Targets and Priorities

3.1 Trees and Woodland Structure

This section covers the physical structure of the trees and woodland from various perspectives. It does not cover the management of those trees which is covered in a later section.
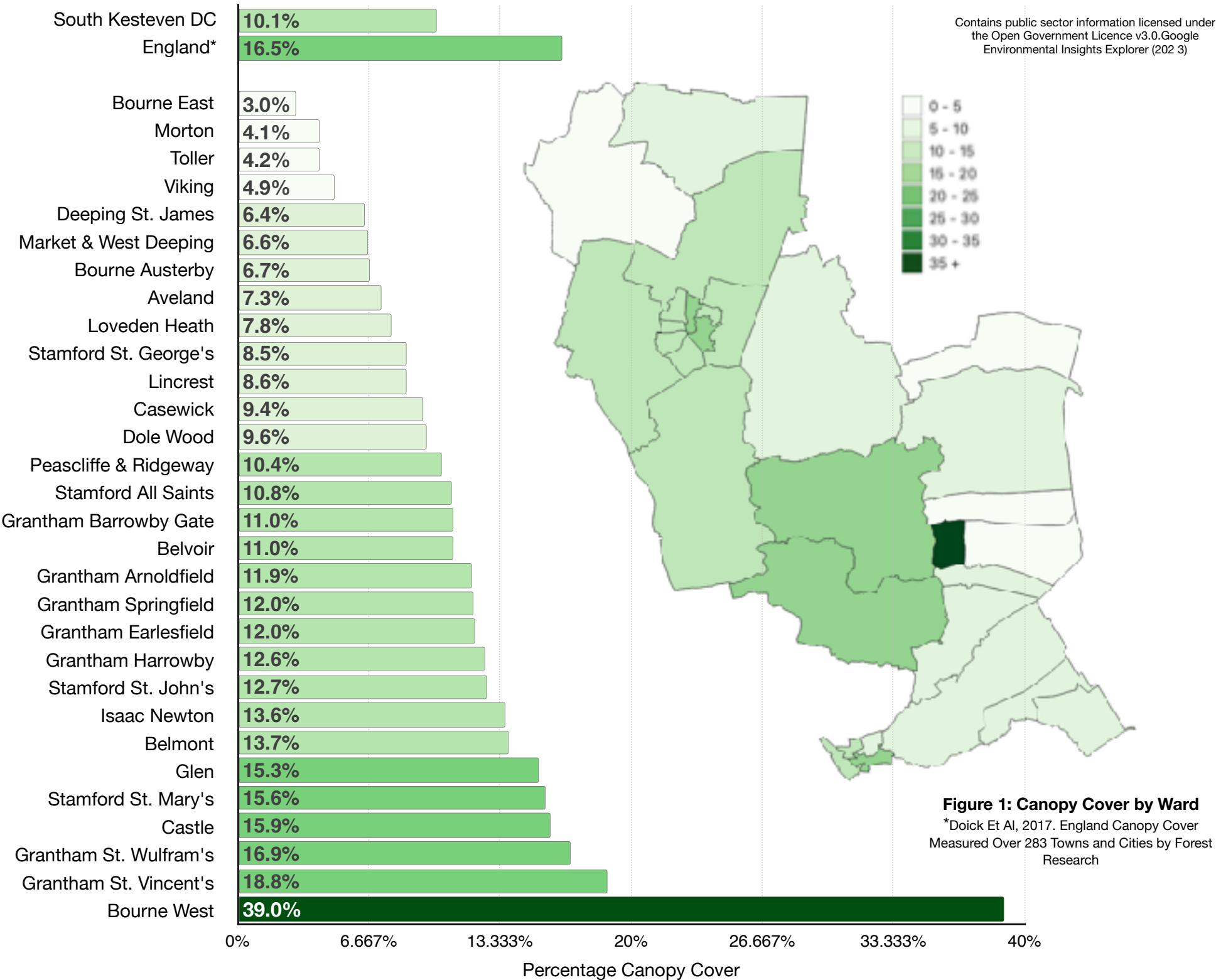
T1   Relative Tree Canopy Cover

Tree Canopy Cover, which is often also referred to as tree cover, can be defined as the area of leaves, branches, and stems of trees covering the ground, across a given area, when viewed from above. Canopy cover is a two dimensional metric, indicating the spread of canopy cover across an area. Potential canopy cover is the area which could be covered by tree canopy with constraints on tree establishment removed.

There are many methods of assessing canopy cover at this scale, including i-Tree canopy, Bluesky National Tree Map, Google Environmental Insights Explorer etc. These methods are not directly comparable with each other as they use different metrics and definitions of what constitutes canopy cover.

Low canopy cover percentage is often a result of widespread agriculture. Comparatively low canopy cover in these areas is not a reason to avoid or delay appropriate woodland management. Canopy cover increases can be achieved through both tree planting and increasing the canopy of existing trees (with improved management and maintenance).

In order to set realistic canopy cover targets, the opportunities for and constraints preventing new tree planting must be identified, ensuring canopy cover goals do not exceed what is possible at maximum stocking levels. It is recognised that the key goal for the District is canopy cover equity across settlement areas. It has also been acknowledged that for any future assessment it will be important to be able to differentiate between the tree canopy cover provided by woodlands, parks and street trees.

Link to relevant corporate policies:

- SKDC's Local Plan

Contains public sector information licensed under the Open Government Licence v3.0.Google Environmental Insights Explorer (202 3)

Legend (Percentage Canopy Cover):
- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 +

Figure 1: Canopy Cover by Ward
*Doick Et Al, 2017. England Canopy Cover Measured Over 283 Towns and Cities by Forest Research

Bar chart — Percentage Canopy Cover by ward:

Ward	Canopy Cover
South Kesteven DC	10.1%
England*	16.5%
Bourne East	3.0%
Morton	4.1%
Toller	4.2%
Viking	4.9%
Deeping St. James	6.4%
Market & West Deeping	6.6%
Bourne Austerby	6.7%
Aveland	7.3%
Loveden Heath	7.8%
Stamford St. George's	8.5%
Lincrest	8.6%
Casewick	9.4%
Dole Wood	9.6%
Peascliffe & Ridgeway	10.4%
Stamford All Saints	10.8%
Grantham Barrowby Gate	11.0%
Belvoir	11.0%
Grantham Arnoldfield	11.9%
Grantham Springfield	12.0%
Grantham Earlesfield	12.0%
Grantham Harrowby	12.6%
Stamford St. John's	12.7%
Isaac Newton	13.6%
Belmont	13.7%
Glen	15.3%
Stamford St. Mary's	15.6%
Castle	15.9%
Grantham St. Wulfram's	16.9%
Grantham St. Vincent's	18.8%
Bourne West	39.0%

Geography	Tree Cover	Source
South Kesteven District	10.1%	Google EIE 2022

Table 1: Urban Tree Cover Estimates

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T2 Size (Age) Diversity

In total, trees and woodlands depend upon their age diversity to maintain their ability to provide constant benefits to the people who live in South Kesteven over time. The first step in this direction is to establish the current position in enough detail to enable meaningful decision making.

Maturing trees need to be protected and managed to best enable them to reach veteran status (senescent). Juvenile trees must be continually planted to replace old trees, dying trees and trees removed for safety reasons. Whilst larger, older trees typically provide more annual benefits than smaller, younger trees, the latter are vital to maintaining a healthy and sustainable treescape.

Generally, the most accurate way to gauge age diversity is to compare current tree size in each species (in terms of stem diameter) to the maximum diameter for that species. The goal would then be to maintain a tree population that is unevenly distributed among different age classes; thereforemaking sure that there are enough juvenile trees for the future.

It is of course also important to strive for age diversity across the entire tree population – including public trees managed "extensively" (as a group) in parks and natural areas, as well as trees on private property, both District-wide and at neighbourhood level.

Sources and references:
Richards, N.A., (1982/1983). Diversity and stability in a street tree population. Urban Ecology 7, 159–171 – as cited in McPherson, Urban Forestry & Urban Greening 12 (2013) 134– 143.
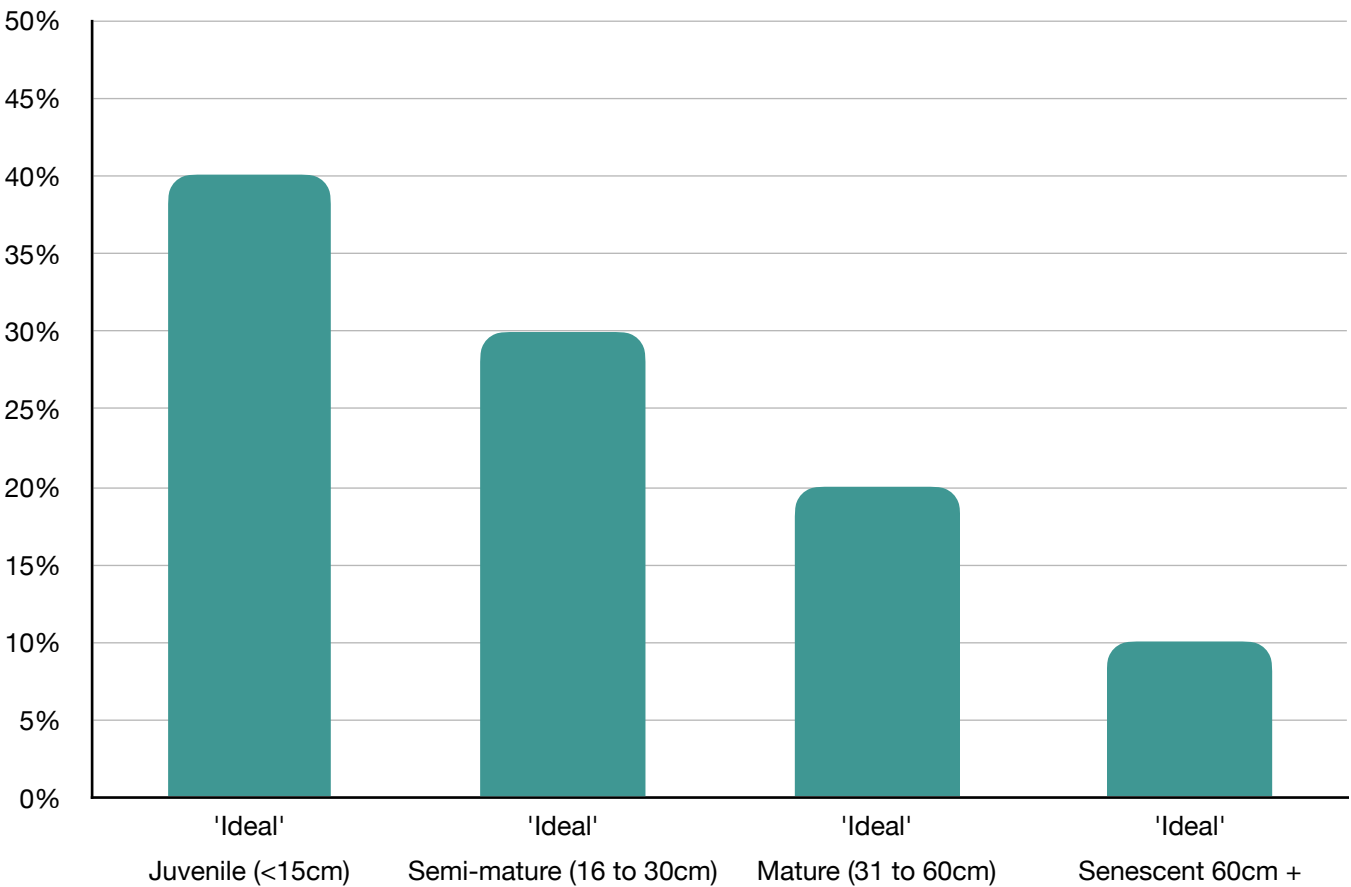

Figure 1: Richards "Ideal" Distribution of Tree Age Across the Urban Forest Showing Typical Stem Diameter for Each Age Class.

T3   Species Diversity

Diversity is an important aspect of trees and woodlands to monitor. It underpins the wider concept of biodiversity within our trees and woodlands and provides a natural protection against large scale tree loss. Trees are split into families, genera, species and varieties and a mix of these is what we understand by a diverse treescape.

