

Bexhill's Tree Planting Strategy



Green Recovery Challenge Fund



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Environment
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Forest Research

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Foreword

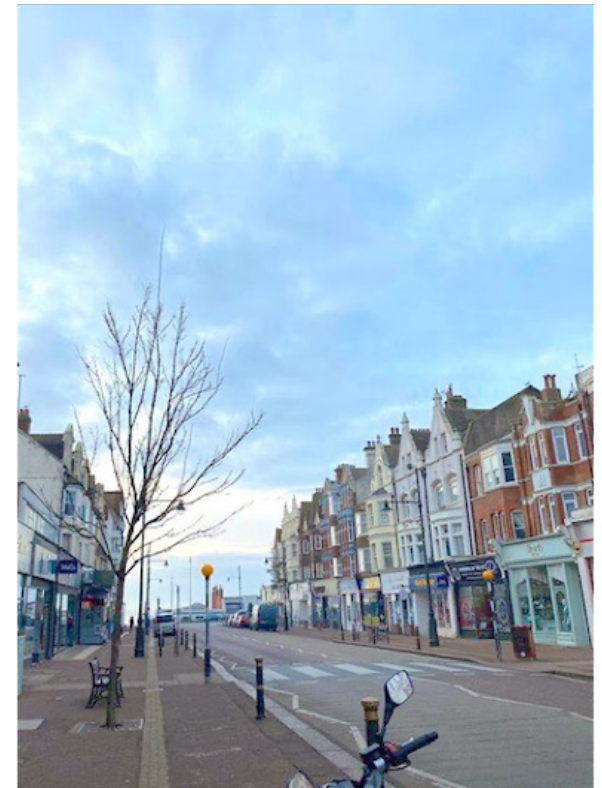
Recent events, most notably the coronavirus pandemic, have given rise to a need for a period of recovery across the UK. A coinciding need to meet the increasingly prominent challenges of environmental degradation and climate change has led to an approach not seen before in the UK - a 'green recovery'. Bexhill has, like many other coastal areas in UK, been overlooked when it comes to funding this green recovery. Trees for Cities has recognised this and made Bexhill one of its area of focus for its 'Forgotten Places: Greening Coastal Towns and Cities' project.

Through this initiative, Rother District Council was able to commission Treeconomics, in partnership with Forest Research to create the 'Urban Forest 1066' report providing an overview of the current state of the Urban Forest.

This strategy document builds upon 'Urban Forest 1066' to set out both medium term goals and practical next steps related to tree planting. This has been achieved through a mix of digital mapping, physical site visits and reference to industry expertise. It contains insight into the particular species that appear to thrive within the local Bexhill context as well as similar coastal locations. Furthermore, it encapsulates activities on the ground related to both District-driven green open space planting and County-enabled street tree planting to give a full picture. Consequently, this Tree Planting Strategy should act as a guide and reference to help create a greener Bexhill for all.

"More Trees for All Bexhill"

That all the people and communities of Bexhill have easy access to the health, nature, and climate benefits of trees and that Bexhill's Urban Forest continues to grow and thrive as a robust, resilient, living asset.



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Executive Summary

In 2021, Rother District Council (RDC) published its comprehensive 'Urban Forest 1066' report on the structure and composition of its urban forest. A key finding was that the wider area of Bexhill-on-Sea has tree canopy cover of 16%¹, however the urban centre has only 13%. This cover is not evenly distributed and is below the 15% recommended as a minimum for coastal towns². It is worth noting that tree coverage is recognised 'as most valuable when close to and part of the places we live, work and play³.' The task ahead is two-fold - to increase the total tree canopy cover, whilst evening its extent by raising the minimum level in any given ward and ensuring equitable tree cover.

Despite low canopy coverage, Bexhill-on-Sea's current tree population (public and private) already shows a good level of diversity¹ which provides a good base upon which to make species selection decisions.

RDC subsequently commissioned this Tree Planting Strategy to enable a cohesive and comprehensive approach to tree planting in Bexhill. The aim is to improve tree cover and maximise the delivery of tree benefits through a long term programme of tree planting and establishment. This report identifies where new planting could take place and to prioritise it according to the potential for the greatest impact. This can be achieved by identifying a set of hotspots using agreed parameters, where new trees can have the largest impact on air pollution, flood risk, deprivation index, in areas with high population density and low existing tree cover.

¹ Rother DC Urban Forest 1066 Report

² Doick et al, 2016

³ The England Trees Action Plan, 2021

Within the urban area of Bexhill (the focus of this report): All soft landscapes (including farmland) where a tree 'could' be planted is considered potential plantable space and covers some 650 hectares, whilst actual plantable space (removing farmland and residential gardens) amounts to a tenth of this at 65 hectares, including significant areas of small plots such as roadside verges.

Community planting projects have been identified for 13 separate locations, with 3 of those already underway for the 2022/23 planting season. In tandem with this, East Sussex County Council's (ESCC) street tree programme successfully sought funding from the Urban Tree Challenge Fund for some 225 trees. In tandem with this, Trees for Cities has also successfully secured funding from the Urban Tree Challenge Fund to plant and establish c. 350 street trees on highway verges in partnership with East Sussex County Council (ESCC)

The policy review (chapter 4) identifies the core concepts for tree planting and management driven within international and national policy, through to Rother District Council policies.



Chapter 1: Introduction

RDC has committed to becoming carbon neutral as an organisation by 2030 and has identified the following priority areas as part of their Environment Strategy:

1. Becoming a smart digital district
2. Green economy
3. Air quality and sustainable transport
4. Sustainable waste management
5. Sustainable energy
6. Protecting and enhancing biodiversity
7. Construction and existing buildings
8. Environmentally friendly council

Of these 8 priority areas, trees can contribute towards achieving or improving 6 targets⁴.

This document seeks to underpin plans to increase canopy cover within Bexhill using the baseline for the existing urban forest provided by the 'Urban Forest 1066' report, whilst strategically exploring opportunities for future planting which could be targeted to achieve the greatest impact. This document will also signpost best practice and guidance with regards to planting, establishment, care, and management of new trees.

This tree planting strategy relates only to new trees - what, where and how to plant them. It does not cover the long term management of trees in Bexhill, or the financing, and it only looks at tree planting on council land.

⁴ RDC, 2020



Chapter 2: Vision And Goals

Vision

“More Trees for All Bexhill”

That all the people and communities of Bexhill have easy access to the health, nature, and climate benefits of trees and that Bexhill's Urban Forest continues to grow and thrive as a robust, resilient, living asset.

Goals

- Every ward in Bexhill to see an increase in the number of healthy trees on its streets and in its publicly owned open spaces
- Tree planting and establishment programmes are to involve local communities where possible
- Tree planting and establishment to be embedded within a district-wide approach to tree management
- The urban forest is developed through tree establishment to be more diverse, healthy, and resilient to pests, diseases, and the future climate in Bexhill
- Ensure appropriateness in every planting project of species to location and purpose

KPI	Target
Tree equity - Number of wards with increase in trees over rolling 5 year period	All
Tree equity - No. treeless streets	None by 2030
No. Community sites planted	3 per year to 2030
List of community sites identified to be planted	Rolling list of 8
Community participation - No. individuals involved across a calendar year	250
Tree establishment, three years post planting	>90%
Species diversity - maximum share for a single species amongst RDC trees planted since 2020	10%
Species diversity - maximum share for a single species amongst all RDC owned trees	Lower % of population than previous year
Monitoring & management - newly planted trees to 3 years	Quarterly
Monitoring & management - newly planted trees after 3 years	Annually

Table 1: Bexhill's Key Performance Indicators and Targets

Chapter 3: The Urban Forest

Trees, shrubs, hedges, wildlife, and other green and blue infrastructure in the urban realm collectively make up the urban forest⁵. This includes both public and private land, along streets and waterways, in parks, open spaces and woodlands. Trees in urban areas bring with them both benefits and costs. Whilst many of the costs are well known, the benefits can be difficult to quantify or justify. Nevertheless, a considerable and expanding body of research exists on the benefits that urban trees provide to those who live and work in our urban areas, to green infrastructure and to the wider urban ecosystem. Trees provide a 'sense of place', moderate extremes of high temperature, improve air quality and act as a carbon sink. The benefits of trees are illustrated on the following page.

The decisions made now concerning new tree planting will shape and define the benefits and structure of the future urban forest. This includes the choice of species planted - having a good diversity of species within a population can help to improve resilience to changes in the climate and threats from pests and diseases. With a greater range of species, the quality of benefits delivered by trees increases⁶. Bexhill's coastal location means that its trees face particular conditions related to wind and salt aerosols that are not experienced inland. Such factors play a significant role not only in species selection, but in many other aspects of tree establishment. Environmental conditions should be used to inform species selection, and diversity should be advocated providing the species are suitable for the location.

⁵ Doick, K.J., Davies, H.J., Handley, P., Vaz Monteiro, M., O'Brien, L., Ashwood F., 2016

⁶ McKinney, 2006

An often overlooked part of tree planting is the care and management involved post planting - having a good understanding of the tree population within an urban forest and the overarching strategic goals can help to manage tree establishment effectively allowing them to thrive and deliver optimal benefits.

A concerted effort now to implement strategic targets and goals based on data and information will have significant positive consequences for the future urban forest.



The Benefits of Trees



Chapter 4: Policy Review

The following review illustrates how policy at different levels of government could affect and drive urban forestry decisions in Bexhill. Here we identify how fundamentals of good urban forest management contribute or link to existing policies and strategies from international, national and local policies.

Identifying these 'hooks' can be useful in applications for funding, navigating the changing landscape of guidance and standards and for informing and assisting decision makers with regards to what is necessary to consider and what applies to Bexhill's urban forest plan.










Starting at the international level, the Sustainable Development Goals⁷ (SDGs) were produced by United Nations in 2015 with the direction to be achieved by 2030. Building on the earlier Millennium Development Goals, the intention is for each country to mobilise efforts to end all forms of poverty, fight inequalities and tackle climate change, while insuring 'no-one' is left behind⁸. The following table highlights how trees play a role in each of the relevant SDGs. Of the 17 development goals, urban forests can contribute towards meeting 9 of these, as illustrated in Table 2.



