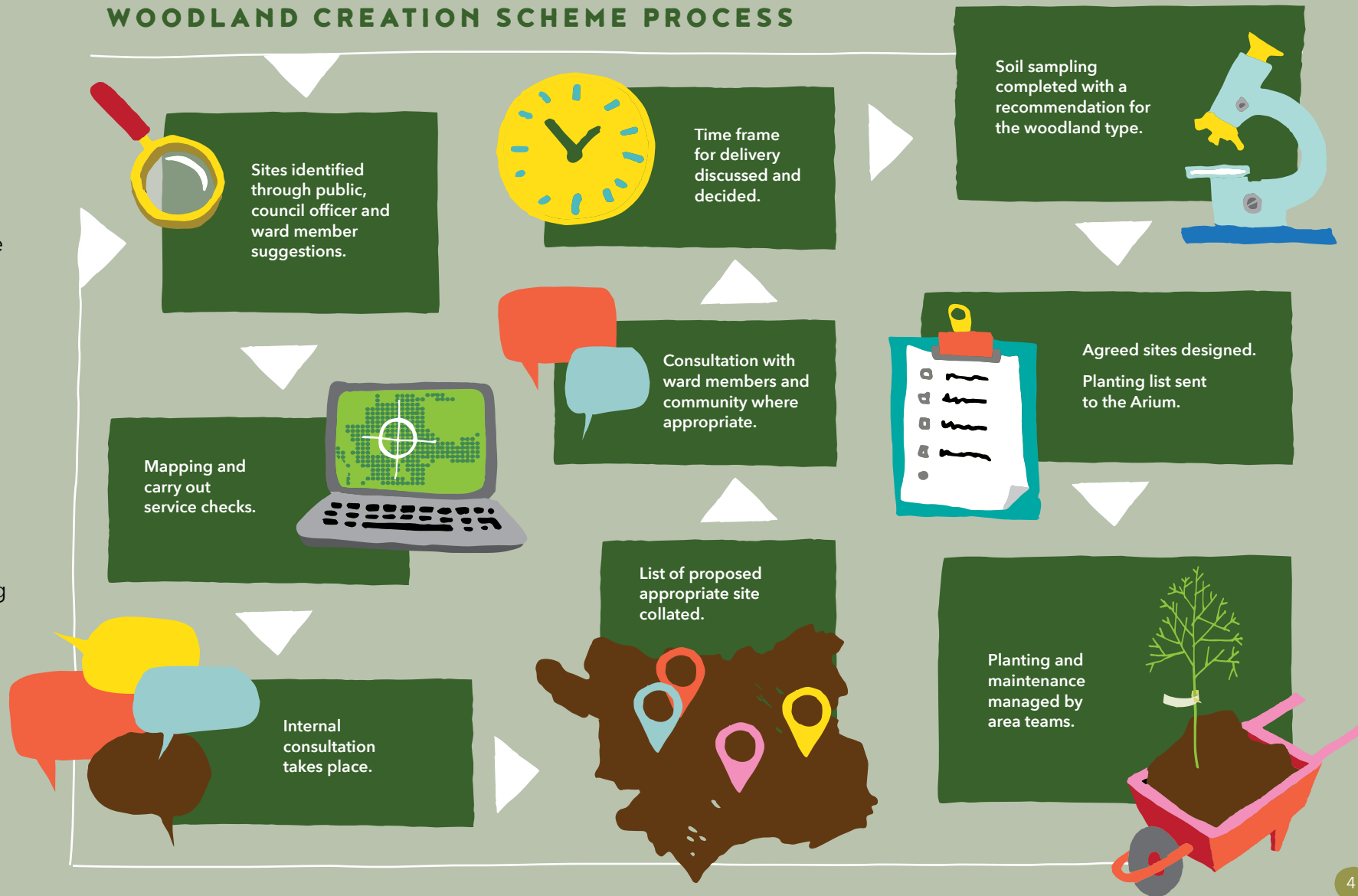
Knowledge of how an area of parkland is used is essential if we are to balance the recreational amenity value against the potential climate change benefits.

Service checks are a vital component of this process, ensuring that when the trees mature there are no risks to existing overhead or underground utilities.

Due consideration is given to the potential short, medium and long term impact on any adjacent property or highway.

This flow chart details the Woodland Creation scheme process.

WOODLAND CREATION SCHEME PROCESS



RIGHT TREE, RIGHT PLACE

Choosing the right location for a woodland plantation is vital to ensuring that the saplings flourish.

Not all sites will be new areas entirely dedicated to tree planting - some pre-existing woodland sites may simply require extending and/or enhancement. Soil character, local climate conditions, and habitat type of the surrounding area help to determine which species are most suitable and how many trees can be planted at a suggested site.