Sufficient tree diversity can increase overall resilience in the face of biotic and environmental stresses and threats. Many threats target individual species, so in aggregate, a more diverse tree-scape is better able to deal with possible changes in climate or pest and disease impacts.

Understanding the species diversity of South Kesteven DC's existing trees and woodland is a vital first step. From there, tree planting and management plans can enhance the diversity in line with the goals and KPI's of the action plan.

Santmour's (1990) 10-20-30 rule for species, genus and familyand Barker's benchmark of 5% per species are useful tools in assessing and providing targets for species diversity in the urban context. Ideally, the array and location of suitable tree species would be so diverse that no single species would represent more than 5% of the tree population across the District or more than 10% in any given parish (Barker, 1975). However these rules apply only to street tree populations.

For landscape scale approaches, Hubbell's dominance diversity curves can be a more useful aid to visualise species diversity. The longer and shallower the curve, the greater the diversity.
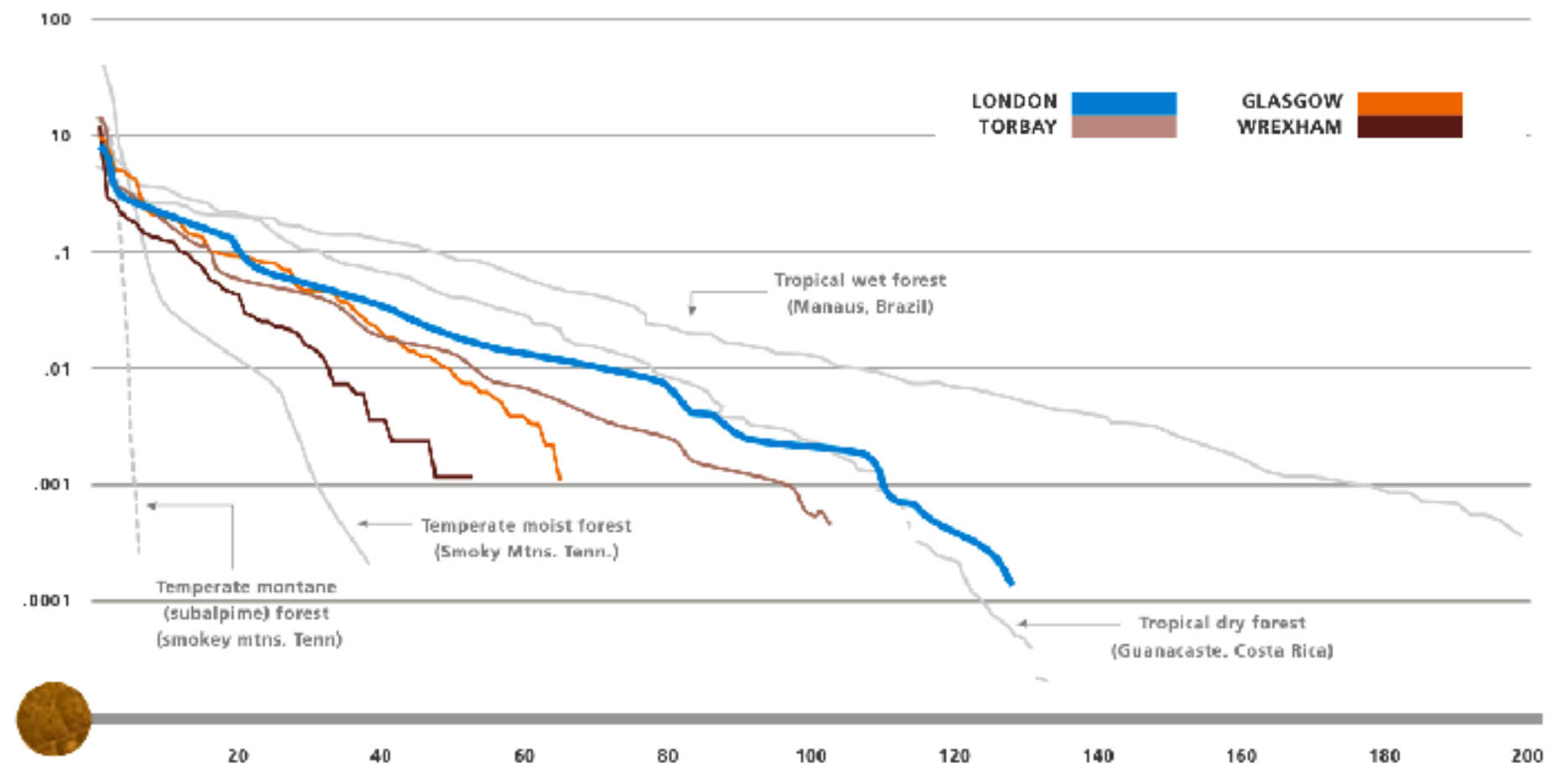

Figure 2: Dominance diversity curves for UK cities compared with example forest types

Sources and references:

Santamour, F.S. (1990) Trees for urban planting: Diversity, uniformity and common sense, in: Proceedings of the Conference Metropolitan Tree Improvement Alliance (METRIA). pp. 57–65.

Barker, P.A. (1975) Ordinance Control of Street Trees. Journal of Arboriculture. 1. pp. 121-215.

Beeauchamp, K. 2016 Measuring Forest Tree Species Diversity. Forest Research.

Link to relevant corporate policies:

- SKDC's Climate Action Strategy

T4   Species Suitability

Selecting a broad array of species which are well suited to their context, whether that is urban or rural, is fundamental to the concept of species suitability. Trees have unique needs; all tree species have different genetic characteristics and growth strategies which have been developed to maximise survival and growth in their natural habitats. Climate, soil and other environmental aspects can affect their ability to survive and thrive.

Urban contexts create greater external stresses than those trees experience in their natural habitat. This can limit their lifespan and increase vulnerability to pests and diseases. Securing species suitability means trees are less likely to be placed under those stresses and more likely to reach maturity.

That context is also going to change under the impact of climate change. Predictions form the UK Meteorological Office forecast warmer, wetter winters and hotter, dryer summers. Even that simplistic high level summary is enough to indicate that some species will struggle in the future. Such factors need to be taken into account today when making tree species selection decisions. Many of our native species will be closer to the edge of their suitability range under even the best case scenarios now being envisaged.

Link to relevant corporate policies:

- SKDC's Climate Action Strategy

"A greater chance of warmer, wetter winters and hotter, drier summers"

A headline summary of UK Climate Projections from the Met Office, 2022

T5   Publicly Owned Trees

Trees managed individually, such as street trees, are considered to be "managed intensively," according to arboricultural techniques – whereas trees in woodlands or other natural areas are typically "managed extensively," as a group. Park trees can fall into either category, depending on how they are managed.

Understanding how many trees are managed in this way and what this type of management entails will help provide a baseline for improving future 'intensive' practices. A tree inventory documenting these trees, their location, species, health, etc is invaluable for tree maintenance and risk management.

It can also form the basis of a detailed community engagement tool, enabling people to learn and understand more about the individual trees that they pass in the streets where they live and work. Such information has proved instrumental in improving care of trees by residents.

Link to relevant corporate policies:

SKDC's Local Plan

South Kesteven and Rutland Infrastructure Delivery Plan

SKDC Tree Guidelines

The Bandstand, Dysart Park in Grantham

Wyndham Park in Grantham
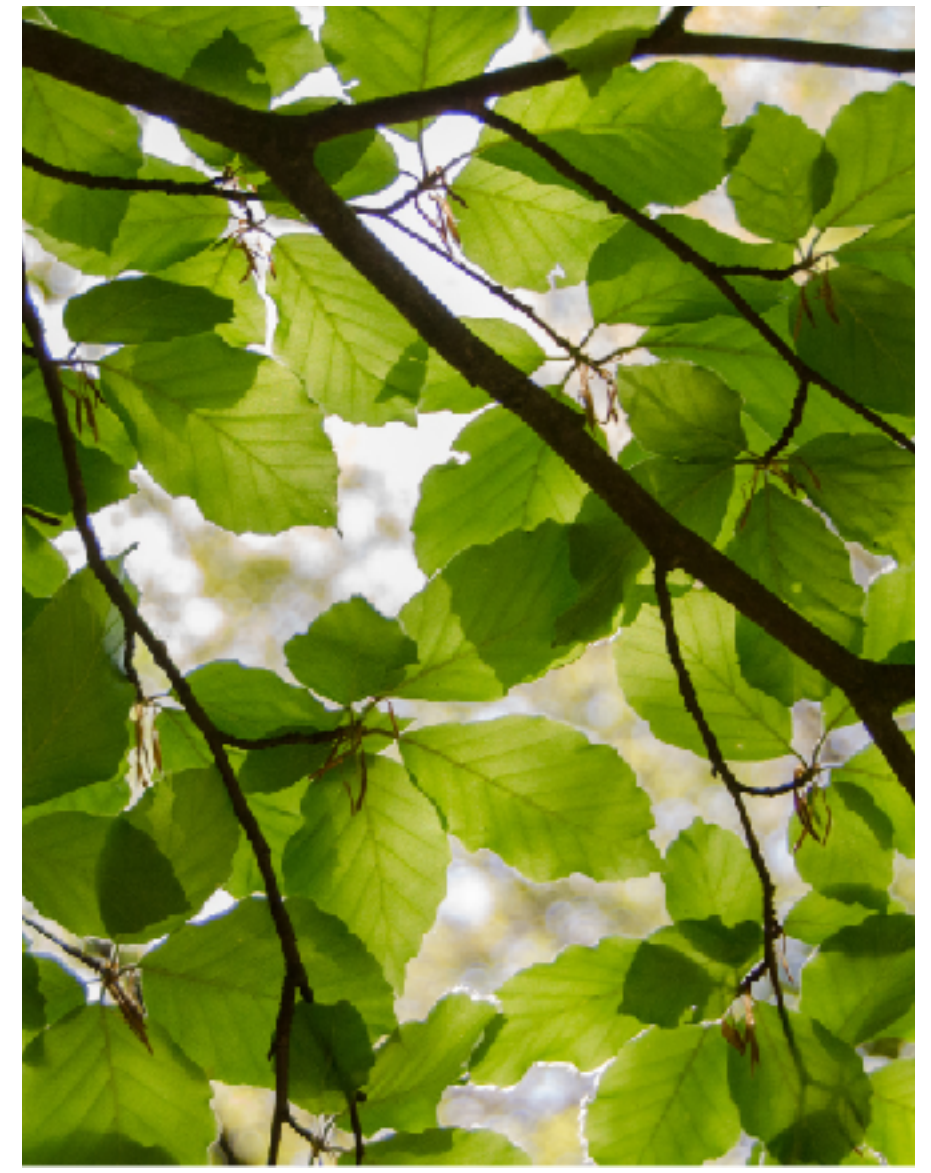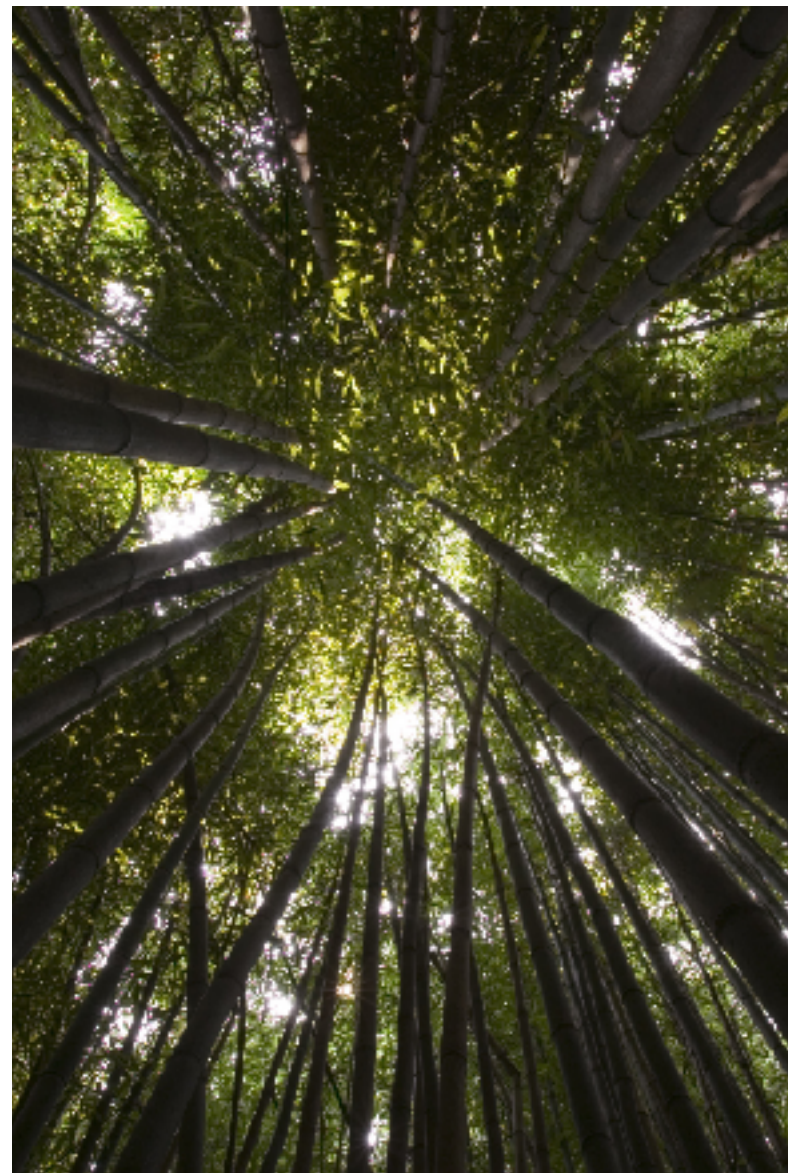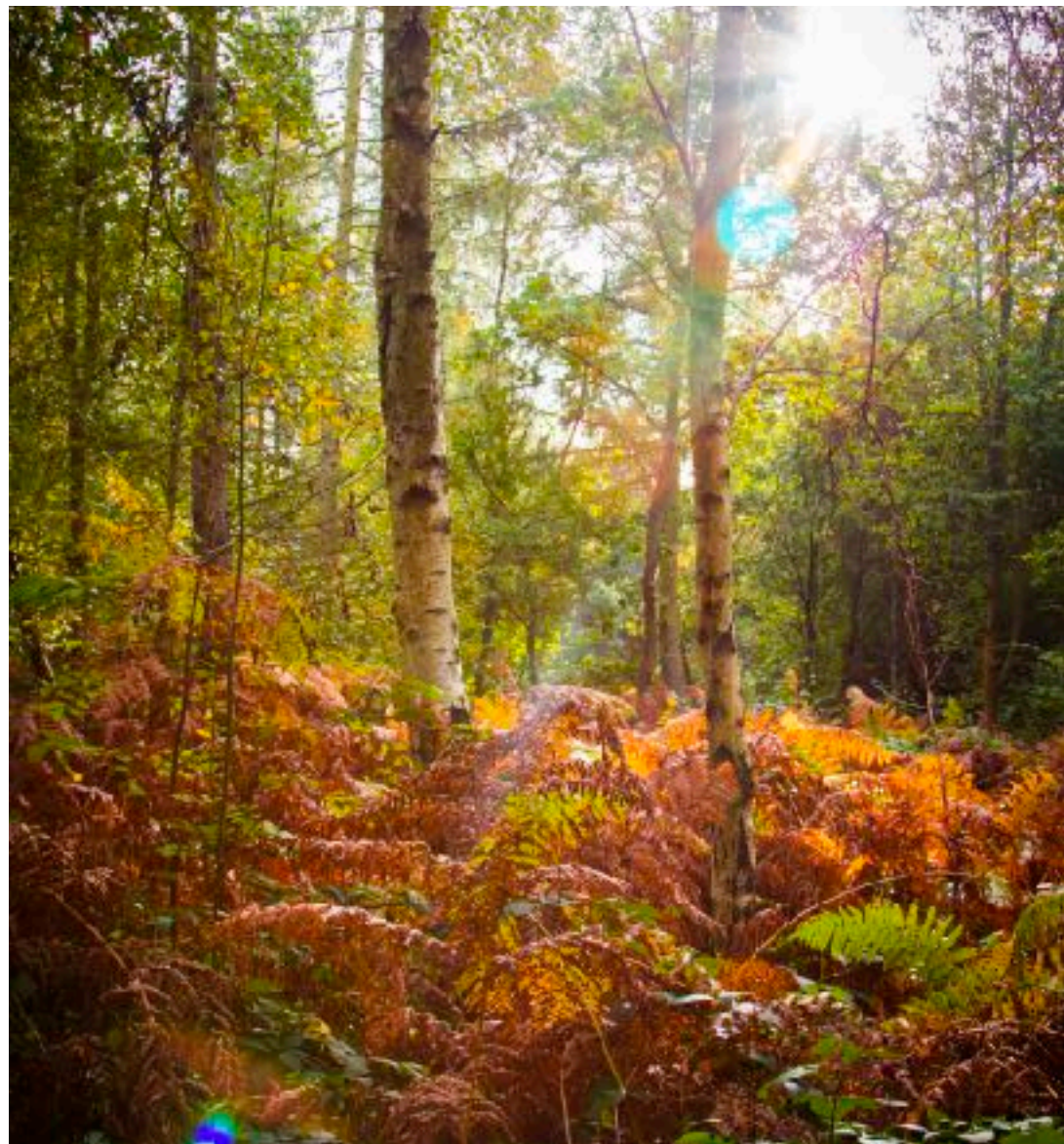

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T6   Trees on Other Land (Influence)

Trees on private property are more difficult to survey and manage than those on public land due to the extent and inaccessibility of these trees. It relies on land owners taking an active role in tree management.

Developing the tools to influence other land owners with trees on their property can become a significant factor within management of the totality of the trees and woodlands across the District.

This can simply mean understanding the extent of the tree estate that is outside public ownership. This is generally a mix of the gardens of private householders together with larger privately owned estates.

Notable large woodland areas outside of SKDC ownership include the following: Londonthorpe Woods managed by Woodland Trust, Bourne Woods managed by Forestry England and Dole Wood managed by Lincolnshire Wildlife Trust

A full inventory of trees on private properties is difficult;many will fall into conservation areas, and many more will be on record with a tree preservation order (TPO). Fully collating the data already held on these trees may be useful in combination with an i-Tree Eco sample survey.

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T7 Tree Benefits

Trees and woodlands bring with them both benefits and costs. Whilst many of the costs are well known, the benefits can be difficult to quantify. Nevertheless, a considerable and expanding body of research exists on the benefits that trees and woodlands provide to those who live and work nearby, to green infrastructure and to the wider ecosystem.

Trees provide a 'sense of place', moderate extremes of high temperature in urban areas, improve air quality, reduce rainwater runoff and act as a carbon sink. Yet, trees are often overlooked and undervalued.

Understanding and valuing these services allows us to make more informed planting and management decisions for the benefit of current and future generations. It can also help communicate the importance of trees to the public and to those in the planning and development sector, encouraging the protection and management of existing trees as well as new planting.

i-Tree Eco is a tool which can be used to quantify tree benefits or Ecosystem Services (ESS) whilst also giving an overview of the structure of the trees and woodlands.

About i-Tree:
i-Tree is a free to use, open-access suite of tools developed to assess the value of the urban forest and the ecosystem services provided:
• Quantifies the benefits and values of trees around the world.
• Aids in tree and forest management and advocacy.
• Shows potential risks to tree and forest health.
• Is based on peer-reviewed international research.

i-Tree Eco is an application designed to use field data from individual trees, complete inventories or randomly allocated plots across the sample area to analyse the forest structure and ecosystem services provided.

Link to relevant corporate policies:

SKDC's Local Plan

South Kesteven and Rutland Infrastructure Delivery Plan

SKDC Tree Guidelines

Design Guidelines for Rutland and South Kesteven

SKDC's Climate Action Strategy

The Charter for Trees, Woods and People

Lincolnshire County Councils' Health and Wellbeing Strategy

Carbon Sequestration

Pollution Removal

Foods

Urban Cooling

Rainwater Attenuation

Carbon Storage

Amenity Value

T8 Wider Environmental Considerations

South Kesteven's trees and woodlands have a vital part to play in the fight against climate change and can be part of both adaptation and mitigation strategies. Urban trees and woodlands are particularly important as a way of reducing the urban heat island effect and in removing air pollution from built up areas and highways. In certain situations, trees can also cool our built up areas in the heat of summer.

Biodiversity is a vital underpinning of a healthy environment. The myriad intricate connections between species all play a role in the creation of rich ecosystems where individual members, such as trees, can thrive.

With the UK target of carbon net neutrality by 2050, SKDC aims to Reduce emissions by 30% by 2030 and be completely net zero by 2050. To achieve these aims, the trees, woodlands and other elements of urban forests are key, alongside emission reductions.

Climate change poses a direct risk to the residents in South Kesteven; a warming climate increases risk of heatstroke, while increased rainfall will cause more frequent and more severe flooding. Biodiversity is also at risk, as species will struggle to adapt to warming climates, earlier springs and mild winters.

These considerations should be taken into account when managing trees and woodlands to ensure that the correct management practices are being enforced, tree and shrub species are as suitable to the future environment as possible and that biodiversity is protected and enhanced, with biodiversity net gain as a key drive.
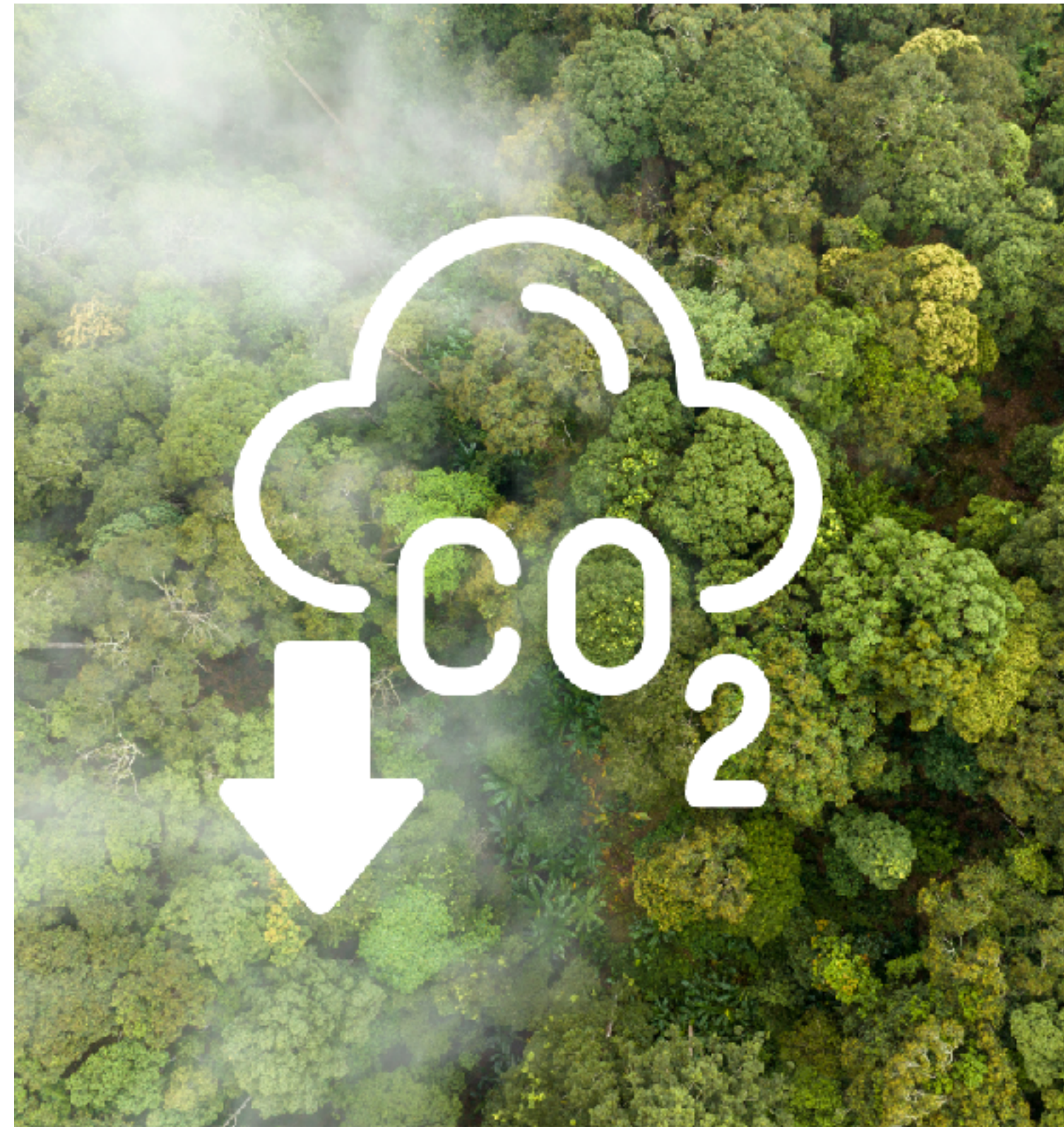
Link to relevant corporate policies:

SKDC's Local Plan

SKDC's Climate Action Strategy

SKDC's Sports and Physical Activity Strategy

Lincolnshire County Councils' Health and Wellbeing Strategy

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Targets and Priorities

3.2 Community Framework

This section considers the various communities that are required for a successful, long term approach to management of trees and woodland. This covers not only the local residents, but local government in all its forms, NGOs and commercial entities.