⁷ United Nations, 2015

⁸ United Nations, 2022

United Nations Sustainable Development Goals and the role of Trees

1 NO POVERTY 	<p>Trees in cities provide valuable ecosystem services, improve the aesthetic appearance, create opportunities for employment, increase economic activity through their presence by positively affecting consumer footfall and expenditure, alongside raising the value of properties within the community.</p>	8 DECENT WORK AND ECONOMIC GROWTH 	<p>Trees in cities provide improved aesthetics for business and tourism which leads to a greater property value, increased rental fees, job opportunities and cost savings (in terms of energy and healthcare).</p>
2 ZERO HUNGER 	<p>Urban Forests can contribute towards this development goal through the provision of natural products such as, fruit, seeds, fungi and other associated species. Additionally they support healthy lifestyles indirectly through affordable woodfuel, clean water and higher quality soils.</p>	11 SUSTAINABLE CITIES AND COMMUNITIES 	<p>Urban forests protect cities through reducing storm water runoff, they mitigate climate change and in addition to environmental ecosystem services, they can contribute towards improvements in nutrition, exercise and mental health and spaces for social cohesion.</p>
3 GOOD HEALTH AND WELL-BEING 	<p>Urban Forests encourage healthy lifestyles and can lead to increased levels of wellbeing and mental health. Open spaces can be used for exercise and recreational activities. Air quality can be directly improved through the removal of pollutants by trees.</p>	13 CLIMATE ACTION 	<p>Through carbon storage and sequestration urban forests directly reduce greenhouse gases. Trees can enable urban cooling and mitigate flooding through reductions in storm water runoff. They also produce oxygen, filter pollution and reduce energy costs.</p>
6 CLEAN WATER AND SANITATION 	<p>The UN FAO guidance Urban Forests states efficient regulators of urban hydrological cycles. They filter drinking water by reducing biological and chemical pollutants, reduce the risk of floods and erosion, and reduce water losses by minimising mesoclimatic extremes through evapotranspiration processes</p>	15 LIFE ON LAND 	<p>Trees improve soil quality and enhance local biodiversity. Many small mammals, birds and invertebrates rely on the habitats trees provide.</p>
7 AFFORDABLE AND CLEAN ENERGY 	<p>Renewable energy such as wood fuel, can be produced by urban forests. In some parts of the world wood fuel energy is the most affordable and sometimes only available source</p>	<p>Table 2: the Role of Trees in Relation to the Sustainable Development Goals Devised by the United Nations Food and Agriculture Organisation.</p>	

Area of Focus	Relevant policies supporting/supported by the targets and KPI's		
	International	National	Local
Relative tree canopy cover	<ul style="list-style-type: none"> • 2030 Agenda for Sustainable Development • The Paris Agreement • FAO Guidelines on Urban and Peri-urban Forestry • FAO Green Cities Initiative • Post-2020 Global Biodiversity Framework • UN Decade on Ecosystem Restoration • UN Habitat -The New Urban Agenda • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • UK's Nationally Determined Contribution • The UK Climate Change Act • The 25 Year Environmental Plan • Clean Air Strategy • Clean Growth Strategy 	<ul style="list-style-type: none"> • RDC Environment Strategy 2020-2030 • RDC Local Development Framework • RDC Development and Site Allocations Local Plan
Age diversity (or size)	<ul style="list-style-type: none"> • FAO Guidelines on Urban and Peri-urban Forestry • UN Decade on Ecosystem Restoration • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • The 25 Year Environmental Plan • The England Trees Action Plan 21-24 	<ul style="list-style-type: none"> • RDC Environment Strategy 2020-2030
Species diversity	<ul style="list-style-type: none"> • 2030 Agenda for Sustainable Development • FAO Guidelines on Urban and Peri-urban Forestry • UN Decade on Ecosystem Restoration • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • The 25 Year Environmental Plan • The England Trees Action Plan 21-24 	<ul style="list-style-type: none"> • RDC Development and Site Allocations Local Plan • RDC Environment Strategy 2020-2030 • RDCI Local Development Framework
Species suitability	<ul style="list-style-type: none"> • FAO Guidelines on Urban and Peri-urban Forestry • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • The 25 Year Environmental Plan • The England Trees Action Plan 21-24 	<ul style="list-style-type: none"> • RDC Development and Site Allocations Local Plan • RDC Environment Strategy 2020-2030

Area of Focus	Relevant policies supporting/supported by the targets and KPI's		
	International	National	Local
Publicly owned trees (trees managed intensively)	<ul style="list-style-type: none"> • FAO Guidelines on Urban and Peri-urban Forestry • FAO Green Cities Initiative • UN Habitat -The New Urban Agenda • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • The 25 Year Environmental Plan • The England Trees Action Plan 21-24 	<ul style="list-style-type: none"> • RDC Development and Site Allocations Local Plan • RDC Environment Strategy 2020-2030
Publicly owned natural areas (trees managed extensively)	<ul style="list-style-type: none"> • FAO Guidelines on Urban and Peri-urban Forestry • FAO Green Cities Initiative • UN Habitat -The New Urban Agenda • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • The 25 Year Environmental Plan • The England Trees Action Plan 21-24 	<ul style="list-style-type: none"> • RDC Development and Site Allocations Local Plan • RDC Environment Strategy 2020-2030 • Core Strategy: Market Towns and Villages Landscape Assessment
Trees on private property	<ul style="list-style-type: none"> • FAO Guidelines on Urban and Peri-urban Forestry • FAO Green Cities Initiative • UN Habitat -The New Urban Agenda • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • The 25 Year Environmental Plan 	<ul style="list-style-type: none"> • RDC Environment Strategy 2020-2030 • RDC Local Development Framework • RDC Development and Site Allocations Local Plan
Other elements of the UF; shrubs, hedges, green walls and roofs, plants, animals and water	<ul style="list-style-type: none"> • FAO Guidelines on Urban and Peri-urban Forestry • FAO Green Cities Initiative • UN Habitat -The New Urban Agenda 	<ul style="list-style-type: none"> • The 25 Year Environmental Plan • Clean Air Strategy 	<ul style="list-style-type: none"> • RDC Development and Site Allocations Local Plan • Core Strategy: Market Towns and Villages Landscape Assessment • RDC Environment Strategy 2020-2030 • RDC Local Development Framework

Area of Focus	Relevant policies supporting/supported by the targets and KPI's		
	International	National	Local
Tree benefits (including biodiversity)	<ul style="list-style-type: none"> • 2030 Agenda for Sustainable Devt • FAO Guidelines on Urban and Peri-urban Forestry • FAO Green Cities Initiative • Post-2020 Global Biodiversity Framework • UN Decade on Ecosystem Restoration • UN Habitat -The New Urban Agenda • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • UK's Nationally Determined Contribution • The UK Climate Change Act • The 25 Year Environmental Plan • The England Trees Action Plan 21-24 • Clean Air Strategy 	<ul style="list-style-type: none"> • RDC Development and Site Allocations Local Plan • Core Strategy: Market Towns and Villages Landscape Assessment • RDC Environment Strategy 2020-2030 • RDC Local Development Framework
Wider environmental considerations (including climate change, air quality, and water management)	<ul style="list-style-type: none"> • 2030 Agenda for Sustainable Development • The Paris Agreement • FAO Guidelines on Urban and Peri-urban Forestry • FAO Green Cities Initiative • Post-2020 Global Biodiversity Framework • UN Decade on Ecosystem Restoration • UN Habitat -The New Urban Agenda • The UN Strategic Plan for Forests 	<ul style="list-style-type: none"> • UK's Nationally Determined Contribution • The UK Climate Change Act • The 25 Year Environmental Plan • Clean Air Strategy 	<ul style="list-style-type: none"> • RDC Development and Site Allocations Local Plan • Core Strategy: Market Towns and Villages Landscape Assessment • RDC Environment Strategy 2020-2030 • RDC Local Development Framework

Table 3: Policies Relevant to Each Area of Focus in Bexhill's Urban Forestry.

Chapter 5: Existing Trees And Woodlands

An i-Tree Eco Sample project of Bexhill was undertaken by Treeconomics and Forest Research in 2021. The field data collected as part of the project were analysed using 'i-Tree Eco', a peer reviewed software suite. i-Tree Eco utilises plot-based information, which was collected by volunteers throughout the Bexhill area. It calculates the structural composition of the urban forest and quantifies some important ecosystem services. It can also be used to calculate the monetary value of some of these benefits.

Key findings for the structure and composition of that study are presented in Table 4 (right) whilst ecosystem services are shown in Table 5.

This study was based on a randomised plot based assessment across the entire urban area, irrespective of ownership allowed for the inclusion of both private and public spaces. 300 plots were surveyed throughout Bexhill - the outputs included species, size and health of trees in the area and shrub cover.

The results from the Eco project (in the 'Urban Forest 1066' report) provide a baseline for the existing urban forest of Bexhill. Having a clear understanding of the structure and composition and the benefits delivered to the local environment and communities, enables RDC to carefully plan for management and growth over the coming years.

Information on the structure and composition from that study follows as it is important information on what is already present within Bexhill and will be used to inform what and where to plant.

Structure and Composition Headline Figures		
Number of Trees (estimate)	228,000	
Est. Tree Density (trees / hectare)	66	
Tree Canopy Cover	Total	16%
	Urban	13%
	Rural	19%
Shrub Cover	5.5%	
Number of Species Surveyed	81	
Most Common Tree Species	Quercus robur, Fraxinus excelsior, Ilex aquifolium	
Share of Trees in Good/Excellent Condition	41.5%	
Share of Trees by size class Diameter at Breast Height (DBH)	0-15 cm	44.5%
	15-45 cm	45.0%
	45-75 cm	9.7%
	75* cm	0.7%
Tree Diversity - Shannon Weiner Index	3.4 (high)	
Replacement Cost	£142.5 million	
Amenity Value - urban areas (CAVAT)	£3.28 million	

Table 4: Structure and Composition Headline Figures for the Whole of Bexhill.
Source: Rother DC Urban Forest 1066 Report (an I-Tree Eco Sample Survey)

5.1 Structure and Composition

5.1.1 Tree Cover

Bexhill has an average tree cover of 16.1% across its parish boundary, which aligns with the tree cover average for England of 16%⁹. Whilst at face value, the current tree cover exceeds the suggested minimum tree cover for coastal towns of 15%¹⁰, this is not true of the urban area, which has a tree canopy cover of 13%. Shrub cover in Bexhill is estimated at an additional 5.5%.

5.1.2 Species Distribution and Diversity

Diverse urban forests are better set to deal with future changes in climate and threats from pest and disease. With 81 different tree species surveyed in Bexhill, the population has a strong foundation. Bexhill scored 3.4 on the Shannon Weiner Index where 1.5 is considered low and 3.5 is considered high. *Quercus robur* (Oak), *Fraxinus excelsior* (Ash) and *Ilex aquifolium* (Holly) were the three most common, representing 19%, 9% and 8% of the population respectively.

5.1.3 Leaf Area

Leaf area is often dependant on the species of tree, not just how abundant the tree is. The leaf area is directly related to ecosystem service delivery - generally, greater leaf area means a greater ability to absorb pollution and intercept rainfall. Bexhill's urban forest has approximately

9,800 ha of leaf area, for reference this is more than 15 times the size of the Combe Valley Countryside Park (which is approximately 580 ha).

5.1.4 Size Distribution

The distribution of Diameter at Breast Height (DBH) can help to indicate whether there are enough young trees to replace older specimens as they are eventually lost through old age or disease. Bexhill has a fairly typical size distribution with the majority of trees in the smaller to medium categories and a lower proportion within the larger categories. It will be important to continue to plant new trees in Bexhill whilst ensuring good management and protection for the larger mature trees.

5.1.5 Replacement Cost

The replacement cost, valued at £142.5 million for the total urban forest, indicates the amount of money required to replace the existing trees with similar trees. This cost is a structural valuation and takes account of species suitability, depreciation and other economic consideration. *Quercus robur* (English Oak), *Fagus sylvatica* (Beech) and *Castanea sativa* (Sweet Chestnut) represent just over half replacement value of all trees. It is worth noting that collectively, *Fraxinus* (Ash) trees, steadily being lost to Ash Dieback are valued at £4.9 million.

⁹ Forest Research, 2022

¹⁰ Forest Research, 2022

5.2 Ecosystem Services

5.2.1 Carbon Storage and Sequestration

RDC has committed to becoming a carbon neutral organisation by 2030. Approximately 73,300 tonnes of carbon are currently stored in Bexhill's urban forest with an additional 2,160 tonnes being sequestered each year. The value of this stored carbon is around £66.7 million with tree sequestration adding almost £2 million each year.