The roots of a tree extend far from the trunk and are found mostly in the upper 6 to 12 inches of soil.

For example, in some dense urban areas underground soil may be limited, therefore selecting a tree species with an appropriate root system is important to ensuring its growth does not affect underground pipes, cables or structures.

MANAGEMENT

Intensive land management regimes have been proven to have a negative impact on biodiversity, 'natural' long-term management regimes are preferable within our woodland creation proposals.



Young woodland at Stonegate Road. The grass between the trees is left to grow.



Fenced woodland at
Water Haigh Woodland Park

Interpretation such as the example below may be erected at some of the larger areas of woodland.



Interpretation at Stonegate Road

One adopted practice will be a reduction in mowing intensity, allowing grassed areas between trees to adopt more semi-natural conditions. This will improve green corridors for small mammals, creating better hunting habitats for owls and other birds of prey.

Low intensity thinning and 'formative pruning'² practices will be used within the woodlands up to year 15 of their growth. This is to allow more sunlight to reach the woodland floor, encouraging greater richness of ground flora species.

Prior to tree planting, the area to be planted as woodland will not be mown and where appropriate, a fence will be erected to protect the area. The fence will be put in place before the trees are planted, protecting them from damage from both human and animal interaction.

Smaller signs will be present at all tree planting locations, with larger interpretation panels detailing species types at areas larger than 2 hectares. Signs are suggested to be installed prior to the planting of sites, in the hope of raising awareness and minimising accidental destruction.



² Selecting the dominant leading shoot and removing side branches to achieve a clean stem of c. 1/3 height of the tree.

