Wokingham Borough Tree Survey

Trees and woodlands in the Wokingham borough help create a quality of place and life that attracts people to live, study, visit and work in the area. As part of the green infrastructure, trees provide the backdrop to our towns and villages.

Trees and woodlands are an essential feature of the Wokingham landscape with many veteran and ancient trees and woodlands creating the 'story of the place'; indeed, the importance of trees, particularly the oak is recognised by the acorn and oak leaf that form the Town's heraldic charge.

While it is generally understood that trees provide a range of benefits understanding and rationalising those benefits is often difficult. Wokingham Borough Council as part of the tree strategy project commissioned an assessment of the tree stock within the borough to ascertain the value of these benefits and to inform on the numbers, condition and diversity of the tree asset across the borough both within their ownership and across the broader land area of towns, villages and parishes.

Two surveys were undertaken during the summer of 2022. These surveys included an assessment of the borough's tree coverage in general using the desk based i-Tree canopy assessment online tool and a ground survey collecting specific tree information across Council ownership across various random locations within each parish.

i-Tree Canopy Cover Assessment

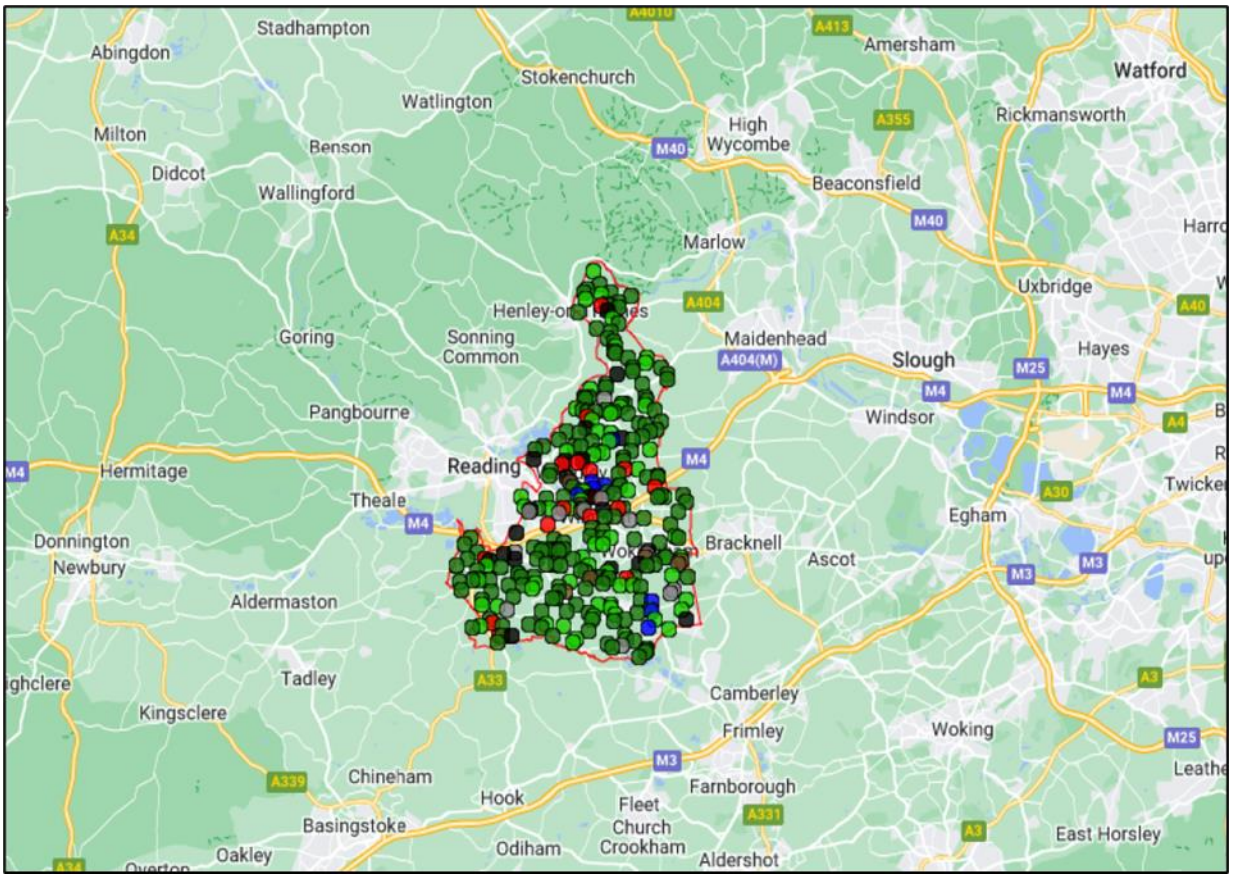
i-Tree is a state-of-the-art, peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry analysis and benefits assessment tools. i-Tree tools can help strengthen forest and tree management and advocacy efforts by quantifying forest structure and the environmental benefits that trees provide.

i-Tree canopy is a desk-based assessment using aerial imagery to randomly select location points within the borough, each location point is then assessed as to the ground cover identifying whether it is a tree/shrub, grass/herbaceous, impervious building, impervious road, impervious other, soil/bare ground or water.