5.2.2 Pollution Removal

The total NHS and social care cost due to PM_{2.5} and NO₂ combined in 2017 was estimated to be £42.88 million¹¹. Urban forests play an important role in pollution removal, especially for particulates. Benefiting health through improved air quality is a highly valuable asset. It is estimated that Bexhill's trees and shrubs remove 53 tonnes of pollutants from the atmosphere each year, with an associated value of £1.5 million.

5.2.3 Avoided Runoff

The processes of evapotranspiration and infiltration within tree canopies mean less water enters the waterways and sewerage systems. This is particularly important in urban areas where impermeable surfaces increase runoff and therefore the risk of flooding. 84,800 m³ is avoided in Bexhill thanks to the urban forest. This equates to 34 olympic swimming pools worth of water not entering the sewerage treatment process saving an estimated £152,000 annually.

¹¹ Public Health England, 2018

Ecosystem Services Headline Figures

Carbon Storage (cumulative)	73,300 Tonnes	£66,700,000
Carbon Sequestration (annual)	2,160 Tonnes	£1,960,000
Pollution Removal (annual)	53 Tonnes	£1,500,000
Avoided Runoff (annual)	84,800 m ³	£152,000
Total Annual Benefits*	£3,612,000	

Table 5: Ecosystem Service Headline Figures

*It should be noted that this valuation method does not represent the full value of the trees; it is a conservative estimate. A great many benefits, such as urban cooling, shade provision, biodiversity, and physical & mental health benefits cannot yet be valued in this way.

These ecosystem services are critical to the health and stability of our urban areas; carbon sequestration and storage helps keep our atmosphere clear of CO₂; pollution removal keeps people's lungs healthy, and can reduce the symptoms of asthma; and water interception and infiltration can relieve stress on drainage systems and make cities less liable to storm flooding. Tree planting goes a long way to increasing the provision of these benefits, and it is important too continue planting over the long term, as young trees and old trees provide these services in different ways and at different rates.

Chapter 6: Where To Plant

6.1 Opportunity Mapping

This chapter explores currently undeveloped areas within Bexhill for the potential to plant trees. Sites have been assessed for their potential impact upon the local environment and communities. A Multi-criteria Decision Analysis (MCDA) approach has been utilised to rank locations between 1 and 10, with 10 having the greatest potential impact, and therefore being the highest priority.

This section outlines opportunities for planting which forms part of this tree planting strategy. This chapter covers the ‘where to plant’ part of a full tree strategy.

For the purposes of this study, the data has been broken down to show the whole of the parish, and the urban development centre. Potential Plantable Space includes all natural areas where trees could be planted excluding those within private residential gardens.

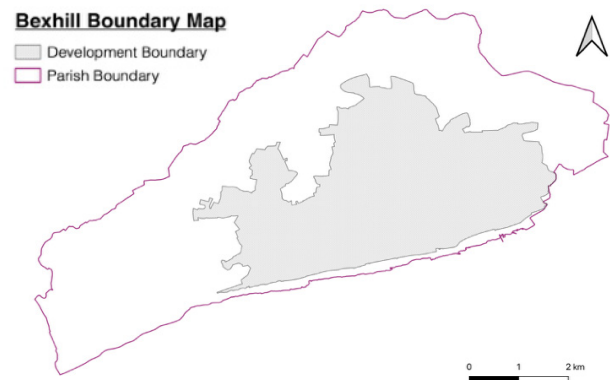


Figure 1: Boundary Line of Bexhill Showing the Parish Boundary and the Urban Area (Grey).

6.1.1 Key Statistics

		Bexhill Parish	Bexhill Urban Area
Total area		3,353 ha	1,331 ha
Existing Tree Canopy Cover		16%	13%
Manmade surfaces / infrastructure without tree canopy cover		19%	35%
Shingle, Sand, Inland Water		5%	0%
Back gardens		14%	34%
Potential Plantable Space	Larger areas	42%	12%
	Single tree plots/verges	4%	5%

Table 6: Land Cover Types and Potential Plantable Space in the Parish and Urban Centre of Bexhill

		Parish of Bexhill	Bexhill Urban Area
Plantable Space classified as high priority	Larger areas	44%	59%
	Single tree plots/verges	51%	57%

Table 7: Proportion of Plantable Space Classified as High Priority After Application of MCDA Factors.

6.1.2 Tree Planting Hotspots

A tree planting hotspot map is a GIS based tool created to identify areas in which tree planting is of the highest priority. It is built by ranking land on a number of factors; for this project, those factors included tree canopy cover, air quality, flood risk, indices of multiple deprivation, crime rate, population density, and proportion of population aged 65 and above (figure 3).

These layers are combined to identify areas which are most in need of tree cover to combat environmental and social issues. This is crucial to deliver green equity to Bexhill.

Figure 4 shows potential tree planting space within Bexhill, this incorporates all natural areas, both public and private, with areas of existing tree canopy cover (figure 2) and hard standing (such as: buildings and transport infrastructure) removed.

Within the parish boundary of Bexhill, 65% of the land is classed as potential tree planting space representing some 2,180 hectares of land. 52% of the urban area is designated as potential planting space, covering 678 hectares.

Tree Canopy Cover

 Canopy

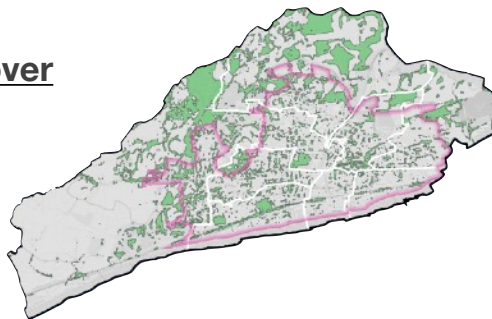



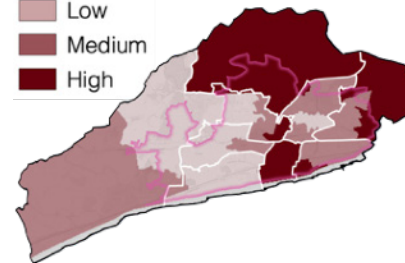





Figure 2: Tree Canopy Cover - Sentinel Satellite Data

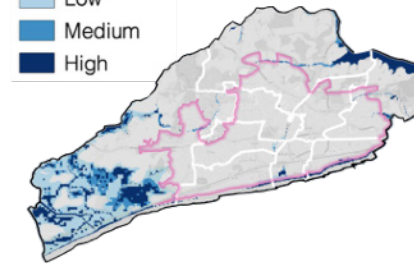
IMD

 Low
 Medium
 High






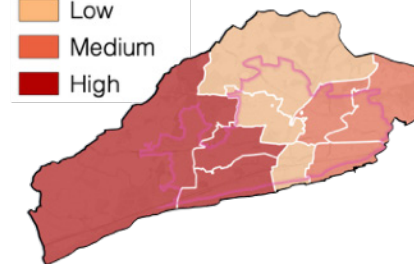
Flood Risk

 Low
 Medium
 High



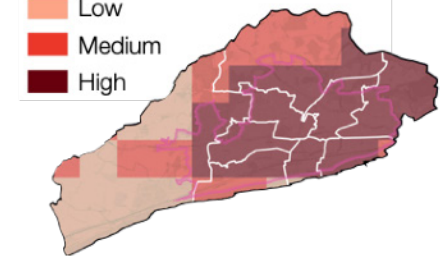
Population % 65+ Yrs

 Low
 Medium
 High



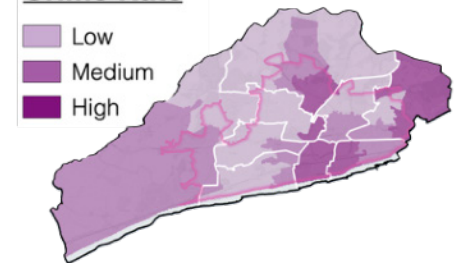
Air Pollution Concentration

 Low
 Medium
 High






Crime Rate

 Low
 Medium
 High



Population Density

 Low
 Medium
 High

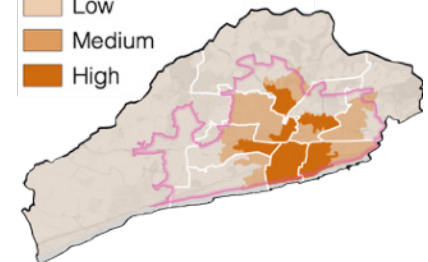


Figure 3: Ranking Maps Layered Together To Create the Tree Planting Hotspot Map

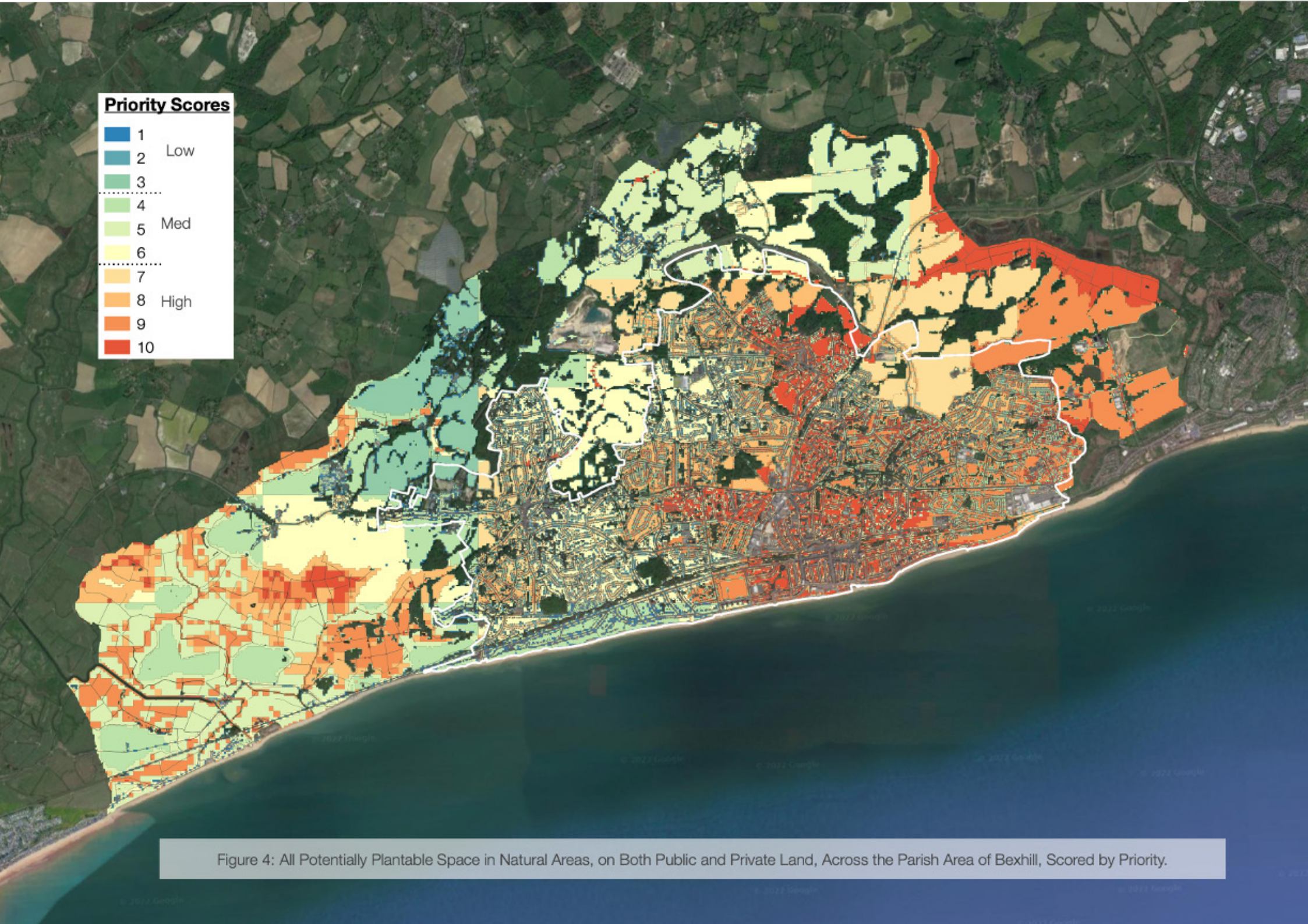


Figure 4: All Potentially Plantable Space in Natural Areas, on Both Public and Private Land, Across the Parish Area of Bexhill, Scored by Priority.