C1 South Kesteven District Council Departmental Co-operation

This target aims to encourage all departments within SKDC to consult and collaborate with the tree and woodland managers on issues relating to trees and woodland.

Regular communication across departments and agencies will be key to ensuring that trees and woodlands are considered to the fullest extent throughout the council. Key stakeholders to incorporate into this network are planning and development. Other key departments include Lincolnshire County Council and other district and parish councils, which although external to the council, still need to be involved in the process.

Opening communication channels and interdepartmental teams can help to coordinate tree and woodland management by providing knowledge and guidance to all council departments ,when required, in order to ensure that trees, woodland and green infrastructure are considered in full at all stages of decision making.

Link to relevant corporate policies:

SKDC's Local Plan

Colleagues from SKDC

C2   Community Involvement and Neighbourhood Action

At the neighbourhood level, communities and residents groups will be encouraged to participate and collaborate with SKDC and its partnering Non-Governmental Organisations (NGOs) in tree and woodland management activities.

Collaborating with smaller community groups such as volunteers, schools and charity groups can encourage further community involvement with projects in small neighbourhoods and wider District areas, which would benefit the whole District. Neighbourhood activities often help the community members to connect more with their trees and woodlands, and encouraging communities to get involved will reduce the likelihood of conflict or opposition to tree planting.

Creating an interactive Stewardship Mapping and Assessment Project (STEW-MAP) can be a useful tool for helping communities, organisations and individuals understand and manage their natural resources more effectively. It is a research methodology, community organising approach and partnership mapping tool developed by the USDA which shows who is responsible for the local environment. It could be an invaluable tool to engage local residents and establish a network of trees and woodlands capabilities across the district.
At a basic level, in order to create a STEW-MAP it is necessary to identify and involve stakeholders (local communities, environmental groups, governmental agencies, etc.), gather input on what data and features are important to them and identify the types of data needed (geographical, ecological, cultural, etc.). Appropriate GIS software for creating and managing the map must be chosen, with layers and visualisations developed to effectively represent the data. For a STEW-MAP and Assessment Project to be successful, it must engage and serve the needs of the community and stakeholders involved.

Link to relevant corporate policies:

SKDC's Local Plan

The Charter for Trees, Woods and People

Volunteers supporting tree planting in Wyndham Park, Grantham

C3   General Appreciation of Trees as a Community Resource

In order for the strategy to be considered a true success, the most powerful legacy is that the residents of South Kesteven love, respect, appreciate and care for its trees.

Community initiatives could provide an invaluable opportunity to promote the progress made by the District in terms of urban greening and green infrastructure. School and youth involvement is a powerful tool, and volunteer tree wardens schemes have proven very successful all over the country.

Widely publicising events all year round - making good use of digital communications and social media - such as National Tree Week (usually in late November to early December), Arbor Day, planting days (winter time) and outdoor events, will bring focus onto South Kesteven's trees and woodlands, encouraging participation from those that live and work locally.

By engaging and encouraging the community in this way, trees and woodlands will be protected and enhanced for generations to come. Changing peoples' values can be difficult, but through education, celebration and engagement, the hope is that people will come to value the trees around them and the wider part which they play in the health of us all.

The same logic applies to us in our professional capacities as well as private, and also to the organisations that we belong to – private and public, commercial, nonprofit, governmental.

Sources and references:
Clark, J.R., Matheny, N.P., Cross, G. And Wake, V. (1997). A Model of Urban Forest Sustainability. Journal of Arboriculture. Volume: 23. Issue: 1

Link to relevant corporate policies:

SKDC's Local Plan

Design Guidelines for Rutland and South Kesteven

The Charter for Trees, Woods and People

National Tree Week

23 November – 1 December

"Having public agencies, private landholders, the green industry, and neighbourhood groups all share the same vision ... is a crucial part of sustainability. This condition is not likely to result from legislation. It will only result from a shared understanding of ... value to the community and commitment to dialogue and cooperation among the stakeholders."

Clark et al, 1997.

C4   Regional Collaboration

Regional collaboration means engagement with both Lincolnshire County Council and the other Districts that it comprises. It also manifests itself within the District at the level of the Parish Council.

Currently, Lincolnshire county is estimated to have just 4% canopy cover - LCC are working to improve this by planting 750,000 trees across the county (project start: 2021/22) - in an attempt to reach a goal of having one tree for each resident. Community planting days and highways projects have proven successful thus far. South Kesteven could benefit from this scheme by finding suitable space for new tree planting initiatives.

South Kesteven's trees and woodlands have an important role to play in the development of the network creating corridors and joining up habitat for wildlife. Individual woodlands and SSSIs can cross district boundaries; the species that depend upon them certainly do. Coordination on the management and public engagement regarding these vital green assets should provide better outcomes at lower costs.

South Kesteven District Council has worked closely with the Lincolnshire County Council in delivering the Local Authorities Treescapes Fund planting projects in 2021/2022.

Sources and references:
Linclonshire County Council - https://www.lincolnshire.gov.uk/news/article/1129/a-tree-for-every-resident-help-us-reach-our-tree-planting-target

Link to relevant corporate policies:

Lincolnshire District Councils' Health and Wellbeing Strategy

C5 Utilities Co-operation

C5 aims to ensure that all utilities – above and below ground – employ best management practices and cooperate with SKDC to advance goals and objectives related to urban forest issues and opportunities. This includes electric, gas, water, cable, telephone, fibre-optics, etc.

Utilities are required to follow certain standards for managing vegetation – including pruning branches, protecting roots, and performing overall management of trees and other vegetation that could impact their services, and District policies may also regulate certain utility management practices, such as overhead line clearance. Introducing and enforcing best practice standards which protect trees and other elements of the urban forest will be key, and collaboration with utilities could help advance the goals and objectives of the Tree and Woodlands Strategy.

Some utilities extend beyond the South Kesteven area. Figure 11 shows the water catchment areas which supply South Kesteven.

These areas are not constrained by political boundaries, and this should be taken into account when assessing how the urban forest and utilities interact. Water companies should also be encouraged to develop systems in which trees provide a vital role in water management.
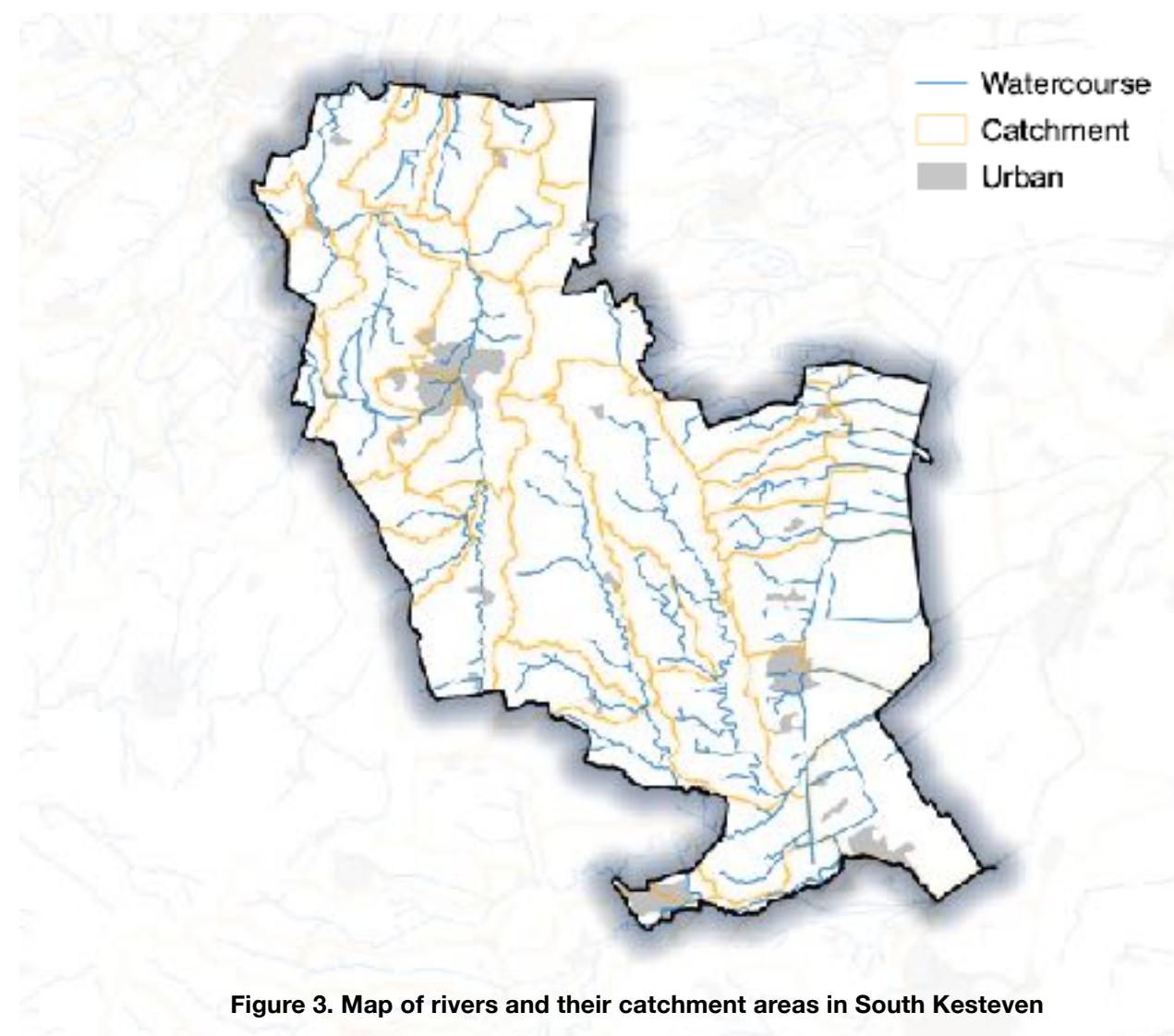

Legend:
- Watercourse
- Catchment
- Urban

Figure 3. Map of rivers and their catchment areas in South Kesteven

View from the White Bridge in Wyndham Park, Grantham

C6 Green Industry Co-operation

The "green industry" encompasses all professions and businesses that routinely support or engage in tree and vegetation management activities. Among others, these can include landscapers, nurseries, garden centres, contractors, maintenance professionals, tree care companies, landscape architects, foresters, plannersand developers.

SKDC will work together with green industries where relationships already exist to advance District-wide trees and woodlands goals and objectivesand adhere to high professional standards. Where appropriate, this will be done in conjunction with Lincolnshire CC and local parish councils.

Close co-operation with the green industry presents an excellent opportunity to influence management of the forest resource on private property.

South Kesteven is a large District, with the vast majority of the land area used for farming. Modern advancements and demands also mean that more open fields are being used for solar energy generation and wind farms.