The collected data is then automatically analysed by the built-in algorithm to produce an overview of the tree canopy coverage, the amount of carbon sequestered per annum and its value rationalised in monetary terms to the borough, the data also highlights the total amount and value of the stored carbon asset. Further information is also provided on the amount of surface runoff that is intercepted and the monetary saving this provides to the borough.

The i-Tree canopy survey for Wokingham assessed 301 sample points across the borough for their ground cover, a plan of the various points is shown below in Fig.1.

Fig.1 – Location plan of all i-Tree sample points across Wokingham borough

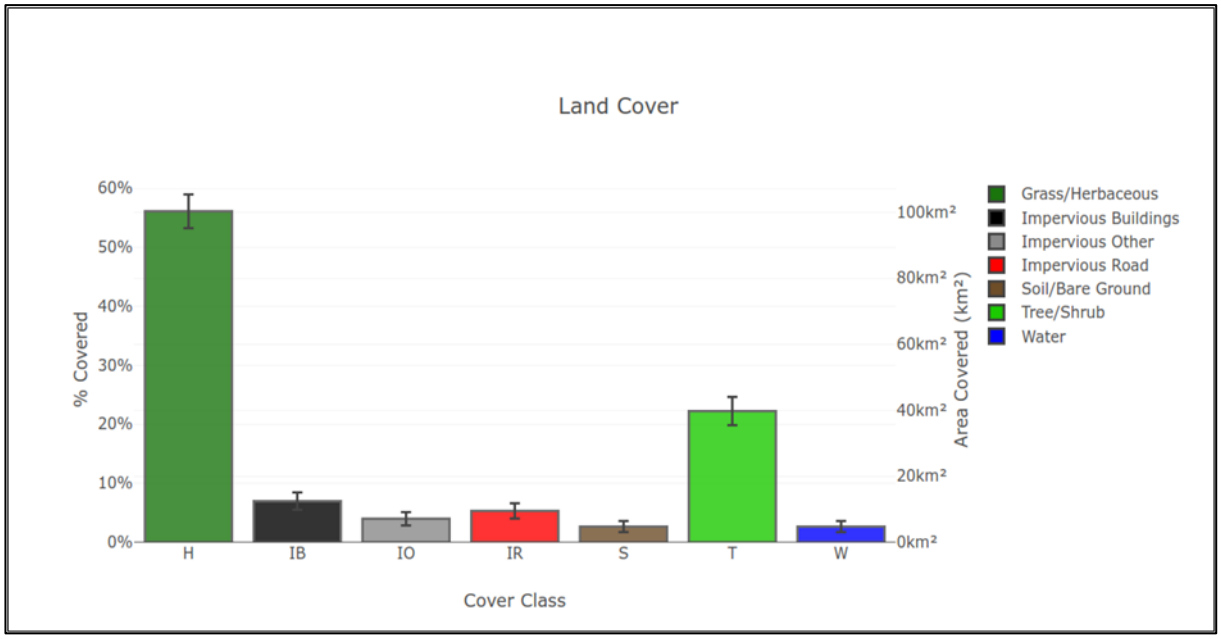


In summary the assessment of the borough indicates that approximately 22% of the borough landmass is under tree or shrub canopy Fig.2 and Fig.3. The average tree canopy cover is 16% in England (Treeconomics, 2017), it is therefore clear that Wokingham borough has an above average tree canopy.

Fig.2 – i-Tree Canopy breakdown of percentage ground cover class in Wokingham borough

Abbr.	Cover Class	Description	Points	% Cover ± SE	Area (km²) ± SE
H	Grass/Herbaceous		169	56.15 ± 2.86	100.39 ± 5.11
IB	Impervious Buildings		21	6.98 ± 1.47	12.47 ± 2.63
IO	Impervious Other		12	3.99 ± 1.13	7.13 ± 2.02
IR	Impervious Road		16	5.32 ± 1.29	9.50 ± 2.31
S	Soil/Bare Ground		8	2.66 ± 0.94	4.75 ± 1.68
T	Tree/Shrub		67	22.26 ± 2.40	39.80 ± 4.29
W	Water		8	2.66 ± 0.94	4.75 ± 1.68
Total			**301**	**100.00**	**178.80**

Fig.3 – i-Tree Canopy breakdown of percentage ground cover class in Wokingham borough



The canopy of Wokingham provides an annual carbon sequestration Fig.4. of over 12 kilo tons of carbon which would have a value of over £3 million, in total the current tree asset stores over 305 Kilo tons of Carbon with a value of over £77 million.