THE BENEFITS OF WOODLAND

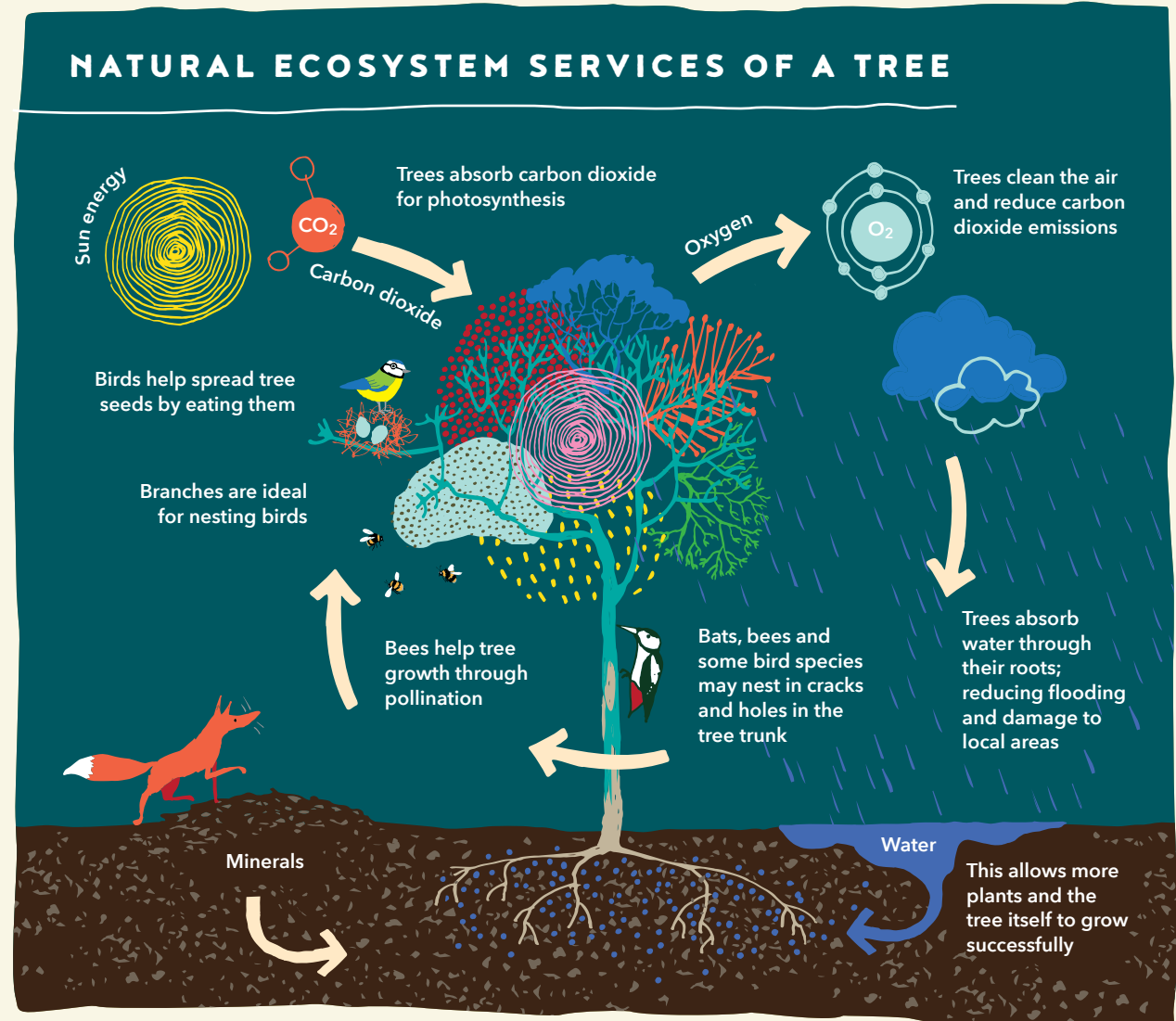
Species Mix

An important consideration when creating wildlife habitats is including a mix of trees to benefit insects including pollinators, birds, plants, and mammals. A diversity of tree types is especially valuable in cities where a loss or absence of woodlands has already seen a decrease in key species.

Planting trees that provide natural ecosystem services to habitats can also improve tree growth and distribution.

For example, including fruit trees within woodland plantations provides an orchard for us, as well as an excellent food source for insects, birds and mammals. Animals will help to spread the seeds through consumption and excretion, creating more tree growth around the city.

Additionally, their roots are recognised for trapping and fixing soil effectively, providing additional stability to their planting ground. This reduces soil erosion during periods of intense rainfall, protecting other trees and plants nearby from being washed away.



Fruits of Planning Ahead

By planting species that are compatible with each other in their relative locations within a woodland, this will promote greater success of not only the trees themselves, but the other plant and animal species developing around them.



More cold-resistant trees (such as Scots Pine) may produce more fruit in colder, shadier spots.

In shadier, more northern facing edges of the woodland, Beech trees are more likely to bear fruit. Wild Cherry produces more fruit when planted on southern edges of woodland, as it gathers more sunshine for photosynthesis. Preferential planting will provide a greater yield of fruit for a more diverse number of species to survive on, rather than prioritising the growth of one species over another.

Creating Space

Clearings within the plantation encourages biodiversity by creating a variety of light levels throughout the woodland.

Different plants require different light levels to grow well, so clearings between densely planted woods will allow various plant species to flourish in the same area of woodland.

Each tree species usually encourages a set of compatible wildlife diversity, which could in turn provide more food for species further up the food chain.

Variety of light levels allows the growth in some circumstances of a dense under-canopy which can be especially valuable to nesting birds³. Birds prefer to nest in areas that provide greater protection for their nests from predators, as well as shielding from noise and disturbance.

Our woodlands will not just provide greater diversity of plants, but an opportunity for more bird species to safely nest, even in the busiest urban locations.

³ DEFRA Report 2014, Effects of Woodland Structure on Woodland Bird Populations



Middleton Woods, where space in the tree canopy has allowed bluebells to flourish. Paths between the trees allow the public to enjoy their beauty without damaging them.



Our well designed woodlands will have at least 20% of their footprint dedicated to open space, to encourage biodiversity but also where needed, to create fire-breaks between the trees.

In the future, when the trees are more established, footpaths will wind through the woodlands. This will create an opportunity for the community to enjoy the woodland, which in turn supports positive health and wellbeing, enjoyment, being active and raising awareness of the natural diversity in their community.

Looking to the Future

Following a net loss of woodland worldwide in 2015-16, each year since, tree planting has outstripped deforestation. However, the loss of broadleaved forests, namely ancient woodlands, has resulted in significant decreases in several species, such as Bechstein's bats, willow tits, wood mice and pearl-bordered fritillary butterflies.



Wood mouse - one of the many species experiencing a loss in habitat due to the loss of woodland and climate change

Whilst ancient woodlands are irreplaceable, by planting native species commonly found in these areas, we are making a commitment to future generations, future species, and the future of rich biodiversity in and around the City of Leeds.

ARIUM of interest!

Can you guess how many panes of glass were used to create the Arium? It might take you a while to count!

22,000 panes

were used to create the glasshouse!



10,000 seedlings

can be potted up in an hour using our state of the art potting machine!

500+ different species of plant

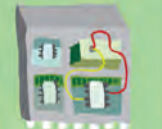
are grown in the Arium each year. Our experienced growers know the necessary techniques for each and every one - from strict watering and feeding regimes, to maintaining temperatures for optimum growth.

A whopping **1.8 million seeds**

will be sown each year at the Arium - each needing different sowing techniques.

These seeds won't just produce pretty plants, but also dozens of varieties of **herbs, vegetables, and soft fruits** that will be available to buy from the shop.

3 boilers provide the heating for the glass house.



An environmental control **computer** operates vents, screens, heating and watering in all zones.