Given land-holdings within South Kesteven include these key sectors for focused co-operation:

- Farming
- Renewable Energy (Wind & Solar)
- Forestry
- Tree Surgeons

Canopy Overlap Percentage
- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
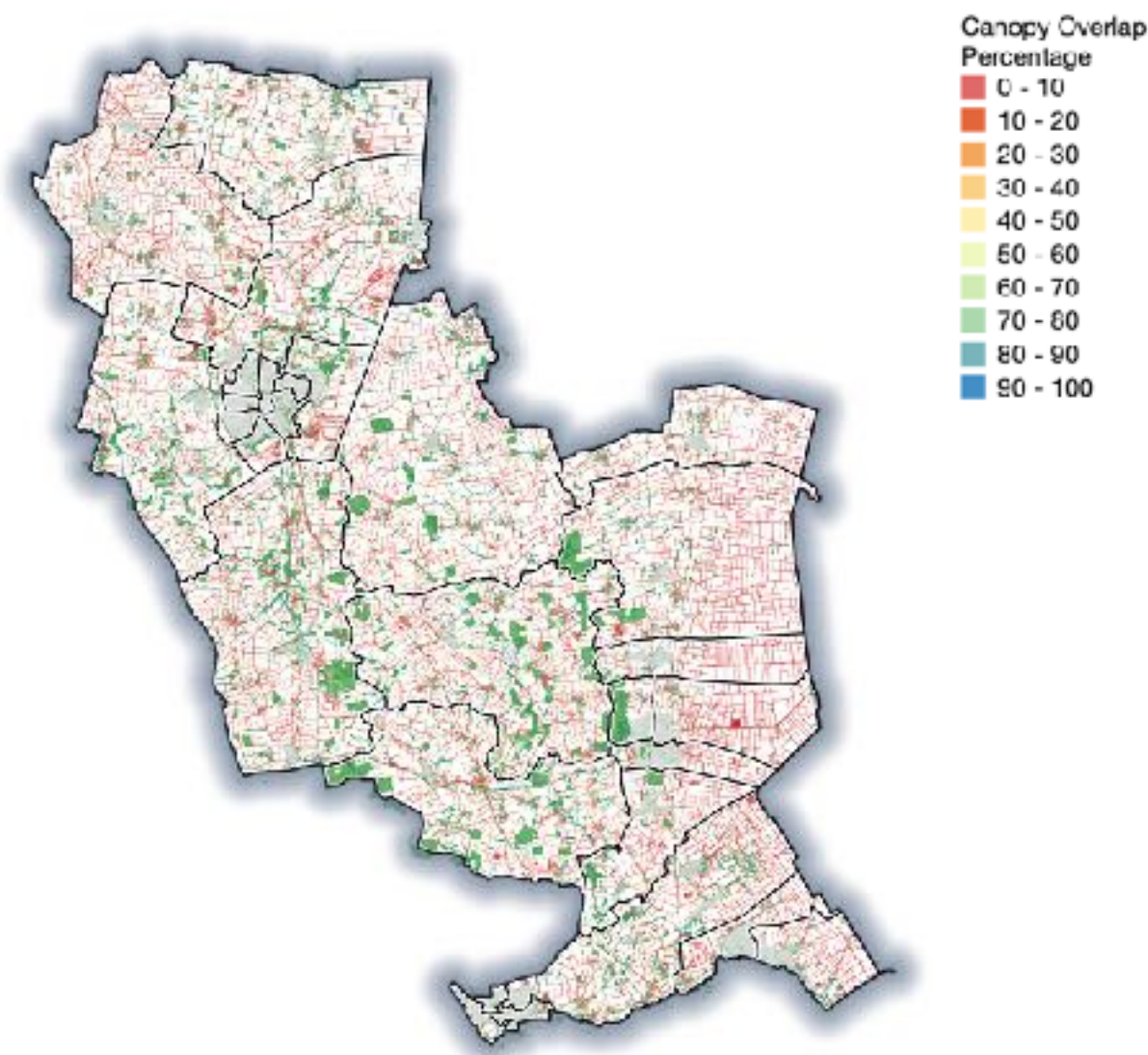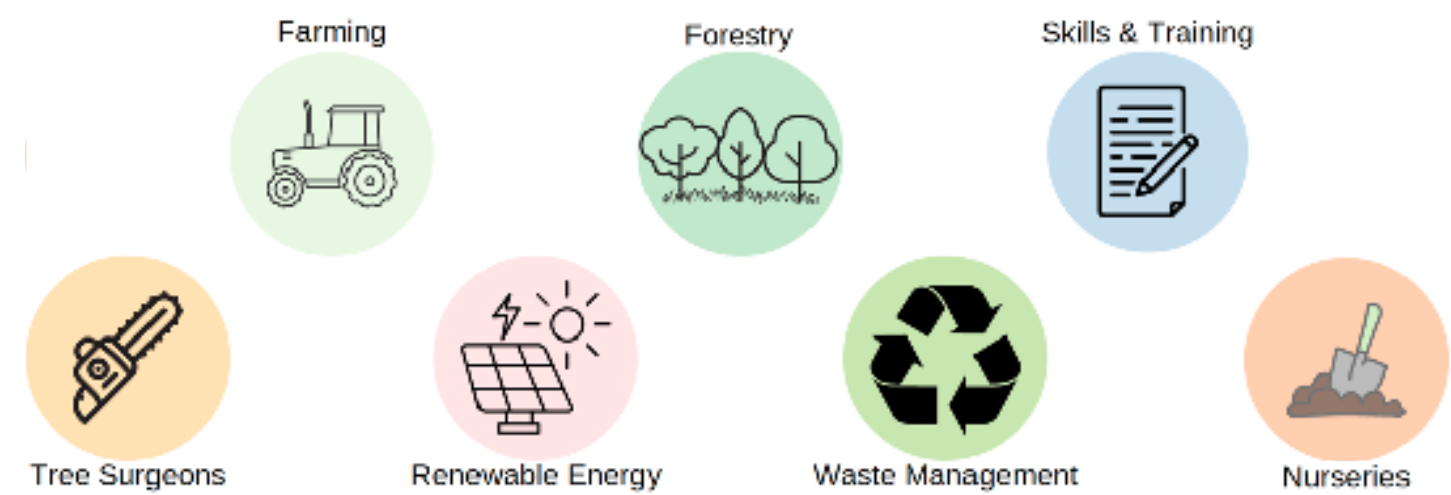- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100

Figure 4. Map of hedgerows across South Kesteven coloured by the amount of tree canopy within them. Red indicates low tree cover, whilst green and blue indicates high tree cover.

Link to relevant corporate policies:

SKDC's Climate Action Strategy

Farming   Forestry   Skills & Training

Tree Surgeons   Renewable Energy   Waste Management   Nurseries

C7   Involvement of Private and Institutional Landholders

As a large proportion of land within the District is owned by private individuals, organisations and institutions, enlisting their help in enhancing and protecting trees and woodland is paramount. Outreach programmes, management plans and funding strategies will help to incorporate these landholders.

Communicating the benefits of trees will help inspire landholders and institutions to invest time and money in natural resources.

The goal is to help large private landholders embrace and advance District-wide tree and woodland goals and objectives by implementing specific resource management plans so that they can manage trees on their property in the most beneficial way.

There is also a also a suite of supplementary planning documents and Local Plan supporting documents for large developers such as:

- Design Guidelines for Rutland & South Kesteven SPD
- Local Plan Sustainability Appraisal (incorporating Strategic Environmental Assessment)
- Habitat Regulations Assessment

The Local Plan is being reviewed. To inform the new Local Plan the following has been undertaken:

- Biodiversity Opportunity Mapping
- Green Infrastructure Mapping
- Open Space, Sports and Recreation Study

www.southkesteven.gov.uk/planning-building-control/planning-policy-local-plans

Link to relevant corporate policies:

SKDC's Local Plan

SKDC's Climate Action Strategy

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C8 Governance and Leadership

The aim of this target is to help all departments and agencies within SKDC to communicate and cooperate to advance goals and opportunities and address issues related to South Kesteven's treescape. Presently, SKDC work with other NGO's and agencies when necessary, however, building a focussed network of urban forest partners would be desirable. Following stakeholder workshops it was agreed that the creation of a South Kesteven Tree Board would benefit the District providing leadership and co-ordination in managing the District's treescape

As well as SKDC, a number of external partners will work with the council to manage and maintain the treescape. This includes, among others, Parish Councils, the Wildlife Trust, the Woodland Trust and the Local Nature Partnership.

Market Deeping

Targets and Priorities

3. Sustainable Resource Management Approach

This section considers deals with the practical management of the trees and woodland resource. For much of the trees and woodlands of South Kesteven District, this can mean seeking to engage and influence other land owners.

R1   Tree and Woodlands Inventory

A tree and woodland inventory is an exercise to take stock of the assets within the District as a whole. An understanding such as this is an essential starting point for establishing the structure of the trees and woodlands, including the number of trees, diversity of species and age distribution.

Inventory methodology needs to get the nature of the tree assets. Individual trees, often under a risk management protocol, or within a Tree Protection Order database, can be dealt with in detail in turn. Woodland trees and other large groups are more cost-effectively measured on a sample basis.

Sampling is also a very cost effective mechanism for establishing an understanding across all ownerships, where limited access to property is required, with remote sensing often allowing part of the task to be carried out without a site visit.

An inventory allows the setting of a baseline from which to monitor future progress and from which to manage the tree stock.

SKDC currently has an inventory of some publicly owned trees, however, a more comprehensive understanding of trees and woodlands across both public and private land is desirable.

Link to relevant corporate policies:
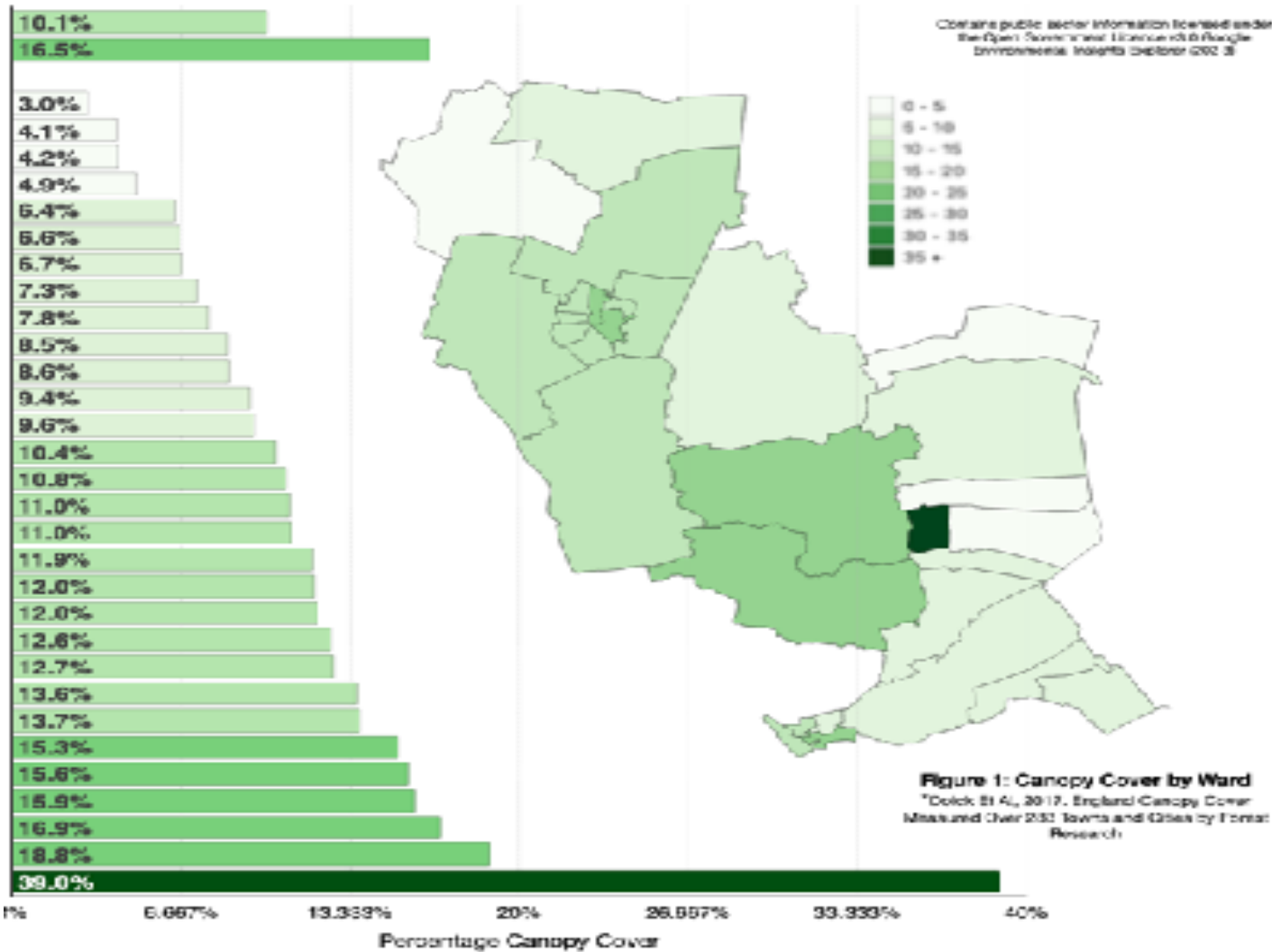
SKDC Tree Guidelines

R2   Canopy Cover Assessment and Goals

Assessing canopy cover is vital, as this metric is used frequently as a figure which is clear and easy to compare with other areas. Whilst canopy cover is not a thorough study of the health and diversity and therefore overall benefit of tress and woodlands, it is an important aspect which should not be overlooked simply for its simplicity.