Fig.4 – i-Tree Canopy sequestered carbon from the tree canopy in Wokingham borough

Tree Benefit Estimates: Carbon (Metric units)

Description	Carbon (kt)	±SE	CO_2 Equiv. (kt)	±SE	Value (GBP)	±SE
Sequestered annually in trees	12.18	±1.31	44.66	±4.81	£3,081,265	±331,907
Stored in trees (Note: this benefit is not an annual rate)	305.86	±32.95	1,121.48	±120.80	£77,382,117	±8,335,428

Currency is in GBP and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Amount sequestered is based on 0.306 kt of Carbon, or 1.122 kt of CO_2, per km²/yr and rounded. Amount stored is based on 7.685 kt of Carbon, or 28.178 kt of CO_2, per km² and rounded. Value (GBP) is based on £253,000.00/kt of Carbon, or £69,000.00/kt of CO_2 and rounded. (Metric units: kt = kilotonnes, metric kilotons, km² = square kilometers)

Further benefits Fig.5 indicate that the tree canopy intercepts and prevents over 985 mega litres of rainwater runoff, this has a value of over £1.5 million per annum.

Fig. 5 – i-Tree canopy hydrological benefits of tree canopy in Wokingham borough

Tree Benefit Estimates: Hydrological (Metric units)

Abbr.	Benefit	Amount (Ml)	±SE	Value (GBP)	±SE
AVRO	Avoided Runoff	985.91	±106.20	£1,528,052	±164,598
E	Evaporation	5,563.00	±599.23	N/A	N/A
I	Interception	5,591.58	±602.31	N/A	N/A
T	Transpiration	15,993.78	±1,722.81	N/A	N/A
PE	Potential Evaporation	13,964.68	±1,504.24	N/A	N/A
PET	Potential Evapotranspiration	10,856.37	±1,169.42	N/A	N/A

Currency is in GBP and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Hydrological Estimates are based on these values in Ml/km²/yr @ £/Ml/yr and rounded:
AVRO 24.771 @ £1,549.90 | E 139.773 @ N/A | I 140.491 @ N/A | T 401.850 @ N/A | PE 350.868 @ N/A | PET 272.771 @ N/A (Metric units: Ml = megaliters, km² = square kilometers)

The assessment also indicates that approximately 56% of the land is covered by grass or bare earth. While much of this is utilised for agricultural production, changing land use by only a small percentage through woodland creation and tree planting could provide significant benefits to the borough and help the Council's goal of addressing the climate emergency.

The Council recognises that while planting woodlands can sequester large amounts of carbon, many of the extra benefits that trees can provide, for example reduction in air pollution and reduction in surface water runoff, are found in our urban areas. As such while technically more challenging to accomplish, it is recognised that where resources allow increased tree planting in our towns and villages should be a goal of the tree strategy.

Tree Condition Survey

The purpose of the tree survey was to ascertain the number of trees within the borough, the makeup of the 6 main tree species and their general condition. This data was collected through a desk-based analysis and a ground truthing survey of random plots within the borough. The various survey datasets are provided in the tables and charts Fig.7 and Fig.8.

Desk based assessment

The desk-based survey utilised the BlueSky's National Tree Map™ (NTM™), a detailed dataset derived from high quality aerial imagery. The NTM™ dataset provides a unique, comprehensive database of location, height and canopy/crown extents for every single tree 3m and above in height. The dataset for Wokingham Borough was analysed to provide the following information:

- The number of trees identified on the NTM as being within WBC including both council and privately owned trees.
- The number of trees from NTM within the ownership of WBC.
- Number of trees within each parish including both WBC and privately owned trees.
- Number of trees from NTM within each parish under WBC ownership.

Fig.6 – Breakdown of tree numbers by parish across both private and WBC ownerships

	Number of trees		
Parish name	**WBC-owned land**	**Privately-owned land**	**Total land**
Arborfield and Newland CP	1537	35464	37001
Barkham CP	3969	20473	24442
Charvil CP	3746	6596	10342
Earley CP	9740	29510	39250
Finchampstead CP	10225	90855	101080
Remenham CP	908	30337	31245
Ruscombe CP	508	11798	12306
Shinfield CP	7031	32768	39799
Sonning CP	969	14031	15000
St. Nicholas, Hurst CP	9118	47945	57063
Swallowfield CP	3533	43255	46788
Twyford CP	2368	7640	10008
Wargrave CP	2352	58762	61114
Winnersh CP	5188	15172	20360
Wokingham CP	11744	37462	49206
Wokingham Without CP	6964	37493	44457
Woodley CP	11453	19467	30920
Total	**91353**	**539028**	**630381**

Analysis of the NTM dataset Fig.6 has identified that WBC are responsible for approximately 91,000 trees with a further 540,000 being within private ownership. The total number of trees within the borough is indicated to be over 630,000.