6.2 Potential Plantable Space

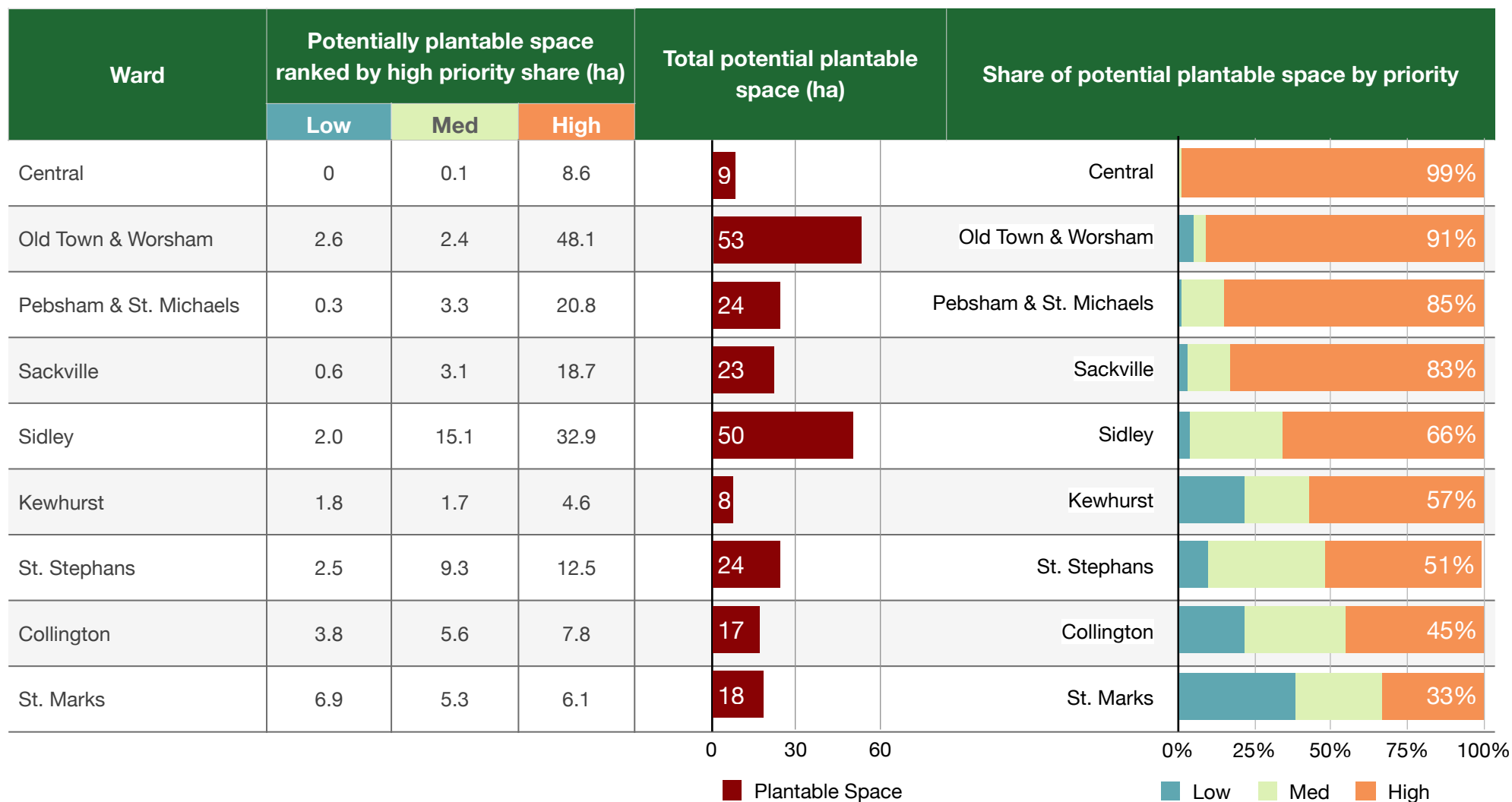
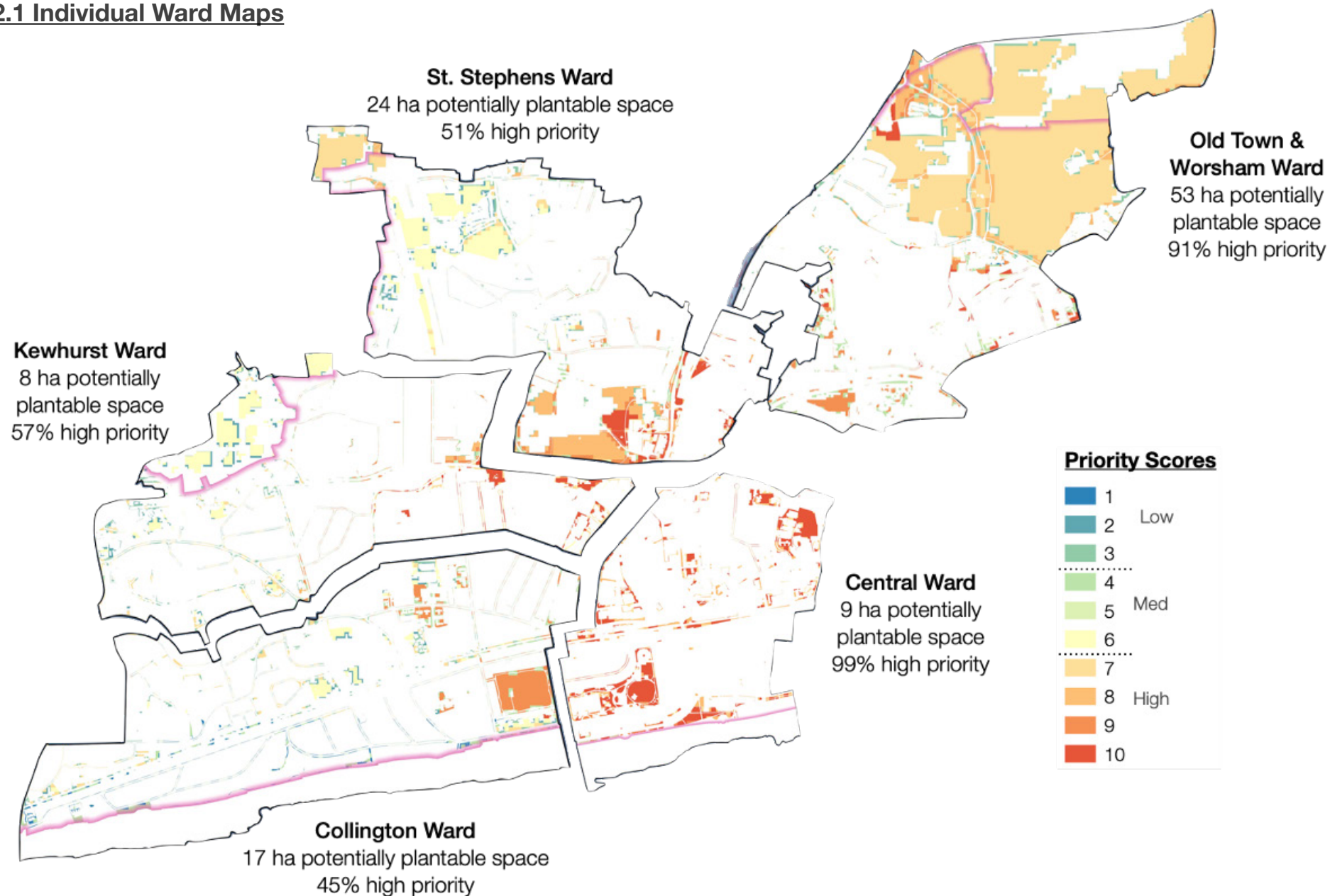
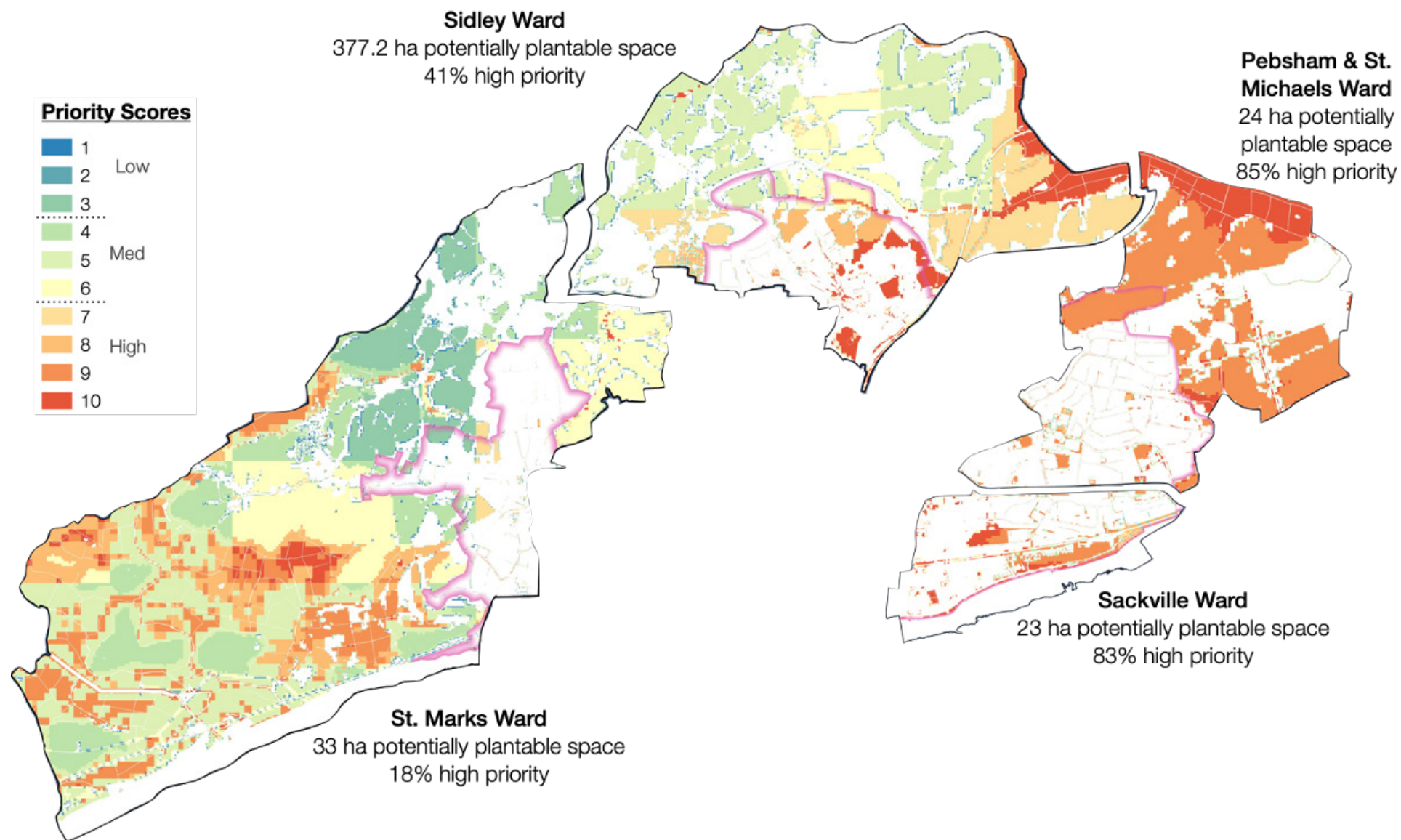