This target involves assessing the existing canopy cover in detail, and setting goals based on reasonable potential canopy cover and achievable steps to maximising cover. This leads into T1-'Relative Tree Canopy Cover'- and would provide the necessary baseline for achieving that target. It is important that any tree canopy target is achievable within a reasonable time frame, and considered within the wider context of the strategy.

The IUCN Urban Alliance suggest a 30% tree canopy cover target, which has been adopted by many cities around the world.

It should also be noted that tree planting does not necessarily provide an instant increase to canopy cover; in an urban setting trees are constantly being felled for any number of reasons, so insufficient planting can contribute to making up the deficit without actually increasing canopy cover.

Figure 1: Canopy Cover by Ward
*Doick Et Al, 2017. England Canopy Cover Measured Over 283 Towns and Cities by Forest Research

City	London	Bristol	Plymouth	Cambridge	Torbay
Existing Canopy Cover	21% (2015)	18% (2018)	18.5% (2017)	17% (2008)	12% (2011)
2050 Target	30%	30%	20%	19%	20%

Table 2: Other Canopy Cover Estimates and Goals

Link to relevant corporate policies:

Climate Action Strategy

R3   Tree Valuation and Asset Management Approach

Tree valuation is an important part of managing and promoting trees and woodlands. With the trees valued, local people can understand the value of trees beyond the material worth. With these figures to hand, advocating for trees becomes easier.

Capital Asset Valuation of Amenity Trees (CAVAT) was developed by the London Tree Officers Association (LTOA) and others in 2008. It is one of the principal methods of tree valuation in the UK, and aims to provide a method for managing trees as assets rather than liabilities. It can be used for individual trees or for the tree stock as a whole. Documents related to CAVAT including a user guide and the spreadsheet calculator can be viewed online at: **https://ltoa.org.uk/documents-1/capital-asset-value-for-amenity-trees-cavat.**

The CAVAT system is only really appropriate when applied to trees that are visible to the public. Furthermore, SKDC's individual woodlands are currently not subject to an asset valuation. These knowledge gaps will be addressed in the future.

The various valuation systems all use tree measurements as their starting point, larger trees generally being worth more. This infers that any valuation of trees can only be done following the creation of a tree inventory or plot based sample study (R1).

Link to relevant corporate policies:

The Charter for Trees, Woods and People

Bourne Memorial Gardens

R4   Green Network Connectivity / Woodland Creation

Green network connectivity is vital for maintaining habitats at a scale suitable for our native species. A core principle in understanding such a network is to see it as a hub and spoke configuration. Hubs are those areas with the richest concentration of flora and fauna and usually the highest level of statutory protection. Good candidates to build a hub and spoke approach within South Kesteven are the towns and major road networks, Sites of Special Scientific Interest (SSSI's), special areas of conservationand areas of ancient woodland.

South Kesteven has large areas of Grade 1 and Grade 2 agricultural land preventing large scale woodland creation. For this reason green network connectivity has focused on the Districts hedgerows. A mapping exercise was carried out to establish where hedgerow creation and enhancement may be used to improve connectivity. Datasets expressing the percentage field boundaries are overlapped by tree canopy, with a percentage figure of how much each hedge-line or boundary line is overlapped by canopy. This gives an indication as to the "gappyness" of hedges whether 100% covered in canopy or not at all.

Link to relevant corporate policies:

SKDC's Local Plan

South Kesteven and Rutland Infrastructure Delivery Plan

SKDC's Sports and Physical Activity Strategy

Canopy Overlap Percentage
- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100

Map of hedgerows across South Kesteven coloured by the amount of tree canopy within them. Red indicates low tree cover, whilst green and blue indicates high tree cover.

R5   Environmental Justice and Equity

South Kesteven District Council have declared a climate emergency, recognising the threat to people, animals and habitats worldwide. Within South Kesteven District, those threats are likely to arrive in the form of hotter drier summers and warmer wetter winters - more periods of drought, more heat and a greater risk of surface flooding.

Trees have a significant role to play in creating resilient places to live for both humans and wildlife. Their largest contribution is the through the active cooling created by evapotranspiration as the trees draw water up from the ground when actively photosynthesising. Combined with physical shade, this can lower temperatures to a point where it can still remain quite pleasant to be outdoors even in the heat of the day.

Trees also, by virtue of their expansive canopies, capture water before it gets to the ground, reducing surface water run off. In using water as part of their natural growing processes, they also create space in the soil for new water ingress to take place at the next rainfall.

Trees are one of the most important tools in the climate resilience toolbox. It is important that they are deployed on as wide a basis as possible, which will require identifying and then addressing ares with lower tree cover.

This target aims to ensure that the planting and management of trees can be focussed in the areas where it will most benefit the local people, by increasing planting in the areas with the lowest canopy cover. Tree management plans in these areas   include community engagement and neighbourhood outreach to maximise the benefits of trees in the area.

Link to relevant corporate policies:

SKDC's Local Plan

South Kesteven and Rutland Infrastructure Delivery Plan

SKDC's Sports and Physical Activity Strategy

Lincolnshire District Councils' Health and Wellbeing Strategy

Autumn in Market Deeping

R6   Funding

Securing sufficient funding on an annual basis is vital to not only secure and grow local municipal funding, but also to expand and diversify finances for tree and woodland funding.

There are several government schemes for funding tree planting of different types, from woodland establishment to urban forestry.

Whilst funding for tree planting is readily available, funding for management and monitoring of trees and woodland needs further investigation.

Private-sector funding as well as funding from one-off projects offer additional opportunities.

Three broad routes exist:

1. External funds from central government directed at different parties e.g.
    i.   Urban Tree Challenge Fund (UTCF) for street trees
    ii. Local Authority Treescapes Fund (LATF) for other trees and replacement street trees
    iii. ELMS
2. External funds from major NGOs such as the Woodland Trust Emergency Tree Fund
3. Levies and agreements within the planning system- best practice directs funds within developments to make good / surpass any tree loss on a fully funded basis using a more appropriate metric than tree numbers, which do not reflect the impact on ecosystem services from the loss of large trees.

Link to relevant corporate policies:

SKDC's Local Plan

Wyndham Park, Grantham

R7   Capacity and Staffing

Adequate staffing means there are enough staff with the correct training and experience to carry out all necessary tasks relating to the implementation and day-to-day running of the tree and woodland programme. This may mean hiring new staff or arranging further training for current staff.

This includes anyone involved in the delivery of tree management and implementation, e.g., Tree Wardens and other volunteers, Tree Officers, Parks and Countryside staff, etc.
One of the key limiters of this target is money, therefore fully costing the Tree Strategy and establishing a dedicated and coordinated budget is the first step.

A fully costed budget to deliver this plan can be used to help obtain the necessary funding to deliver the plan. This funding would then allow for the important longer term work.

One approach may be to encourage SKDC and LCC to promote future employment training for school leavers. If there is capacity within the team and budget, develop a work experience programme to encourage the next generation to be highly skilled in land based industries (Grow your own).

Tree planting initiatives

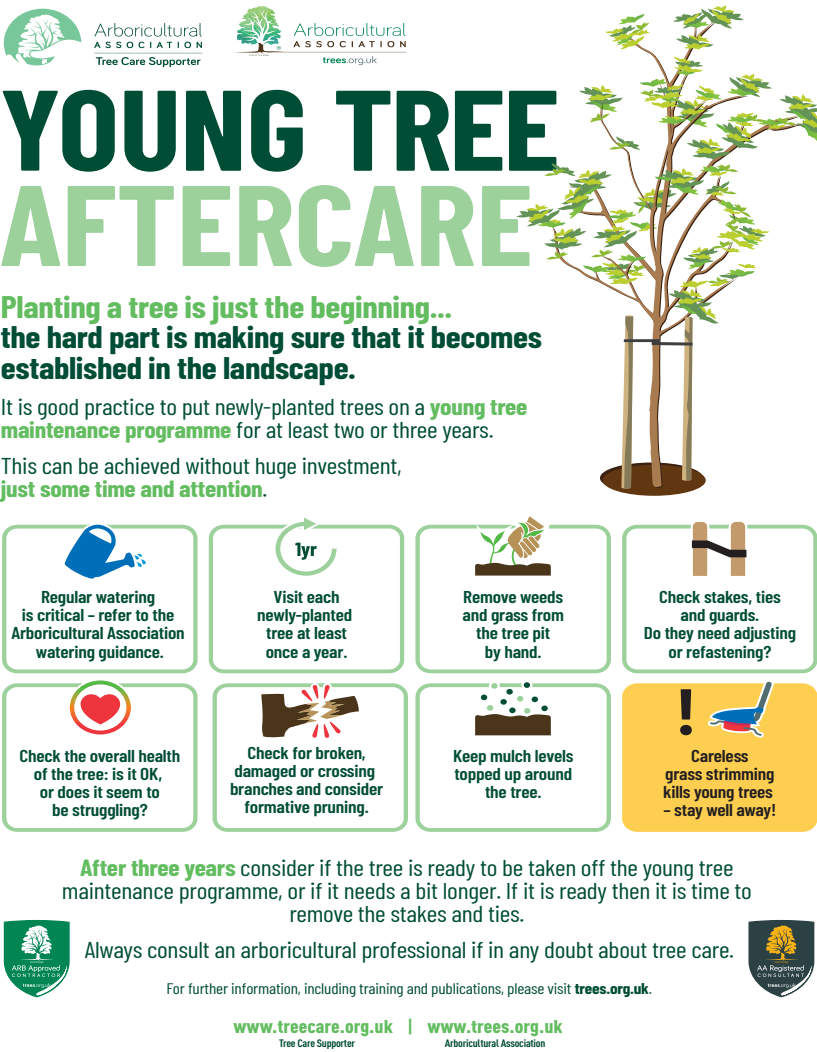# R8   Tree Establishment - Planning and Implementation

Tree planting is more complex than most people realise; it is more than simply sticking trees in the ground. In order to ensure the trees survive, thrive and reach their full potential, the right tree species must be selected, be planted in the right place, be planted for the right reasons and be planted and maintained in the right way. This way, the trees are given the best chance to survive and avoid being removed again further down the line.

Right reason- Tree planting should focus not just on quantity, but also quality. Trees can benefit future generations by mitigating climate change, improving biodiversity and enhancing health and well-being.

Right place- Location is key when planting, particularly where conditions can be less than ideal. Trees require space to grow, both above ground and below, of a scale appropriate to its size when fully grown. Potential conflicts should be understood early before deciding to plant.