The results for the breakdown of trees in each parish shows that the spread of trees across each parish is not evenly distributed. This is quite common in relation to land use and to the socio-economic classification of areas; with less trees often being found in the heavily developed urban centres and areas with a lower socio-economic base, the numbers of trees generally increase in suburbia as more undeveloped space is available. Many trees are generally found within the wider rural setting.

The information will help to inform the Council of its tree planting goals to target in part those areas that have significantly fewer trees than those that are already well treed. It is the increase in tree and canopy cover within these lower treed areas that will generally provide the largest socio-economic improvements and the financial benefits highlighted in the i-Tree canopy survey.

Plot survey

By using the NTM data as a basis; a series of sample plots were created across the borough, these were targeted to capture sites within the Council's ownership containing the largest number of trees. The survey consisted of 102 survey plots (50m x 50m) located across the Councils ownership with 6 plots in each of the 17 parishes. The following data was collected for each tree within the plot:

- Tree species
- Tree age
- Tree condition – physiological and structural
- Tree fungus / pest / disease

Image 1: Sample plot selection

Tree Species

The tree survey identified that the most prevalent trees found within WBC ownership across the borough was oak and ash, as can be seen in Fig.7 and Fig.8 Understanding the makeup of the tree asset is important in terms of identifying risk and ensuring that any new tree planting is designed to be resilient.

Figure 7. The 6 most prevalent tree species identified in the tree survey

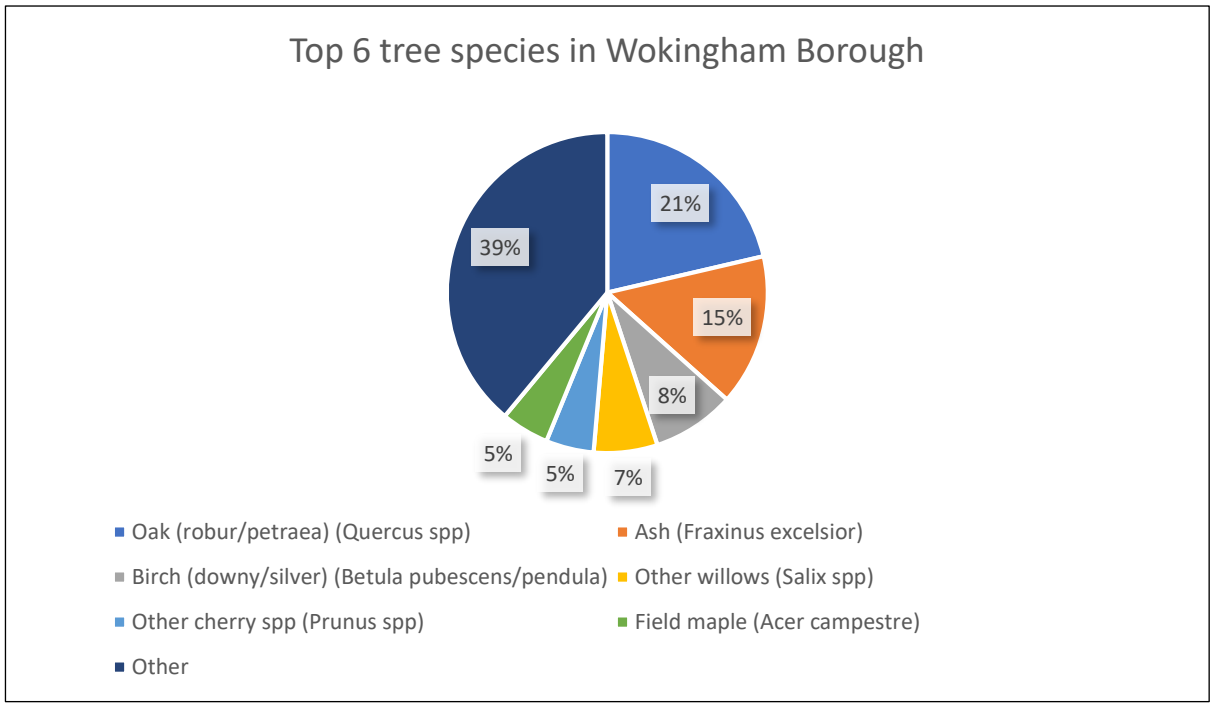


Figure 8. Extrapolated number of each of the top 6 species tree against the number of trees in NTM desk-based analysis.

Species	Tree count	Tree count scaled up to NTM
Oak (robur/petraea) (Quercus spp)	336	19513
Ash (Fraxinus excelsior)	240	13938
Birch (downy/silver) (Betula pubescens/pendula)	131	7608
Other willows (Salix spp)	101	5866
Other cherry spp (Prunus spp)	76	4414
Field maple (Acer campestre)	76	4414
Other	613	35600
Total	**1573**	**91353**

Over the last few years, it has become increasingly apparent that the UK is becoming increasingly affected by various tree pathogens that have the potential to cause widespread impacts to our trees and woodlands.