Figure 5: Summary of Potentially Plantable Space Within the Urban Area by Ward, Excluding Shingle, Inland Water, and Back Gardens.
Potential Space Includes Land That May Be Prioritised for Other Purposes Such as Wildlife Sanctuaries or Sport Fields

6.2.1 Individual Ward Maps





Community Planting Sites

1. Levett's Field
2. St. Mary's Recreation Ground
- 3. Southlands Open Space**
4. Jubilee Road Plantation
5. Hornbeam Avenue Open Space
6. St. Richard's RC College
7. Bexhill High Academy
- 8. Bexhill Down**
9. St. Peter's & St. Paul's Primary Sch
10. Seafront nr. De La Warr Pavillion
11. Martyn's Way Open Space
- 12. Sidley Recreation Ground**
13. Galley Hill

Street Planting Sites (10+ trees) (East Sussex CC)

- | | |
|-----|-----------------|
| CLR | College Road |
| KHA | Kewhurst Avenue |
| KWR | Knebworth Road |
| MIV | Mount Idol View |
| OMC | Old Manor Close |
| PSL | Pebsham Lane |
| PMG | Pelmont Gardens |
| SBR | Seabourne Road |
| SHR | Summerhill Road |
| WWR | Warwick Road |

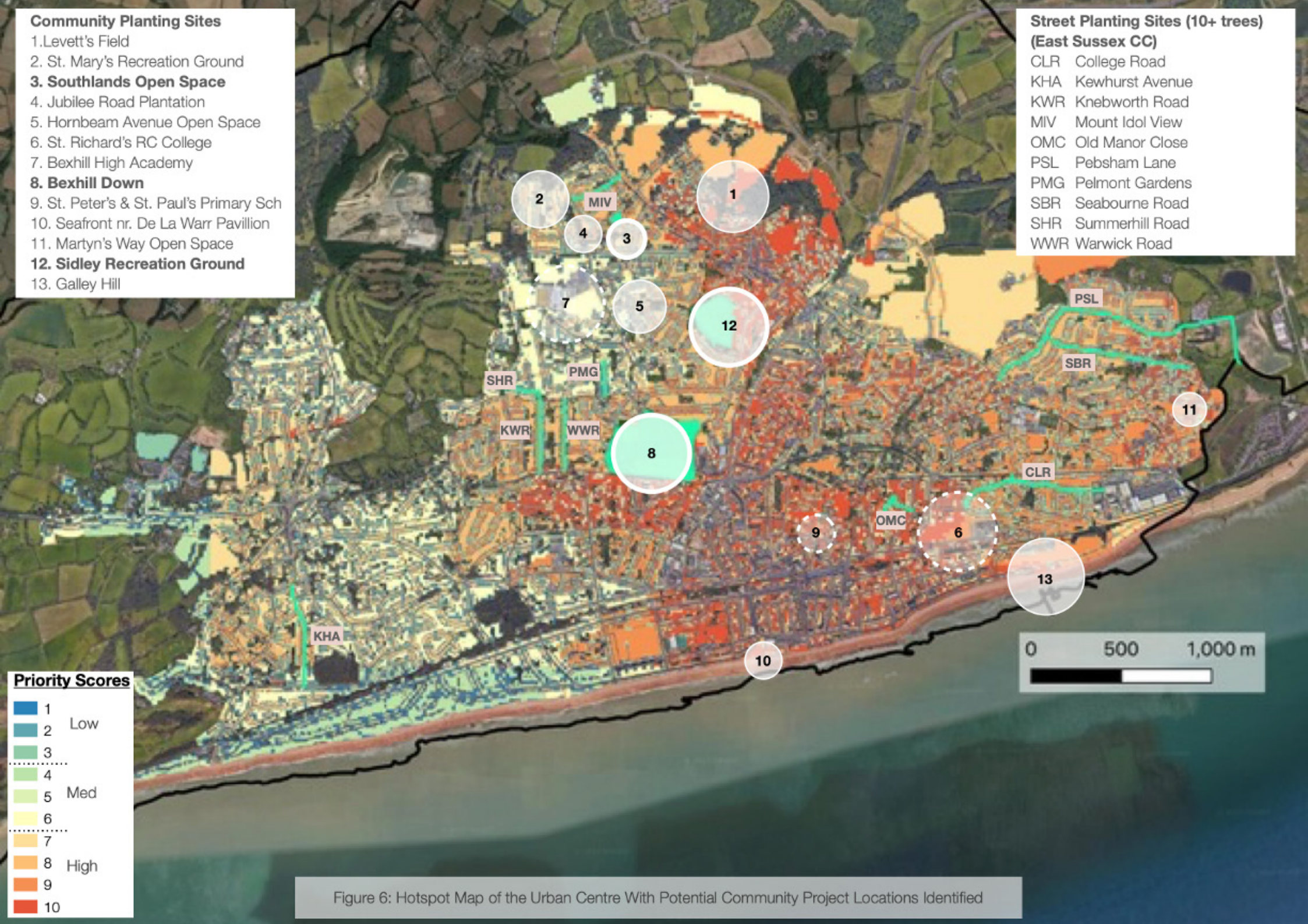


Figure 6: Hotspot Map of the Urban Centre With Potential Community Project Locations Identified

6.3 Soft Landscape Site Selection

Mapped areas of potential plantable space were used to establish a long list of viable planting sites (Figures 6 & 7). Ideal sites would enable the following goals to be achieved:

- Nature conservation and restoration
- Using increased tree canopy cover as part of a nature based solutions to improving the local urban forest
- Connection people with nature where communities and authorities would be mobilised to plant, protect and promote urban trees. Areas already designated for other priorities were then excluded, removing school grounds, ESSC Highways' land, land earmarked for future development and private land.

All potential sites were visited during a ground-truthing exercise, carried out by Rother DC and Trees for Cities. Sites were evaluated against these criteria and given a priority ranking:

- Community & population close proximity to site
- Active participation demonstrated locally
- Accessibility for people & vehicles
- Proximity to local community facilities
- Capacity of site to accommodate new trees / woodland
- Visible need for additional trees
- Visual impact of new trees:
- Planning concerns – future plans?
- Proximity to imminent street tree programme
- Is site located in/near hard urban areas?
- Safety - improves / exacerbates

Proximity to community groups is the top criteria for a reason. Such groups are an excellent resource for tree planting, as it can help to create a sense of pride in a neighbourhood. Where community engagement is good, tree planting and tree care is typically more successful, leading to better long term outcomes for both people and trees.

Top priorities earmarked for 2022/23 planting	<ul style="list-style-type: none">- Sidley Recreation Ground- Southlands Open Space- Bexhill Down
Second priority sites for future planting seasons	<ul style="list-style-type: none">- Egerton Park- Barrack Hall Park- Seafront De L Warr Pavilion- Seabourne Road Recreation Ground- Jubilee Road plantation- St Mary's Recreation Grnd- Martyns Way Open Space- Levetts Field
Not evaluated	<ul style="list-style-type: none">- Hornbeam Ave Open Space (outside high IMD area)- Galley Hill (added later)

Table 8: Potential Planting Soft Landscape Sites in Priority Order

These sites represent a variety of valued spaces within mostly medium and high priority areas. Some sites are situated along the seafront itself, where salt, poor soil, and high winds present the largest threat to tree survival; therefore species selection, good planting practice, and post-planting management will be key.

Case Study: Bexhill Down

Bexhill Down is a large green open space in the centre of Bexhill. It is used regularly by local residents for recreation, such as walking, cycling and sports. Community consultation went ahead on two occasions prior to the planting season. Feedback highlighted the desire to see trees used for avenues and screening, whilst leaving areas of green space open for recreation. Amenity planting was also important to the local people, advocating for spring blossoms and autumn colours.

Two tree planting days have gone ahead at Bexhill Down with huge success. The trees were carefully selected to meet the conditions of Bexhill Down, taking into account both physical and social factors. December 2nd 2022 saw some 210 volunteers come out to help plant trees.

These volunteers included individuals and those from community groups, including Bexhill Friends of the Down, Bexhill Environmental Group. In total, 1500 whips were planted. These were of a range of species, including holly, dogwood, and elder. On January 18th 2023, the second planting day saw an additional 38 heavy standard trees planted.



6.4 Road and Verge Planting Opportunities

These sites are situated along road verges, on roundabouts or similarly small areas of soft landscapes. They are often very small in size and are generally suited to individual tree planting. They can be crucial in urban areas to improve canopy cover, provide ecosystem services and amenity value, and create green corridors along transport routes. These are unsuitable for community projects, and planting should be undertaken by council or highways planting teams, or other professionals.

121 hectares, equalling 6% of the plantable space for the parish is located along verges and roads. This is 3.6% of all land in the parish. Of this potential tree planting space, 51% is classed as 'high priority' which is approximately 62 hectares.

32 ha, equalling 5% of the plantable space for the urban area is located along verges and roads. This is 2.4% of all land in the urban area. Of this potential tree planting space, 56% is classed as 'high priority' which is approximately 18 hectares.

Tree planting along transport links can provide high value ecosystem services to built up areas. Trees here often have the space to reach great canopy potential by spreading over pavements and roads, compared to woodland planting where tree canopy may be smaller as they compete for space. This allows for large leaf area which can provide more benefits, such as reducing surface runoff and removing airborne pollutants.

Benefits from tree planting in these locations may be seen sooner than from woodland planting. They can also help to improve green equity by bringing green infrastructure into areas with less open green space.