Giant water tanks hold the equivalent of **40,000 watering cans**

4 growing zones

each the size of Millenium Square, are used to grow the plants. Each zone can be separated from the others to create different environments to suit the crops being grown.

Zones 1 and 3 can hold **576 benches**

- each one covers the same area as a family car.

6.2km of guttering

- that's the same distance as from here to Tropical World!

All the water used to grow plants at the Arium is filtered **rainwater** which is then stored in giant water tanks.

Rainwater from the guttering is collected in this **lagoon**

We aren't just growing indoors; before opening

4,500 trees

were planted in the Arium grounds. We want to provide a natural habitat for UK wildlife. We often spot native bird, fox and deer species around the site.

600,000 tonnes of soil

and sub soil were moved around to create the site.

3 football pitches!

Our 19,000 sqm glasshouse is about the size of



the **ARIUM**
LEEDS PARKS NURSERY

THE ARIUM - Its crucial role

The Arium, the largest local authority plant nursery in the country plays a crucial role in the Woodland Creation initiative. The Arium sources and grows trees locally, both from seed sourced externally, and from local seed collection in our parks and woodlands across the city. This reduces transportation and the potential spread of pests and diseases affecting tree imports. As tree planting is becoming a primary council strategy for reducing carbon emissions, the ability of Leeds City Council to sustain, source and grow its own trees provides a significant advantage should tree supply for woodland planting become oversubscribed nationally.

Each autumn is a **Seed Collection Campaign** engaging communities across the city to get involved in seed collection in their local park. Seed collection boxes will be in place across the city to deposit collections. These will then be gathered at the Arium for planting.

Once at the Arium a practice known as **stratification** will be employed, whereby natural conditions are simulated indoors to encourage growth. This may involve keeping the seeds warm, then cold, then warm again for various periods of time, to mimic the passing of the seasons usually experienced in their natural growth areas. The large scale of the Arium planting facilities and given the right equipment and availability of seed, it will generally take 2 years to grow saplings from seed, ready for planting.

The Arium will introduce educational visits for schools, volunteers and the general public to learn about the woodland creation initiative in Leeds and see the scale of the operation at the Arium.



How can my community get involved?

Your community will have the opportunity to get involved with seed gathering and tree planting across the city. Information is available on the Leeds City Council website and The Arium website, explaining the woodland creation initiative, and most importantly how you can get involved. Please note there are a limited number of volunteering opportunities available. If you are interested in signing up please email woodlandcreation@leeds.gov.uk.

Education

Leeds schools are invited to take part in ranger-led seed gathering workshops in our parks and woodland, and tree planting workshops in the new planting sites. All workshops have clear links to the school curriculum, incorporating educational games and activities alongside the practical element. The Ranger Service have produced an education pack for teachers, containing activities for the classroom and some to do outside in their local green spaces. The packs also contain information about seed gathering, germination, establishment and the wider benefits trees bring to the environment. The Arium acts as a hub for information on the project and for informal educational activities, complementing the community and education aspects of the project. Additionally children are encouraged to get involved with the seed collection campaign.



SEED COLLECTION CAMPAIGN

Through the months of September to November, seed collection boxes with accompanying interpretation will be provided in some of our local parks. Residents of all ages can get involved and gather seeds to be planted at the Arium; actively contributing to the Woodland Creation Initiative and tree production. Information is available on Leeds City Council and The Arium websites. There are boxes for each listed tree seed type and where seeds collected at the park can be deposited. The boxes are kept at indoor locations at various parks, with signs advertising the scheme and signposting their location. Only seeds that are easily identifiable and found in the relevant parks will be collected. These are collected and taken to the Arium for growing.



Example of sign found on a collection box/identifying document. Clearly shows defining characteristics of seed/tree to minimise collection of wrong species.



The locations are:

- | | | | |
|---|---------------------------------------|----|-------------------------------|
| 1 | Temple Newsam Café | 7 | Golden Acre Park Café |
| 2 | Gotts Manor Golf Club | 8 | Tropical World Gift Shop |
| 3 | The Arium | 9 | Kirkstall Abbey Gift Shop |
| 4 | Three Cottages Café,
Meanwood Park | 10 | White House Café Otley Chevin |
| 5 | Farnley Hall Park | 11 | TCV Hollybush Kirkstall |
| 6 | Middleton Park Visitor Centre | 12 | Wetherby Town Hall |
| | | 13 | Lotherton |



A ranger demonstrates how to plant a sapling, a family works together to plant a tree.



VOLUNTEER DAYS

We will organise tree planting volunteer days, coordinating and assisting community groups; as well as overseeing and facilitating educational visits.

There is already a huge commitment to volunteering in our parks and green spaces, representing 24,000 volunteer hours each year; this work will complement the scheme. Some of this volunteer time is dedicated to seed collection, and other time to tree planting.