The most significant of these currently is the *Hymenoscyphus fraxineus* fungus that causes ash dieback (ADB). This fungus is of particular significance in our broadleaf woodlands where it has the potential to significantly affect the timber yield in commercial hardwood production. It has significant relevance in terms of our landscape often found in roadside verges and hedges as well as planted in our town and cities. As the fungal infection progresses with the ash, the tree becomes increasingly weakened with dead branches and sparse crowns becoming obvious, a link between ADB and *armillaria* spp (honey fungus) has also increased concern in relation to the potential for windthrow to occur.

Concern is so great that The Tree Council have issued guidance on the identification of this infection and on its management. Understanding the potential impact and risk this infection poses are crucial to WBC from both their climate emergency tree planting goals and from a health and safety point of view. ADB has the potential to impact our trees in the manner that Dutch elm disease, caused by the fungus *Ophiostoma novo-ulmi,* ravaged our trees in the 1970's. Widescale felling may be required, especially across the highway network to ensure these routes remain safe. Understanding the potential number of trees this may affect will allow the Council to plan and budget for such work in the future.

Further detail on the number of ash trees by parish can be found in Figure 9.

Figure 9. Number of Ash trees on WBC owned land per parish

Ownership	Parish	Tree count (all species)	Ash count estimate for WBC land
WBC-owned land	Arborfield and Newland CP	1537	235
	Barkham CP	3969	606
	Charvil CP	3746	572
	Earley CP	9740	1486
	Finchampstead CP	10225	1560
	Remenham CP	908	139
	Ruscombe CP	508	78
	Shinfield CP	7031	1073
	Sonning CP	969	148

	St. Nicholas, Hurst CP	9118	1391
	Swallowfield CP	3533	539
	Twyford CP	2368	361
	Wargrave CP	2352	359
	Winnersh CP	5188	792
	Wokingham CP	11744	1792
	Wokingham Without CP	6964	1063
	Woodley CP	11453	1747
	All	**91353**	**13938**

Tree age

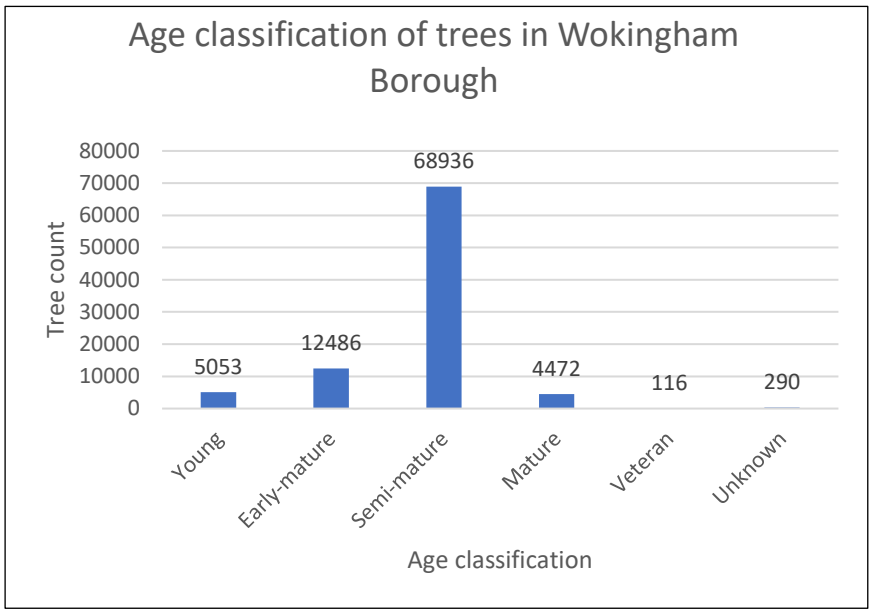
It is generally understood that to have a sustainable and flourishing urban forest you require a diverse age structure, trees will grow, decline and die at different rates and times dependant on a variety of factors including but not limited, to species, environment and climate.

To achieve continuity of trees and woodlands within a landscape it therefore stands to reason that the trees and woodlands must be replaced as fast as they are lost; however, if we simply only plant a new tree every time one is removed or dies, we will slowly lose the age diversity we find in a well-developed urban forest. To ensure continuity of tree canopy cover we must therefore ensure that the age structure of our urban forest is such that we have most tree numbers across the young, early mature and semi mature age classes with lower numbers of mature, veteran and ancient trees.

The sample plot survey, see Fig 10, indicates that Wokingham has many semi-mature trees in comparison to the other age classifications. While at first this appears to be in line with the previous statements regarding a sustainable urban forest the profile, in Wokingham it does highlight a level of risk.

Semi mature trees are required to ensure mature trees develop in the future however these trees are regularly viewed as less important when considering land for development or where highway renewal schemes are undertaken, these trees often do not have the prominence in the landscape that larger mature trees provide and as such they are often removed. This diminishes the available tree stock that can reach the levels of maturity where the greatest number of ecosystem services are provided.