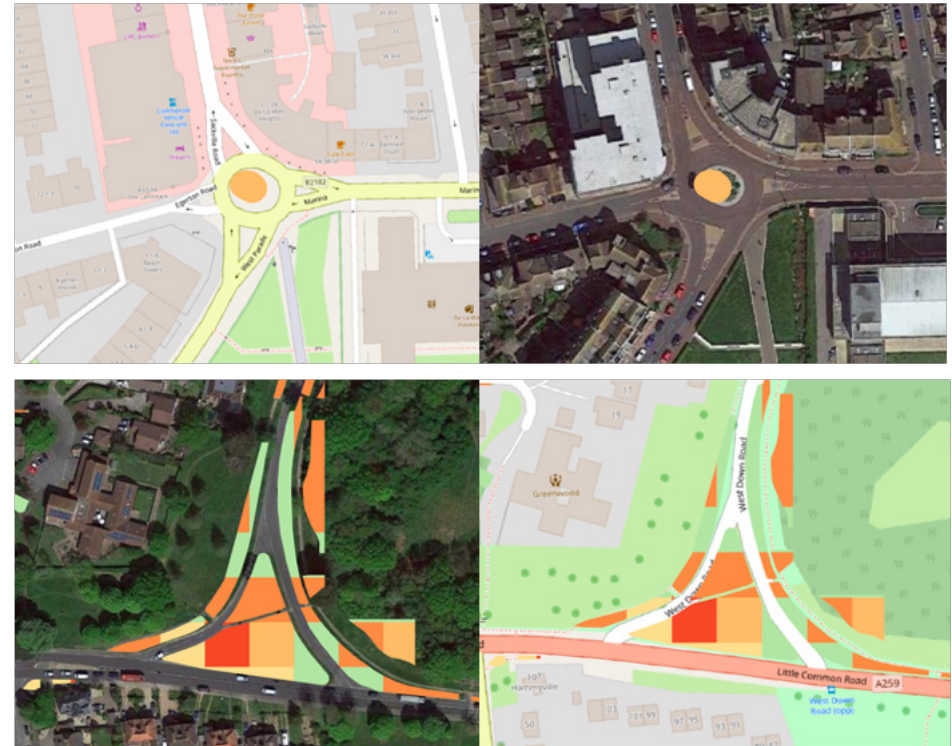


Figure 7: Example of Sites for Road and Verge Planting

Roadside trees can be subject to higher stresses than their woodland counterparts. Increased hard surfaces and polluted surface runoff (ie. by oil, salts etc.) can affect a trees ability to thrive in this environment. Some tree species are more resilient than others to these pressures, therefore selecting the right species for the right space is crucial.

6.5 Street Tree Programme - East Sussex CC

Rother DC works closely with East Sussex County Council (ESCC) who have responsibility for the existing trees and future planting along the highways within Rother District. Following successful application to the UK government's Urban Challenge Tree Fund, ESCC has secured the funds to plant some 225 trees within the planting season 2022/23.

The Urban Challenge Tree Fund uses strict criteria to ensure that new street tree planting is directed towards those streets and communities that will most benefit from additional planting. Whilst in keeping with the opportunity mapping principles applied in this report, street selection was carried out as a distinct exercise.

The top ten street tree planting locations are identified in Figure 6 alongside those for community planting. The wide range of tree species selected for planting were done so from local ESCC and RDC lists - utilising local knowledge of which species can handle the local climate conditions effectively.

Proximity matters

The closer trees are to the places where people live and work, the more effective they are. To drive tree canopy cover, prioritising planting in the soft verges allows rapid progress with good value for money. At some point, the challenge is to extend planting into hard landscape areas.

Planning for competing needs

At face value, this creates conflict with other uses to which urban space can be put, such as street lighting or car parking. Street trees, due to their canopy being well above head height, enable extremely effective

dual use of space. With intelligent planning, seemingly competing uses, such as accessibility and shade creation can be met.



Figure 8: Old Manor Road, Part of the Street Tree Programme Showing the Grass Verges Earmarked for 11 New Trees in 2022/23

Sorbus intermedia	6%	Pterocarya fraxinifolia	4%
Tilia cordata 'Greenspire'	5%	Carpinus betulus	4%
Ulmus 'New Horizon'	5%	Prunus lusitanuca	4%
Acer campestre	5%	Ginkgo biloba	4%
Tilia x europaea 'Euchlora'	4%	Ilex x koehneana	4%
Betula pendula	4%	Ostrya carpinifolia	4%

Table 9: Top 12 Tree Species of 34 Selected, Showing Proportion of Total for Planting Season 2022/23

Chapter 7: What & How To Plant

7.1 Species Selection

Coastal planting presents unique challenges. The conditions are more harsh, and therefore trees are under more stress than inland. This is particularly difficult for young trees, therefore self-seeding is less successful and coastal areas typically have lower canopy cover.

Challenges for coastal trees include high winds, high levels of salt, nutrient-poor soils, and a high risk of flooding. To combat these issues, species selection is crucial; some trees are better adapted to these conditions than others.

Knowing what is already present is the first step in species selection - a balanced population is a healthy population. The i-Tree Eco Sample survey of Bexhill's urban forest identified 81 species in total. The most common tree species is *Quercus robur* (Oak) which represents 19% of the trees in Bexhill. The second and third most common species are *Fraxinus excelsior* (Ash) representing 9% and *Ilex aquifolium* (Holly) representing 8%.

This information indicates a heavy reliance on Oak, therefore this should not feature too heavily in future planting.

However, many of the trees present in Bexhill Urban Area today also feature on lists of trees considered as suitable for coastal areas. These make a good starting point. Other species from the same genera make a good potential pool to select from.

Common Name	Scientific Name	Share of Bexhill Urban Area Trees
Leyland cypress	x Cuprocyparis leylandii	17%
English holly	Ilex aquifolium	5%
Oneseed hawthorn	Crataegus monogyna	3%
Austrian pine	Pinus nigra	1%
Honeylocust	Gleditsia triacanthos	<1%
Olive	Olea europaea	<1%
Whitebeam	Sorbus aria	<1%
Common pear	Pyrus communis	<1%
Holly oak	Quercus ilex	<1%
Smooth hawthorn	Crataegus laevigata	<1%
White mulberry	Morus alba	<1%

Table 10: Trees Identified as Suitable for Coastal Planting, Which Are Already Present in Bexhill Today

Sources: Hiron and Sjömen, 2019,
Rother DC Urban Forest 1066 Report

7.2 Biosecurity

‘Biosecurity refers to a set of precautions that aim to prevent the introduction and spread of harmful organisms. These include non-native tree pests, such as insects, and disease-causing organisms, called pathogens such as bacteria and fungi’.

With pests and diseases posing substantial potential threats to the UK tree population (which would ‘cost the taxpayer millions of pounds per year’ should they become established in the UK), protecting plant health and reducing the likelihood of establishment is essential¹². Pests and diseases can be spread naturally or through organic material like soil being moved around as a result of human activity. Taking precautions can help interrupt the pest and disease cycle as seen in Figure 7 (facing).

As part of their industry and public guidance, the Forestry Commission and Animal and Plant Health Agency ask industry professionals to: **‘Think Kit, Think Transport, Think Trees’** - Following the guidance such as keeping kit and vehicles clean, ensuring soil and organic matter is removed between sites and responsibly sourcing stock from suppliers who adhere to national standards such as the ‘Plant Health Management Standard’ or have a strong biosecurity in place can significantly reduce the increased risks to tree health¹³.

When procuring new trees, it’s important to ensure they comply with UK national guidance. The Plant Health Alliance has set up the Plant Healthy Scheme to certify suppliers who meet the standard. The Plant Health

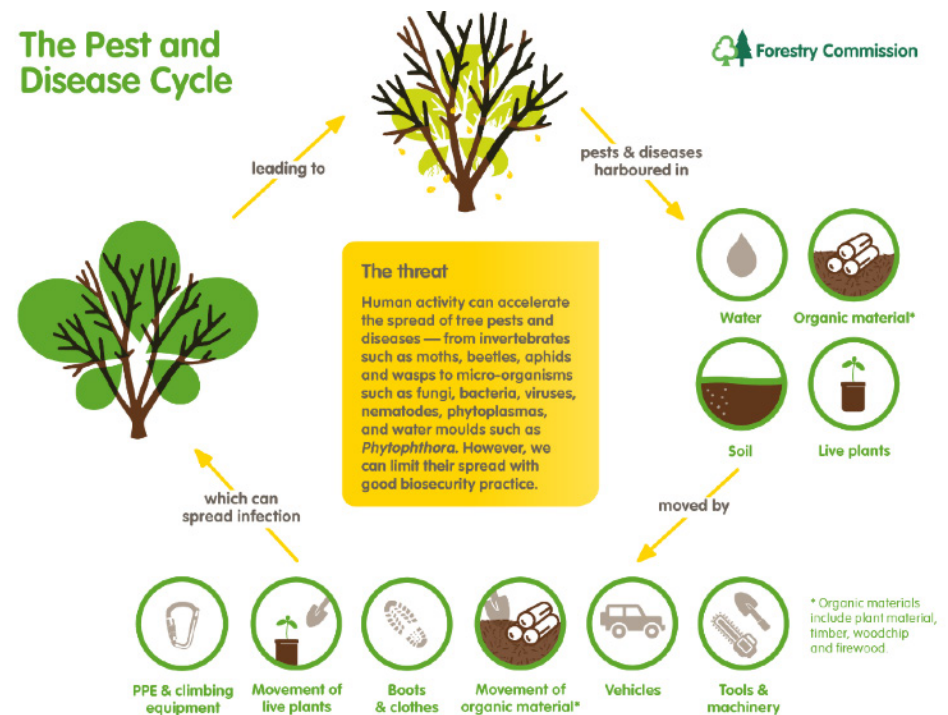


Figure 9: Pest and Disease Cycle. Source: Forestry Commission, 2020

Alliance steering group includes key organisations such as Defra, the Woodland Trust, The Arboricultural Association, and Forestry England.

The new Biosecure Procurement Requirement ensures that suppliers of trees for schemes funded by government grants such as the England Woodland Creation Offer have been accredited under the Plant Healthy Certification Scheme or have passed a ‘Ready to Plant’ assessment. The introduction of this requirement aims to address risks and minimise losses for our existing treescape by protecting existing trees.

¹² Department for Environment Food & Rural Affairs, 2021

¹³ Forestry Commission and Animal and Plant Health Agency, 2018

7.3 How To Plant

There will be many considerations when considering planting trees in Bexhill. There is a vast range of documents, reports and research papers in the public domain which contribute to and provide guidelines for establishing trees in urban and peri-urban landscapes.

The guidance to follow will be dependant upon the type of tree planting, considerations and approaches will differ greatly between planting in soft and hard landscapes, and also with regards to the size of trees to be planted.

Typically ‘whips’ tend to be planted as part of greenspace/ community planting events, whereas ‘standards’ and ‘heavy standards’ tend to be planted by professionals within hard landscapes. In order to ensure successful establishment, it will be key to understand the needs and requirements of the tree size to be planted. The tree size guide in Figure 8 illustrates the different options and their relative girth.

Despite their size, whips can in fact outgrow a larger tree and reach maturity earlier, however in urban landscapes a more immediate effect can be realised through planting a standard or semi-mature tree, and this may be the most appropriate choice¹⁴.

Given Bexhill’s coastal location, in cases where trees are exposed to high winds, it is better to plant younger trees in small groups together with shrub. This approach enables the tree to more easily adapt to the local context whilst affording it some protection.



Figure 10: Tree Sizes for Planting. Source: Johnsons of Whitley

¹⁴ The Tree Council, 2019

The following resources provide best practice, guidance and support for planting in a range of scenarios from whip planting in soft landscapes to extra heavy standard street trees in hard landscapes:

- BS 8545:2014 Trees: From Nursery to Independence in the Landscape (2014)¹⁵
- Trees in the Hard Landscape: A Guide for Delivery by Trees & Design Action Group (TDAG) (2014)¹⁶
- Green Blue Urban: The 7 Fundamentals of Tree Planting in Paved Surrounds¹⁷
- Forest Research: Planting Practice¹⁸
- The Tree Council: Tree Planting Guide¹⁹
- Woodland Trust: How to Plant a Tree²⁰

BS 8545 is a British Standard to assist people involved in planning, designing, resourcing, producing, planting and managing new trees in the landscape.