Right tree- The benefits and drawbacks of different species must be considered, including site suitability, climate tolerance, size, rooting characteristics, aesthetics (canopy, leaves, flowers, etc.), ecosystem service provision, biodiversity and more.

Right way- How the tree should be planted may vary depending on where the tree is, but all trees need the same essentials: good soil volume for root establishment, water, particularly for young trees and trees in urban areas which may struggle, air and support to keep it upright whilst its roots establish, protection from damage, and maintenance. In urban areas, hard paved impermeable surfaces present challenges which trees are not adapted to deal with, such as soil compaction, nutrient recycling and reduced water infiltration. These issues should be considered to help establish a healthy, long-lasting urban forest.

Source: Young tree aftercare: https://www.trees.org.uk/Trees.org.uk/media/Trees-org.uk/Documents/Tree%20Aftercare/Young-Tree-Aftercare-A3-web.pdf

Link to relevant corporate policies:

Design Guidelines for Rutland and South Kesteven

R9   Growing Site Suitability

This target links to the R9 target, specifically on choosing the right tree. Often trees are selected purely for their aesthetic attributes, however this can mean that   the tree suffers if the site conditions have not been taken into account.

Site suitability should be investigated from the ground up, starting with soil. Urban soils are often very poor or non existent, so it is vital to know what is there and what the tree will need before it is planted. Other site considerations include the amount of light, ie if the tree will be in permanent shade from buildings or not, the amount of impermeable service surrounding the site which would limit the amount of water infiltrating through to the roots, and the amount of space both above ground and below ground to facilitate tree growth. Once these things have been assessed, the right tree can be planted in the space.

Guidelines should be put into place for all tree planting, to ensure that trees can fulfil their maximum potential and provide the maximum benefit for the District. Any planning relating to trees should adhere to BS 8545 (Trees: from nursery to independence in the landscape) and BS 5837 (Trees in relation to design, demolition and construction). In particular, trees must be a priority in planning and development rather than an afterthought to ensure they are given enough space to mature. This should be extended for both public and private development and consistently enforced. This links to R10-'Tree Protection Policy Development and Enforcement'.

Link to relevant corporate policies:

Design Guidelines for Rutland and South Kesteven

Tree cover in Queen Elizabeth Park, Grantham

R10   Tree Protection Policy Development and Enforcement

Urban trees are sometimes viewed as irritating and costly, dropping leaves on lawns, causing blocked drains, and damaging foundations and pipes with their roots. They may also be considered dangerous as branches can fall seemingly without warning, if they are not managed. For all these reasons and more, people may want to remove trees from public land or private properties.
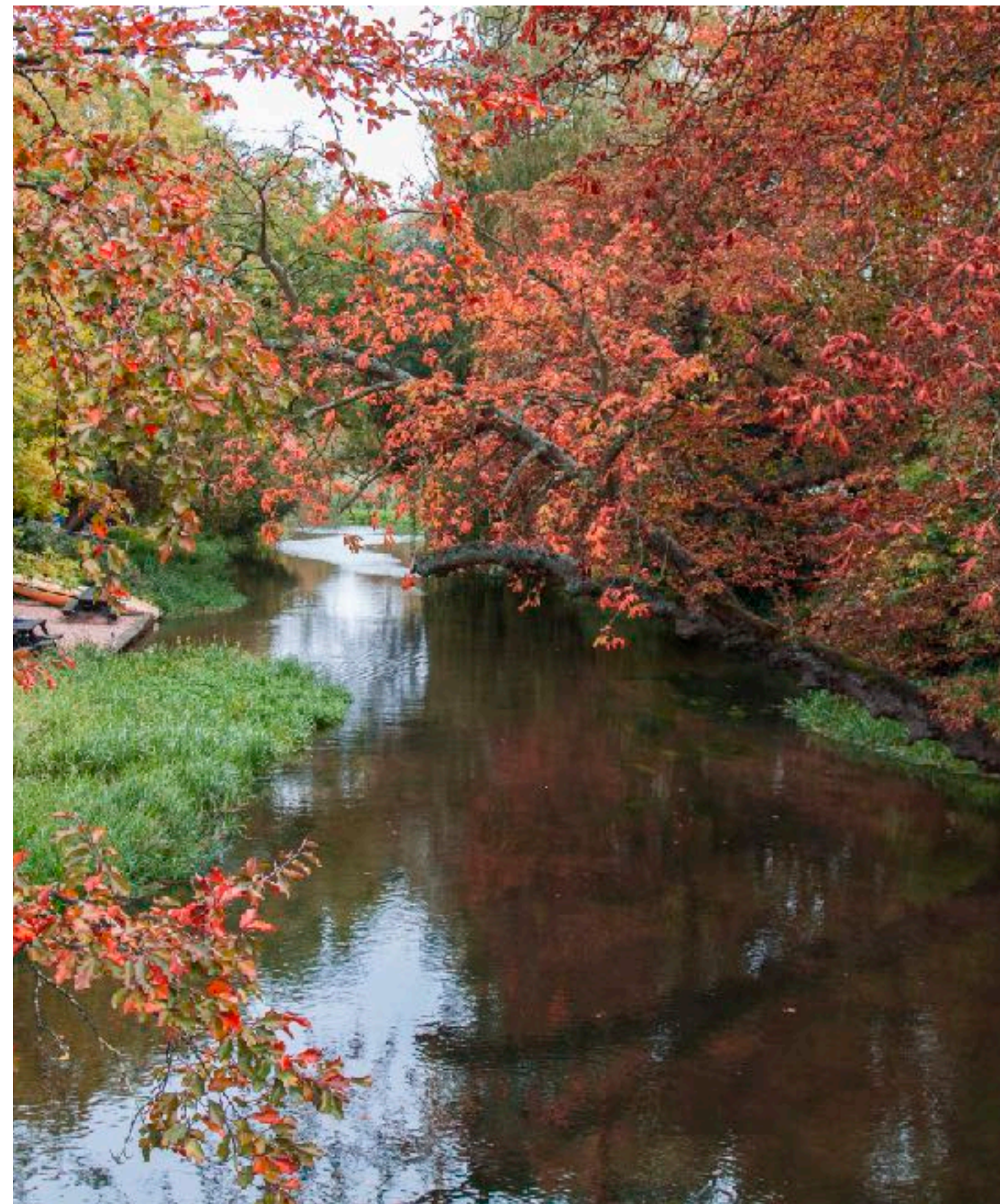
Trees can and should be protected, and most councils have guidance in place; South Kesteven have conservation areas and Tree Preservation Orders (TPO's). Trees may also be protected as part of planning conditions associated with planning approval. To carry out works to a tree protected by a TPO consent from the Local Planning Authority is needed through submitting a tree works application.

To carry out works to a tree in a conservation area a six-week notice of intention must be submitted to the Local Planning Authority. This is known as a 'Section 211' notice. The Local Planning Authority can either accept the notice or make a TPO.

Polices and guidelines must be enforced in both public and private sectors. The public must be made aware of these policies to ensure they are kept up to date with the best practice guidance and ensure they know where and how to find further information before undertaking any work.

Under the Town and Country Planning legislation the local planning authority may protect important trees in the District by making Tree Preservation Orders. Any unauthorised works to such protected trees is a criminal offence. Trees in Conservation Areas are also afforded a degree of protection under the planning legislation. Unauthorised work to and/or removal of trees in a Conservation Area also constitutes a criminal offence.

The Council has powers to prosecute offenders and/or require replacement trees to be provided. In circumstances where it is a first offence, the Council may offer the defendant a caution and ask for a contribution towards their costs instead of a formal prosecution. If there is a repeat offence, the caution will be presented to the courts in any subsequent prosecution.

Link to relevant corporate policies:

SKDC's Local Plan

SKDC's Tree Guidelines

Autumn in Market Deeping

R11   Trees, Woodland and Green Waste Utilisation

Trees are a resource in many ways, from providing ecosystem services like carbon storage and pollution removal to bearing fruits and supporting wildlife. Often when a tree is felled the branches are chipped and used for mulch or compost, with larger timber being used for firewood or biomass energy.

However a tree's value as a resource does not necessarily end when the tree dies or requires felling.

Although much green waste is used for composting there is potential to generate income through the by-products of tree and woodland management. Trees can be processed into various wood products like timber for construction, furniture, or artisan crafts.

R12 Tree Risk Management

Existing tree management policy covering South Kesteven DC owned trees is not under review within this trees and woodland strategy. However, these are its principal components :

- tree/woodland maintenance
- tree protection policy
- risk management

Existing practice for risk management and associated tree maintenance is considered to serve South Kesteven District well and is in keeping with its scale in terms of both numbers of residents and budgets.
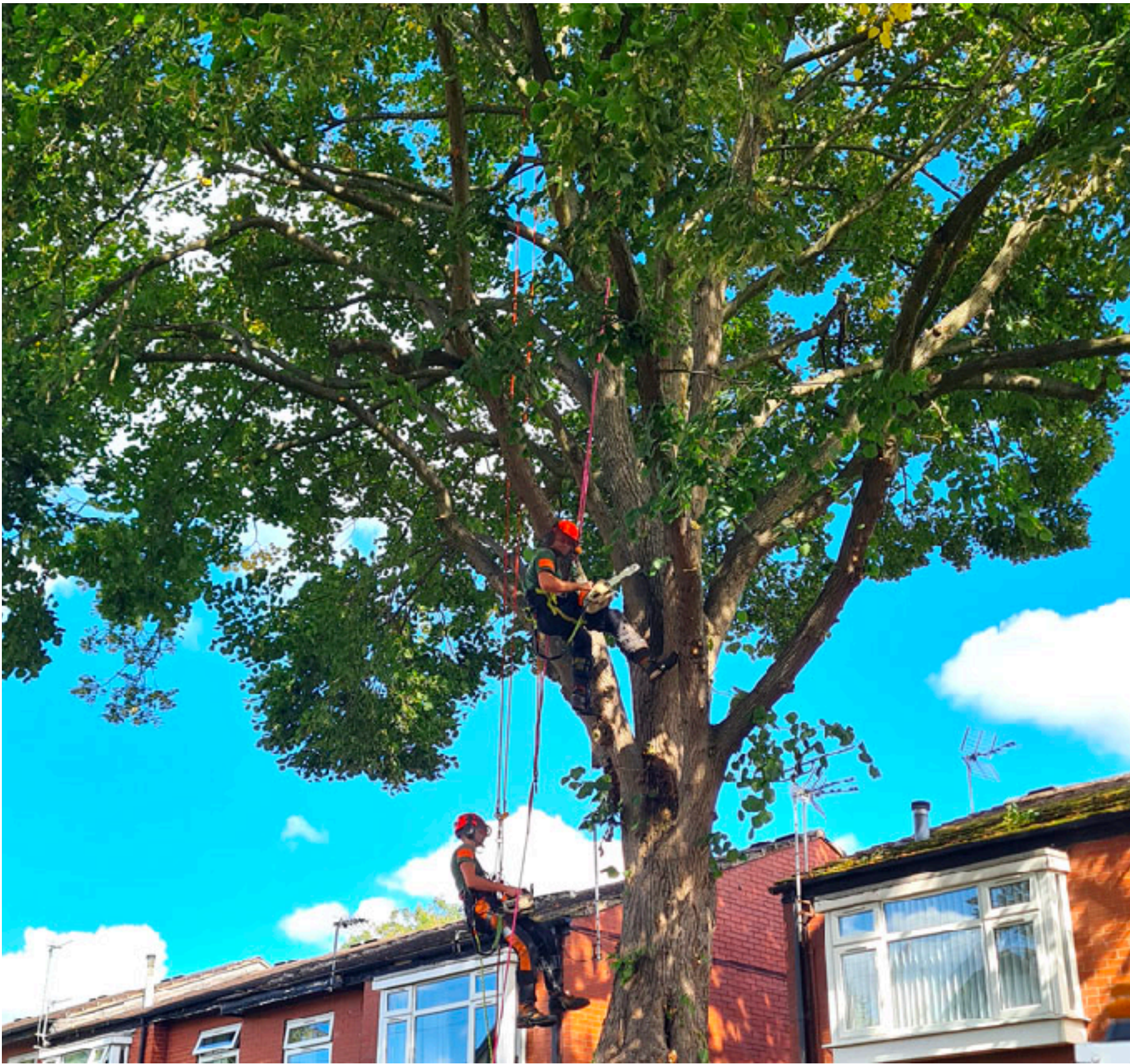
Tree preservation orders (TPOs), intended to protect significant/important trees irrespective of ownership is an area where improved communication (see section 3.2) combined with more consistent enforcement could have substantial impact.