Figure 10. Bar chart indicating the number of trees in each age class

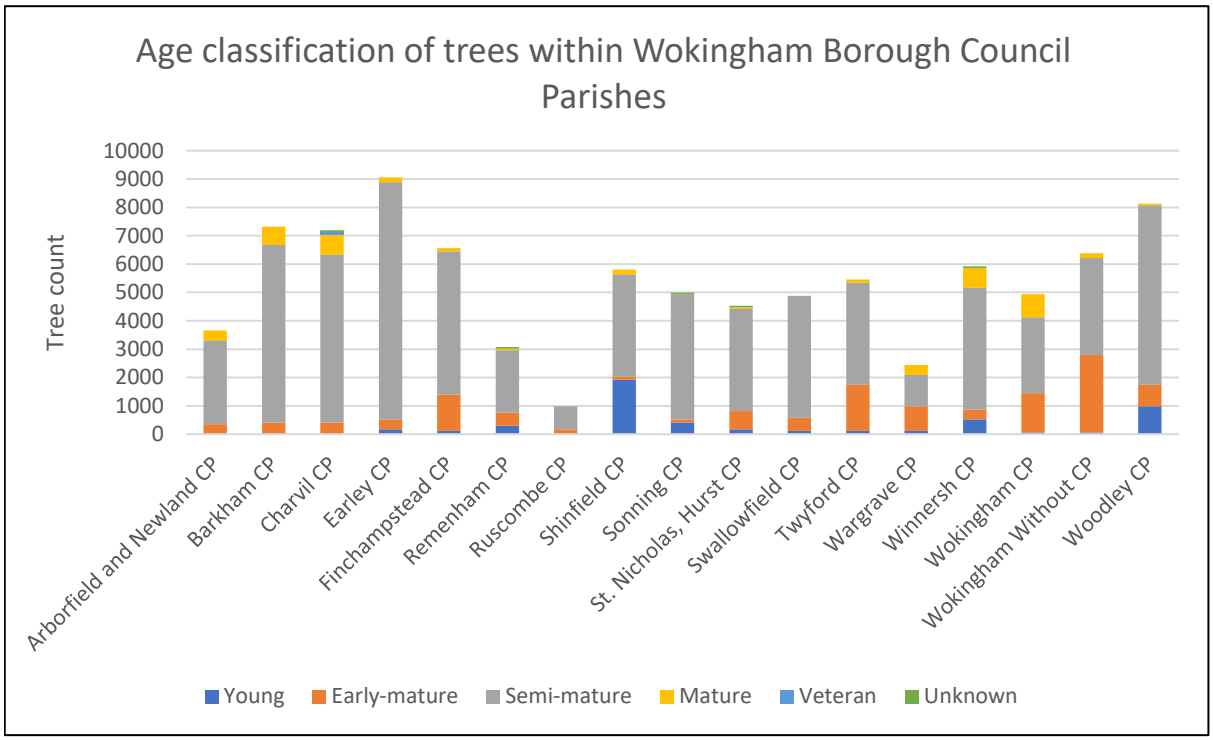


The results indicate that WBC's Tree Planting goal in line with the Climate Emergency Action Plan would go a significant way to addressing the potential risk of decline in the number of mature trees within the borough. It also highlights the importance of both ensuring those newly planted trees are maintained to full establishment and the importance that semi-mature trees play in the developing urban forest.

The extrapolated data from the tree survey against the NTM dataset indicates the statistical presence of 116 Veteran trees within the borough, however the local veteran tree group Wokingham and District Veteran Tree Association have been systematically surveying trees in the borough as part of the Woodland Trust Ancient Tree hunt. This volunteer survey has identified the presence of over 8.5k trees within the borough which it has identified as being ancient or veteran trees. It is recognised that ancient and veteran trees are a significant visual and ecological asset that requires great care and protection. WBC have recognised this within the tree strategy and seek to formally protect these important trees where circumstances and resources allow.

The chart found at Figure 11. provides a breakdown of the age structure of the WBC owned tree cover in each Parish scaled up to the number of trees within the NTM dataset. This data can be used in conjunction with the tree planting potential plans to identify and target those areas most in need of new planting subject to resource availability.

Figure 11. Age structure of WBC owned trees within each parish.