It details every stage of the planting process providing a flow chart guiding best planting practice for decision makers, this is shown in Figure 9 as an example.

¹⁵ BS 8545, 2014

¹⁶ TDAG, 2014

¹⁷ Green Blue Urban, 2016

¹⁸ Forest Research, 2022

¹⁹ The Tree Council, 2019

²⁰ Woodland Trust, 2022

²¹ Barcham's tree planing guide, 2019

BS 8545:2014 makes the point that every planting site is different, each with its own constraints and limitations and that overcoming and accommodating these to achieve planting success and longevity of the newly planted tree is an 'intellectual exercise' and cannot be achieved using formulaic recipes 'cut and pasted' from elsewhere. Despite extensive literature on the subject, each stage of the process remains a speciality and expert advice should be sought throughout²¹.

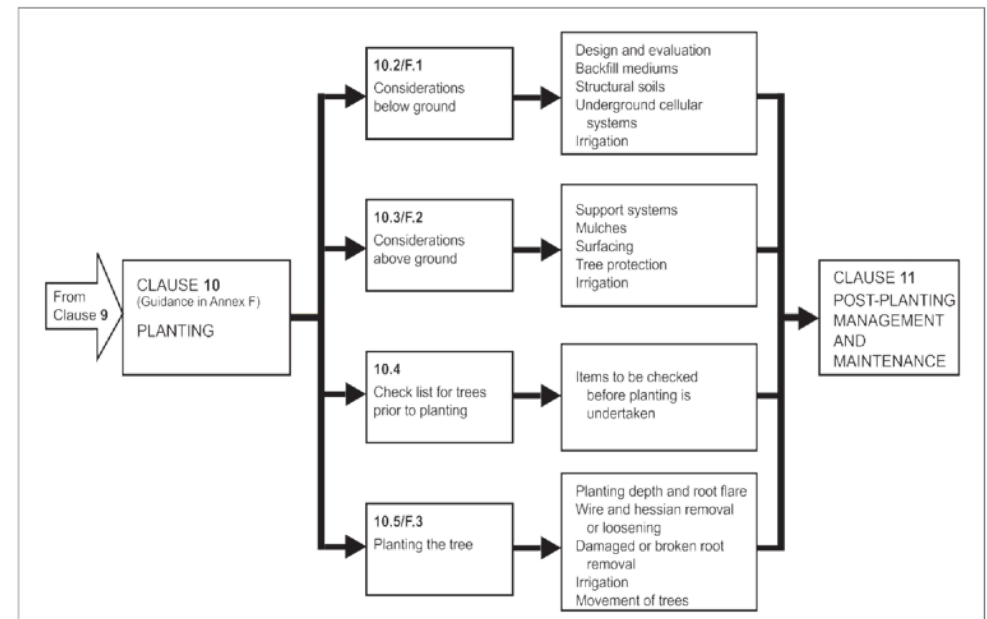


Figure 11: Planting Flowchart. Source: BS 8545, 2014

The following are some key planting principles to consider:

- Appropriate choice of species and size of stock
- Ownership of the land
- Community buy-in:
 - The places where trees are planted are also the places where people live, work and play - their views, attitudes and behaviours can make all the difference in tree establishment
 - Consultation and communication can often result in volunteer participation, which managed well, can reduce costs and improve outcomes for both trees and people
- Planting techniques;
 - Timing is key. Trees should be planted within the planting season and individual site specific conditions will need to be considered.
 - Correct use of soil to backfill planting hole, e.g. not using exclusively top soil so as to maintain structure in the soil.
 - Loosening of soil that has been compacted too heavily by equipment in the process of excavating.
 - Prior to planting inspections of tree health.
 - Insuring the root flare is planted at the correct height.
 - Appropriate use of any hydrating gels, composts, fertilisers and mulches - care should be taken as not all treatments are universal and suitability will vary²².

²² Rogers and Kirkham, 2019

²³ The Tree Council, anon; The Woodland Trust, anon

²⁴ Forest Research, anon; TDAG, 2014

- Below ground site conditions;
 - Pit sizes and shapes need to be appropriate as some pit designs can limit root development and growth - wider pits are more important for root development than depth.
 - Other utilities or infrastructure nearby that could damage the tree as it grows or vice versa.
 - Appropriate soil conditions for tree growing.
- Above ground site conditions;
 - Proximity to buildings and other structures
 - Adequate space is needed for the tree to grow to a healthy size whilst factoring in room for maintenance to be carried out.
 - Availability/regulation of fundamental growing resources (e.g. light/water/oxygen).

Guidance on techniques for successful planting are described and illustrated within The Tree Council's Tree Planting Guide and on the Woodland Trust's page 'How to Plant a Tree', the descriptions and illustrations are accompanied by a short video²³.

Guidance on practical considerations, and assessing sites can be found in the Forest Research 'Planting Practice' resource and within TDAG's 'Trees in Hard Landscapes' document²⁴.

7.4 Management and Maintenance

Post planting management and maintenance is critical if longevity in the landscape is to be achieved.²⁵

In Bexhill's case, momentum has been established with the community tree planting programme. This hard-won community engagement and participation can be built upon to provide an additional level of resource for more effective monitoring as a minimum.

Where resources allow and individuals are sufficiently motivated, other more active tasks can be taken on by community groups, who are often very willing to help look after the places they frequent.

The British Standard suggests at least a five year plan of management with budget consideration to ensure the long term success of the planting.

As with the planting process British Standard provides a flowchart on the management and maintenance post planting. This is accompanied by advice on various aspects such as irrigation, formative pruning and routine assessments and ongoing maintenance. This is shown in figure 10 where each of these sections have details of what to manage.

Some sites will need further attention to specific details such as compaction or maintenance and timely removal of protective equipment. These strategies must be adaptable, dependant site specifics. For example management strategies and timelines for a woodland will be

very different to that of street trees, both in what is required to be managed and the resources required to meet these needs.

When considering a maintenance plan the key aspects to achieve are: watering, pruning and collar removal, safety checks, health and disease checks, and conflicts with new or existing utilities.

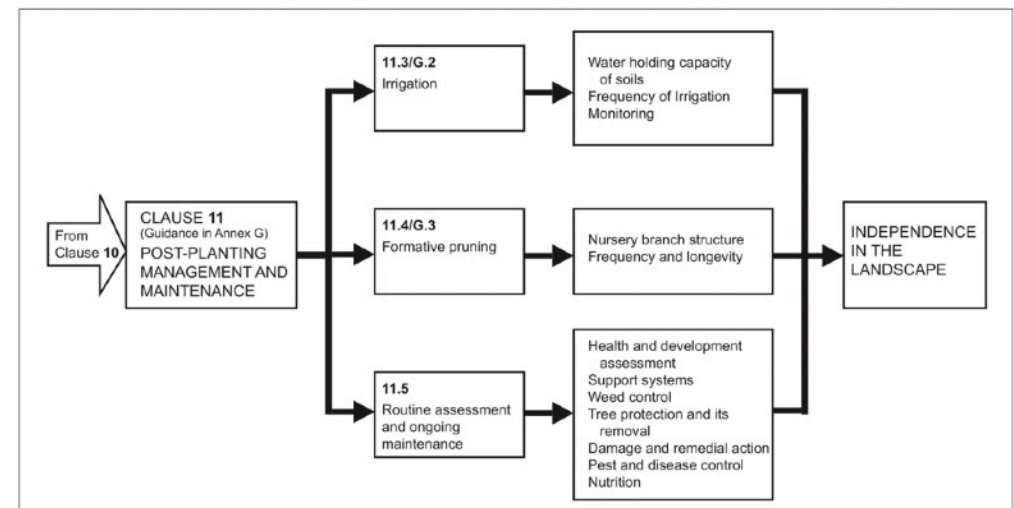


Figure 12: Management and Maintenance Flowchart Source: BS 8545, 2014

²⁵ Barcham's tree planting guide, 2019

Chapter 8: Monitoring And Review

A strategy is typically produced for a defined period of time, and allows for monitoring and review and for modification where needed to achieve desired objectives.²⁶

It is recommended that whilst the trees are still young, formal assessment should be carried out annually. The trees at this part of their life need the most care - the level and quality of that care can determine how successful their growth is for many years to come and ultimately how long the tree survives.

As part of the monitoring and review process the following should be accounted for: Increase in stem diameter, annual extension growth, foliage size and colour, crown size and uniformity and expected growth. TDAG²⁷ specifically recommends using indicators such as tree cover, tree health and qualitative dimensions.

Where resources are limited or it is not practical due to the size of the planting to monitor the entire tree population, it is recommended that a proportional sample is monitored to gain understanding.

A successful monitoring and review programme will increase the likelihood of the full establishment of trees.



²⁶ BS8545, 2014

²⁷ TDAG 2014

Chapter 9: Conclusions And Recommendations

This strategy serves as a tool to guide decision making and future action in regard to trees in Bexhill-on-Sea. It provides the starting point for a successful tree planting programme, where trees are given the best chance to establish themselves in the urban centre and the parish area.

The hotspot map provides a way to target the most valuable locations for planting in order to get the most out of the trees. It will help the council to work towards green equity, and resilience to the effects of climate change in the most vulnerable areas. This is, however, a model, and gives only a suggestion of good places to investigate planting opportunities; all sites must be inspected and assessed prior to any decision making to see if it is a valid tree planting location. Breaking down the locations by those which are suitable for community planting schemes versus road and verge planting makes undertaking these types of projects more manageable, and should help open communication and collaboration channels with the relevant authorities and groups.

Tree planting is more than just a numbers game; planting thousands of trees is pointless and a waste of money if most die within 10 years of planting. As such, using this strategy to inform intelligent species selection, planting practice, management, and aftercare will ensure that money spent on tree planting and establishment is money well invested in Bexhill's future. Bexhill's position as a coastal town provides significant challenges for tree establishment. Species selection will be critical to give the trees the best chance of success. Not only do trees have to be resilient against salt spray and high winds, but coastal areas typically

have thin, nutrient poor soils, which present difficulties to rapidly growing young trees.

Understanding the existing tree cover for the urban area and wider parish separately, combined with an understanding of potentially plantable space is useful to guide achievable canopy cover targets. It will also help to guide effective planting programmes in these areas, where the type of available space and the needs of the local people differ. It is important to observe that though the hotspot map indicates that a significant amount of land is potentially plantable, the majority is private gardens and agricultural land, therefore it is unrealistic to consider all of this as plantable space when creating canopy cover or tree planting targets.

The ecosystem services delivered by the trees and the amenity value of trees can and should be monitored as the urban forest develops. These services are vital to the local residents, and this knowledge can be used to secure funding in line with the policies and strategies highlighted within the review. Targeting specific funding streams using the 'hooks' which trees can provide will help to secure the future of Bexhill's urban forest.

Going forward, it will be important for Bexhill-on-Sea to build tree planting, management, and maintenance into policy and guidance in all sectors, including infrastructure, development, agriculture, and education. Community engagement is key, and the council should continue to build on the success of existing schemes, whilst also upgrading transport links into green corridors.

Tree planting programme

1. Build upon the momentum already established for community planting to complete all identified opportunities.
2. Exploit the small spaces identified for municipal planting, focussing on priority hotspots.