Sources and references:
National Tree Safety Group. (2011). Common sense risk management of trees. Forestry Commission

Link to relevant corporate policies:

South Kesteven and Rutland Infrastructure Delivery Plan

SKDC's Tree Guidelines

R13   Biosecurity

Biosecurity refers to the need to prevent new pests and diseases being introduced into the UK from abroad. This measure is necessary to stop the spread of potentially devastating organisms and protect forestry, agriculture and horticulture. In recent history, the introduction of Dutch Elm Disease (*Ophiostoma novo-ulmi*) killed 20 million mature English elm trees between its introduction in the late 1960's and 1980. By 1990, this figure had risen to 25 million- over 85% of the British population. Now, Ash Dieback (*Hymenoscyphus fraxineus*) is sweeping through the country and will likely kill off 80% of ash trees across the UK.

These diseases and others will continue to have a profound effect on trees and woodlands. Native tree species provide vital habitat for many other species and without them there would be a huge ecological deficit.

The importation of trees, particularly large landscape trees, from across Europe and elsewhere can increase the risk of diseases being introduced to the UK.

South Kesteven District Council must take responsibility for the sourcing of its trees, and actively work to eliminate pests and diseases from its trees and woodlands and prevent new diseases becoming prolific.
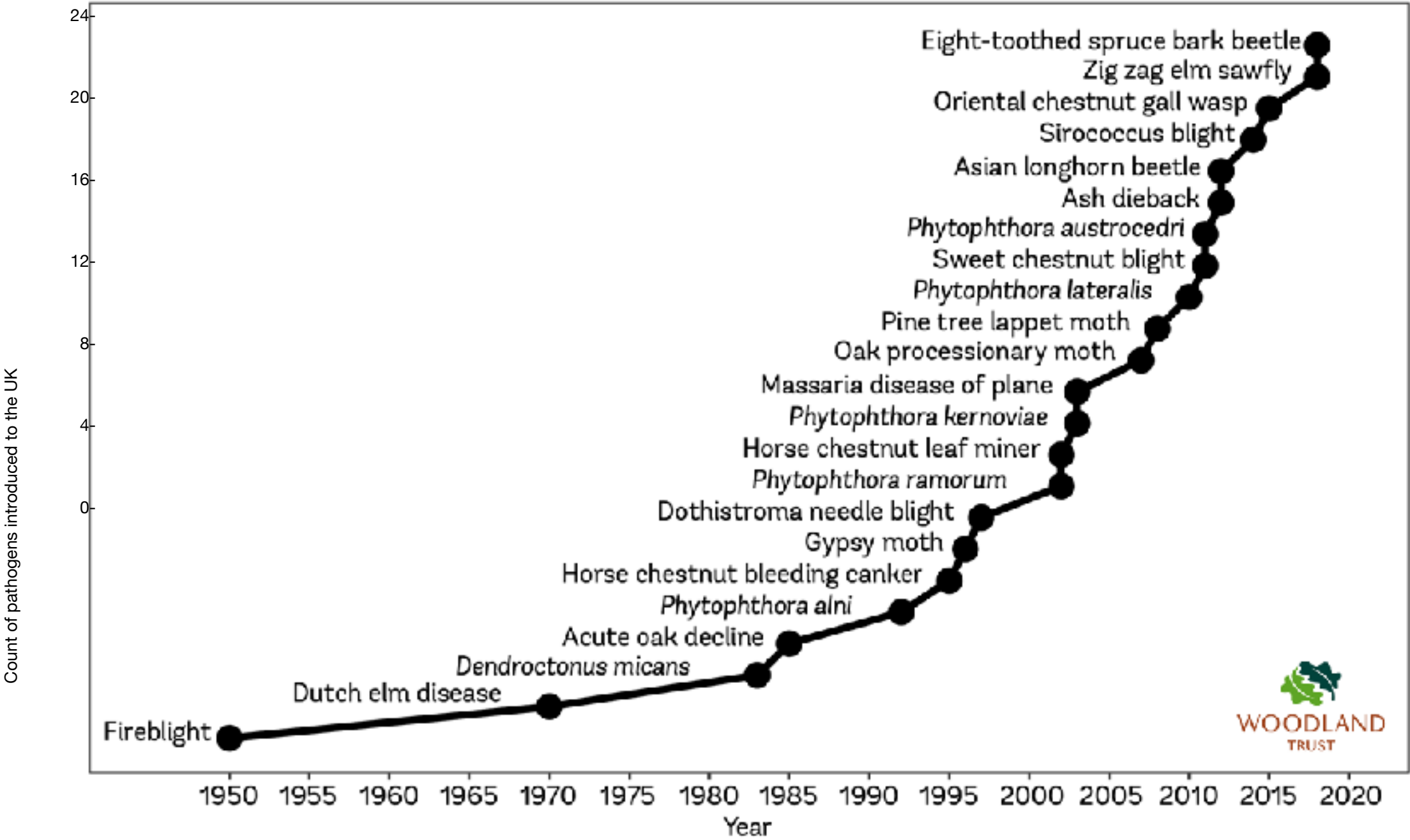
Figure 6: Tree pest and disease introduction in the UK

R14   Native and Non-native Trees

Trees and woodlands are a diverse place, consisting of a range of trees and plants from all over the world. Whilst diversity is key to a healthy treescape, native plants should be selected above non-native species whenever appropriate. Native species of trees, shrubs, fungi, ferns, insects, mammals, birds and more have evolved together in the UK, each finding and filling an ecological niche in which to thrive.

The balance between species in an ecosystem is delicate: just one missing link could tip the system out of balance.

Trees provide habitats for a whole range of species. In the UK, English oak (*Quercus robur*) supports more organisms than any other tree; more than 1,000 insect species have been identified to date on oaks in central Europe, with at total of 2,300 different species relying on oak in the UK. Without native trees, other native species may struggle to find suitable habitats and therefore suffer.

Sources and references:
PuRpOsE: Protect Oak Ecosystems, 2019. https://protectouroaks.wordpress.com/work-packages/wp4/purpose-impact-event/
https://herbaria.plants.ox.ac.uk/bol/ancientoaksofengland/distribution
The Woodland Trust. (2022) Ancient Tree Inventory -

R15   Open Data and Web-map (Management and Assessment Tools)

Management and assessment tools are fundamental and indispensable when considering a resource as vast as the urban forest. Being able to clearly see tree data would help the trees and woodland management team keep track of the trees, and make the public aware of them and their value.

A web-map is an interactive tool for displaying information to the public about trees and woodlands, and data can be broken down by parish and ward. They can display a range of things including tree benefits such as canopy cover, annual ecosystem benefits (avoided runoff, carbon sequestration, air pollution removal), and tree condition, to name a few. They are an excellent way to engage with the public and communicate benefits of trees.

In creating a public web-map, tree data could be easily communicated and compared. Ideally the tool will be accessible, easy to use and comprehensive for all the trees and woodlands of SKDC. The data should be kept up to date with the most recent reviews of the urban forest.

Implicit in the creation of a web map is the collection of the data that underpins it - see R1
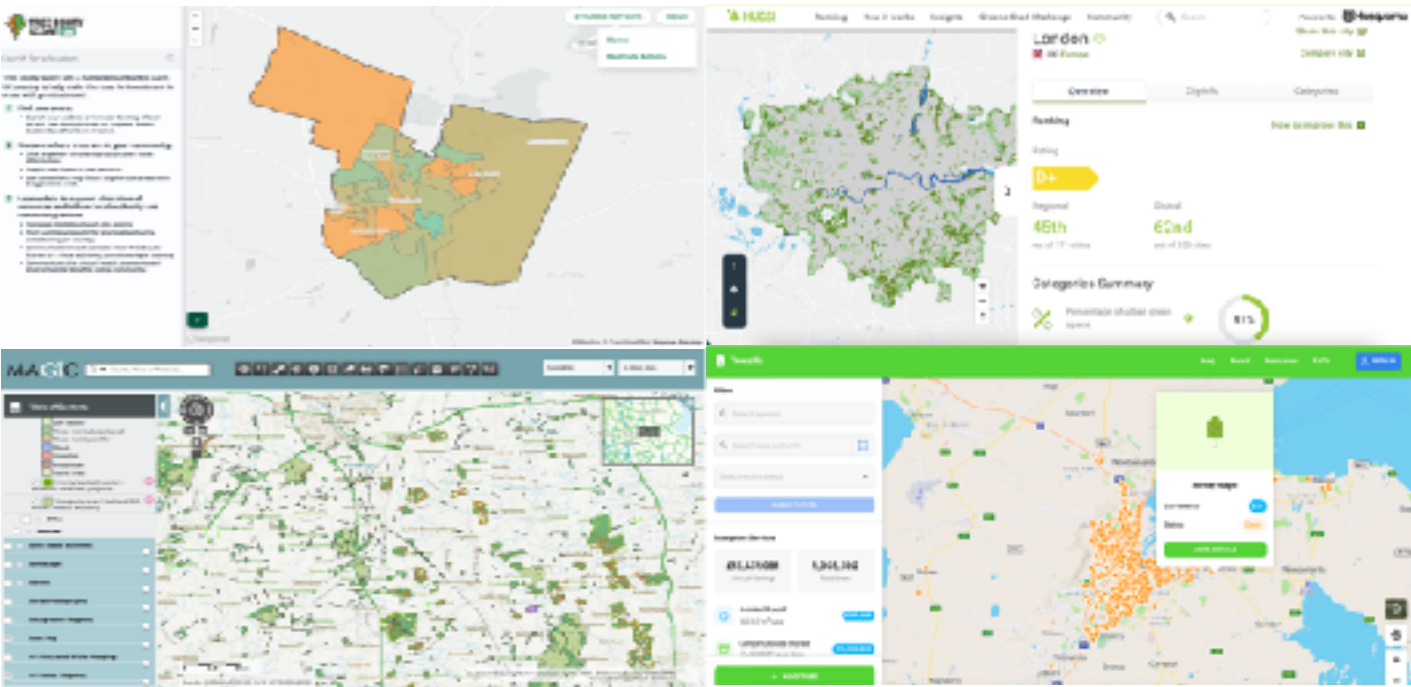

Figure 7: A selection of online mapping tools.
Top right - Hugsi (https://www.hugsi.green/city/?London)
Top left - Tree Equity Score UK (https://uk.treeequityscore.org/map#11.72/52.9204/-0.626)
Bottom Left - DEFRA's Magic Map (https://magic.defra.gov.uk/magicmap.aspx)
Bottom right - Treezilla (https://treezilla.org)

R16   Reviewing and Improving the Strategy

South Kesteven District Council is taking a strategic approach to its trees and woodlands. It follows an action based model more widely used in countries like the US and Canada. The Plan will help South Kesteven District Council set and work towards a vision for its trees that is sustainable well into the future.

The Trees and Woodlands Strategy outlines a vision for the development of the urban and rural tree resource. It provides a long-term framework in which strategic plans can be developed.

Tree-planting programmes are just one element of tree and woodland management, and long-term management plans are just as important. With a tree and woodland management plan in place, tree planting programmes can be focused and strategised, as well as better guiding the achievement of a long-term vision.

With agreement on an ambitious vision, the Tree Strategy can be divided into management periods, with goals and targets clearly outlined. A series of performance indicators will then be put into place to monitor performance and help progress towards the achievement of goals and the wider vision.

 It is important that progress is monitored and reviewed on a regular basis, and actions modified as necessary. This way, SKDC can focus on the most relevant and urgent areas going forward.

The Tree Strategy is an ongoing piece of work and this document represents the first step and will be subject to ongoing improvement and updating. For each and every target within the plan, further detail will be added and projects will be planned and actioned to take SKDC towards its vision.

South Kesteven District Council
Trees & Woodland Strategy
2024 - 2034

Alternative formats are available on request: audio, large print and braille

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