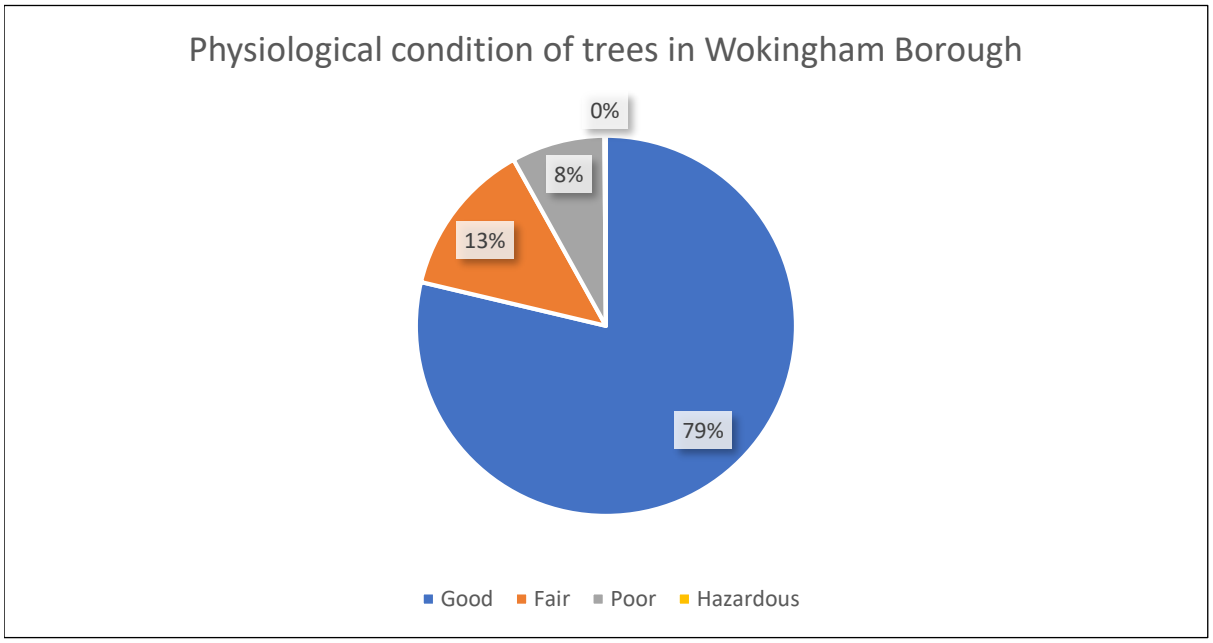
Tree condition

During the plot survey each tree was assessed for both its physiological condition and that of its structural condition. This information again is important to planning and maintaining a resilient and sustainable urban forest. Physiological condition considers the abiotic and biotic factors that may be affecting the health of a tree. Understanding the relationship, a tree has with its natural surroundings and how these may affect the trees health are important to ascertain whether remedial action should be taken to address significant issues or in some cases whether a tree can be left to its own devices.

Visual cues such as thinning canopies, small leaves, prolific production of epicormic growth, wilting and premature leaf loss can all be evidencing a tree is under stress. Stresses may be caused by the environment such as through extreme changes to our climate such as the summer drought conditions of 2022 or through the impact of human actions such as use of herbicides or road salt. Trees that are under such stresses are often more prone to infection by fungal pathogens such as the previously mentioned *Hymenocyphus fraxineus*.

The results of this element of the survey can be found in the chart below Fig 12. In general, the surveyed trees were in a good physiological condition with only a small percentage falling into the fair or poor category. This indicates that most of the tree asset is in a healthy condition, considering the large bias in age classification toward semi mature the future may be positive for seeing many trees developing into maturity, this may however also rely on sufficient resources to both maintain and protect these trees.

Figure 12. Breakdown by percentage of the physiological condition of trees within WBC