Tree selection & procurement

3. Focus on species and genera that are proven to grow within the Bexhill area. Trees in private spaces provide a ready demonstration model.
4. Drive resilience through diversity by first 'increasing the number of trees in locally proven, but lesser planted species, rather than new introductions'.
5. Review current specifications for young tree procurement using guidelines as set out above.
6. Produce a set of procurement specifications to suit Bexhill's particular needs, incorporating species recommendations for coastal sites.
7. Build relationships with nurseries who fulfil the criteria set out in the procurement specifications. This will include regular nursery visits and selection of young tree stock on site.
8. Consider the preparation and development of contract grow contracts with selected nurseries to ensure that not only the quality of tree stock required is available but also the diversity of tree stock required to produce a resilient tree population.
9. Develop a knowledge of nursery production systems and the implications of each for planting success for relevant staff and/or contractors.
10. Site assess trees which are present in the existing recorded population but constitute 0.1% or just above of that population to assess suitably for further planting.



Figure 13: Bexhill Centre Illustrating the Hard Landscape Environment Where Trees Could Play a Vital Future Role.

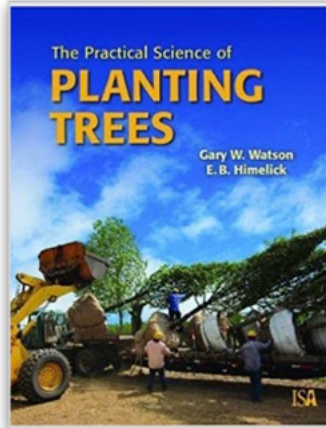
Tree establishment

11. Develop and implement a young tree management and maintenance programme which covers at least a five-year period following planting and ensure this programme is adhered to.
12. Consider the development of an independent audit system with agreed criteria to measure and report on the development of newly planted young trees.

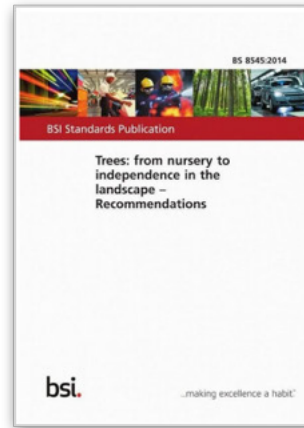
Future options

13. Explore opportunities for planting in hard landscapes, including creation of additional space through kerb buildouts.
14. Use the models and working practices developed within Bexhill as the basis for an expanded programme across the whole Rother District.
15. Where possible, explore the use of Sustainable Drainage Systems (SuDS), both to reduce flash flooding and as a means to store water for trees.

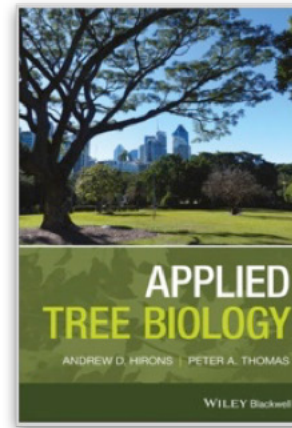
Useful Resources



The Practical Science of Planting Trees: Gary Watson and E.B. Himelick. ISA



BS 8545: From Nursery to Independence in the Landscape.



Applied Tree Biology: Andrew Hiron and Peter Thomas: Wiley Blackwell



Woodland Trust
How To Plant a Tree
[Woodland Trust Online Resource]



The Tree Council: Tree and Hedge Planting Guide



Trees and Design Action Group. Trees in Hard Landscape A Guide for Delivery. 2014.



Green Blue Urban: the 7 Fundamentals of Tree Planting in Paved Surrounds



Forest Research
Planting Practice
[Online Resource]

Bibliography

Barcham's tree planting guide. (2019).
Planting Guide - A guide to tree longevity in
the landscape. Barcham Trees Plc.

BS8545. (2014). Trees: from nursery to
independence in the landscape. British
Standard Institute. London. 80 pages.

Committee on Climate Change (2020) Policies
for the Sixth Carbon Budget and Net Zero.
[https://www.theccc.org.uk/wp-content/
uploads/2020/12/Policies-for-the-Sixth-
Carbon-Budget-and-Net-Zero.pdf](https://www.theccc.org.uk/wp-content/uploads/2020/12/Policies-for-the-Sixth-Carbon-Budget-and-Net-Zero.pdf)

DEFRA (2018) The 25 Year Environmental
Plan [online] Available at: [https://
assets.publishing.service.gov.uk/government/
uploads/system/uploads/attachment_data/
file/693158/25-year-environment-plan.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf)

DEFRA (2019) Clean Air Strategy [online]
Available at: [https://
assets.publishing.service.gov.uk/government/
uploads/system/uploads/attachment_data/
file/770715/clean-air-strategy-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf)

DEFRA (2021). A Plant Biosecurity Strategy
for Great Britain. Consultation [online]

Available at: [https://consult.defra.gov.uk/gb-
plant-biosecurity-strategy/a-plant-biosecurity-
strategy-for-great-britain/
supporting_documents/
FINAL%20GB%20Plant%20Biosecurity%20St
rategy%20.pdf](https://consult.defra.gov.uk/gb-plant-biosecurity-strategy/a-plant-biosecurity-strategy-for-great-britain/supporting_documents/FINAL%20GB%20Plant%20Biosecurity%20Strategy%20.pdf)

Department for Business, Energy & Industrial
Strategy, 2017. Clean Growth Strategy.
[https://assets.publishing.service.gov.uk/
government/uploads/system/uploads/
attachment_data/file/700496/clean-growth-
strategy-correction-april-2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf)

Department for Business, Energy & Industrial
Strategy, 2020. The UK's Nationally
Determined Contribution communication to
the UNFCCC. [https://
assets.publishing.service.gov.uk/government/
uploads/system/uploads/attachment_data/
file/943618/uk-2030-ndc.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943618/uk-2030-ndc.pdf)

Doick, K.J., Davies, H.J., Handley, P., Vaz
Monteiro, M., O'Brien, L., Ashwood F. (2016).
Introducing England's urban forests:
Definition, distribution, composition and
benefits. UFWACN (Urban Forestry and

Woodlands Advisory Committees (FWAC)
Network), 14 pp.

FAO (2016). FAO Guidelines on Urban and
Peri-Urban Forestry. Compiled by Salbitano,
F., Borelli, S., Conigliaro, M., Chen, Y. [online]
Available at: [http://www.fao.org/3/a-
i6210e.pdf](http://www.fao.org/3/a-i6210e.pdf)

FAO (2020). FAO Green Cities Initiative [online]
Available at: [http://www.fao.org/3/cb0848en/
cb0848en.pdf](http://www.fao.org/3/cb0848en/cb0848en.pdf)

Forestry Commission and Animal and Plant
Health Agency (2018). Guidance. How
biosecurity can prevent the introduction and
spread of tree pests and diseases [online]
Available at: [https://www.gov.uk/guidance/
prevent-the-introduction-and-spread-of-tree-
pests-and-diseases](https://www.gov.uk/guidance/prevent-the-introduction-and-spread-of-tree-pests-and-diseases)

Forestry Commission (2020). National Plant
Health Week: Biosecurity – the first line of
defence [online] Available at: [https://
forestrycommission.blog.gov.uk/2020/09/25/
national-plant-health-week-biosecurity-the-
first-line-of-defence/](https://forestrycommission.blog.gov.uk/2020/09/25/national-plant-health-week-biosecurity-the-first-line-of-defence/)

Forest Research (2022). Planting Practice [online] Available at: <https://www.forestresearch.gov.uk/tools-and-resources/fthr/urban-regeneration-and-greenspace-partnership/greenspace-in-practice/greenspace-establishment-practices/planting-practice/>

Green Blue Urban (2016). The 7 Fundamentals of Tree Planting in Paved Surrounds [online] Available at: <https://greenblue.com/gb/resource-centre/7-fundamentals-tree-planting-paved-surrounds/>

Hirons, A.D. and Sjöman, H. (2019) Tree Species Selection for Green Infrastructure: A Guide for Specifiers, Issue 1.3. Trees & Design Action Group

Johnsons of Wixley (anon). Tree Size Guide [online] Available at: <https://nurserymen.co.uk/solutions/tree-size-guide/>

Mckinney, M.L. (2006) Urbanization as a major cause of homogenization. Biol. Conserv. 127, pp. 247-260.

Public Health England (2018). Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/708855/Estimation_of_costs_to_the_NHS_and_social_care_due_to_the_health_impacts_of_air_pollution_-_summary_report.pdf

Rogers, K and Kirkam, T. (2019). Trees - Broadleaf and conifer models (all variations covered) Owners Workshop Manual. Haynes. Sparkford, Yeovil, Somerset, UK.

RDC (2008): RDC Local Development Framework [online] Available at https://www.rother.gov.uk/wp-content/uploads/2020/01/Part_2_Village_Appraisals2.pdf

RDC (2009): Core Strategy: Market Towns and Villages Landscape Assessment [online] Available at https://www.rother.gov.uk/wp-content/uploads/2020/01/Landscape_Assessment_Market_Towns_and_Villages_Volume_2_Tables.pdf

RDC (2019): Development and Site Allocation Local Plan [online] Available at: <https://www.rother.gov.uk/wp-content/uploads/>

[2020/01/DaSA_Adopted_December_2019_Web.pdf](#)

RDC (2020). Environment Strategy 2020-2030 [online] Available at: <https://www.rother.gov.uk/wp-content/uploads/2020/11/RotherEnvironmentStrategy2020-2030-VersionSept2020.pdf>

TDAG. (2014). Trees in Hard Landscapes A Guide for Delivery. Trees and Design Action Group. Available online: https://www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_tihl.pdf

The Tree Council: Tree Planting Guide (2019). Tree Planting Guide [online] Available at: <https://treecouncil.org.uk/wp-content/uploads/2019/12/Tree-planting-guide.pdf>

United Nations (2015) 2030 Agenda for Sustainable Development [online] Available at: <https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

United Nations (2015). Department of Economic and Social Affairs - Sustainable Development. United Nations - Sustainable Development Goals. [online] Available at: <https://sdgs.un.org/goals>

United Nations (2017) Strategic Plan for Forests 2030 [online] Available at: https://www.un.org/esa/forests/wp-content/uploads/2017/09/UNSPF-Briefing_Note.pdf

United Nations (2021) Decade on Ecosystem Restoration 2021-2030 [online] Available at: <https://wedocs.unep.org/bitstream/handle/20.500.11822/31813/ERDStrat.pdf?sequence=1&isAllowed=y>

United Nations (2022). The Sustainable Development Agenda. United Nations - Sustainable Development Goals. [online] Available at: <https://www.un.org/sustainabledevelopment/development-agenda-retired/>

United Nations Environment Programme (2020) Convention on Biological Diversity. Update of the zero draft of the Post-2020 Global Biodiversity Framework. [online] Available at: <https://www.cbd.int/doc/c/3064/749a/0f65ac7f9def86707f4eaefa/post2020-prep-02-01-en.pdf>

United Nations Framework Convention on Climate Change (2008) Kyoto Protocol Reference Manual, On Accounting of Emissions and Assigned Amount. [online] Available at: https://unfccc.int/resource/docs/publications/08_unfccc_kp_ref_manual.pdf

United Nations Habitat (2017) New Urban Agenda-Sustainable Cities and Human Settlements for All [online] Available at: <https://uploads.habitat3.org/hb3/NUA-English.pdf>

Woodland Trust (2022). How to Plant a Tree [online] Available at: <https://www.woodlandtrust.org.uk/plant-trees/advice/how-to-plant/>



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