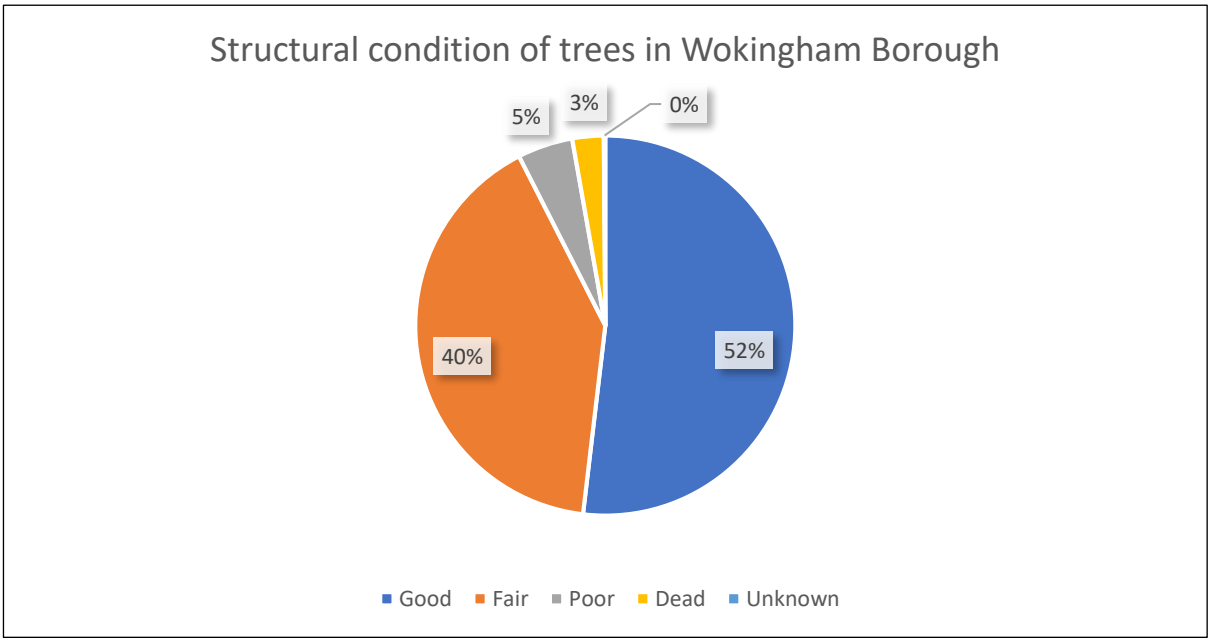


The second element of tree condition is that of its structure, this comprises of both natural elements, such as the growth habit of a particular tree species e.g., the propensity of a Norway maple *Acer platanoides* to produce included unions which can later lead to branch failures, from the action of weather, e.g., storm damage or from the actions of humans, e.g., mechanical damage to tree roots from inconsiderate trenching or sub-standard tree works.

The results of this element as indicated in Fig 13. below, are still broadly positive; however as significant proportion of trees are identified as being within the fair category. This seeming decrease in the condition of the tree stock is however not a significant issue. Most trees found in our towns and cities will be affected in some way through specific growth traits as previously mentioned or through some form of mechanical damage via either natural or human interaction which will have caused damage to the tree.

The low numbers of trees in a poor or dead condition highlight the quality of condition the trees bring to the borough. Had the results indicated a significant percentage of trees of being in a poor structural condition, this would highlight a potential significant liability for the Council, it should be noted however that these percentages are derived from a physical survey of trees extrapolated against the NTM dataset – which indicates that WBC have approximately 91k trees under their responsibility, if around 8% of these are in a poor or dead condition this still equates to over 7k trees that may require some action to ensure the tree is in a safe condition that poses little or no risk to the public or property.

Figure 13. Breakdown by percentage of the structural condition of trees within WBC.



Pathogens

The pressure on the borough's trees has never been higher from pest and disease. Nationally we are seeing the increase in foreign pests and diseases. Some of these pests and diseases have been present in the UK for many years while others are more recent. While some of these pests and diseases are endemic and well understood others are less so. It is however recognised that pests and diseases have the potential to significantly impact both tree health and safety; and some may also affect the health of the local population.

While undertaking the tree survey several pests and diseases were identified, see Figure 14. and 15. Dutch elm disease (DED) was identified 30 times across the borough, while this is now endemic across the UK the impact is clear in the decline and death of many of our elm trees. The disease generally affects the semi mature elm growing from original root stock of trees that were infected and either died or were removed in the last 40 years. The survey indicated the presence of 30 trees with the infection which when extrapolated against the NTM indicates there are around 1750 trees within the borough that have DED. As the trees succumb to the disease they are at increased risk of branch and stem failure posing a risk to highways, property and people.

Ash dieback caused by the fungus *Hymenocyphus fraxineus* is perhaps of more relevance than DED as this fungal infection as previously noted has the potential to cause the rapid decline and death of our mature ash trees. This has the potential to dramatically and suddenly change the view of our landscapes and woodlands while also placing a significant burden and liability on the local authority resources. It is recommended by the Tree Council that all local authorities undertake surveys of their trees to identify the presence of both ash trees and the prevalence of the disease, the Tree Council provide a useful guidance note with the recommended approach for the management of ADB based on a 4-tier classification system.

Regarding the potential of pest and disease to also affect the health of the residents of the borough the survey identified 1 tree with Oak processionary moth, the caterpillars of this moth and their nests contain fine hairs which can cause severe skin irritation and affect breathing if inhaled.

Significant infestations of the oak processionary moth may place a significant burden on the local authority with a requirement to undertake nest removal and the use of pesticides to kill the moth and caterpillars. The use of such chemicals however is nonselective in the various moth (*Lepidoptera spp*) they affect, given the importance of the ancient and veteran trees that are found within the borough and the ecological communities they support, it is important to identify and address infestations an early stage.

Fig 14. Overview of the most common identified pests within the tree survey.

Pests	Tree survey count	Tree count scaled up to NTM
Dutch elm disease (*O. novo-ulmi*)	30	1742
Oak processionary moth (*Thaumetopoea processionea*)	1	58
Other	1	58
None	1541	89495
Total	**1573**	**91353**

Fig 15. Overview of the most common identified pests within the tree survey.

Fungus	Tree survey count	Tree count scaled up to NTM
Ash bracket (*Innonotus hispidus*)	1	58
Ash dieback (*Hymenoscyphus fraxineus*)	75	4356
Other	1	58
None	1496	86881
Total	**1573**	**91353**

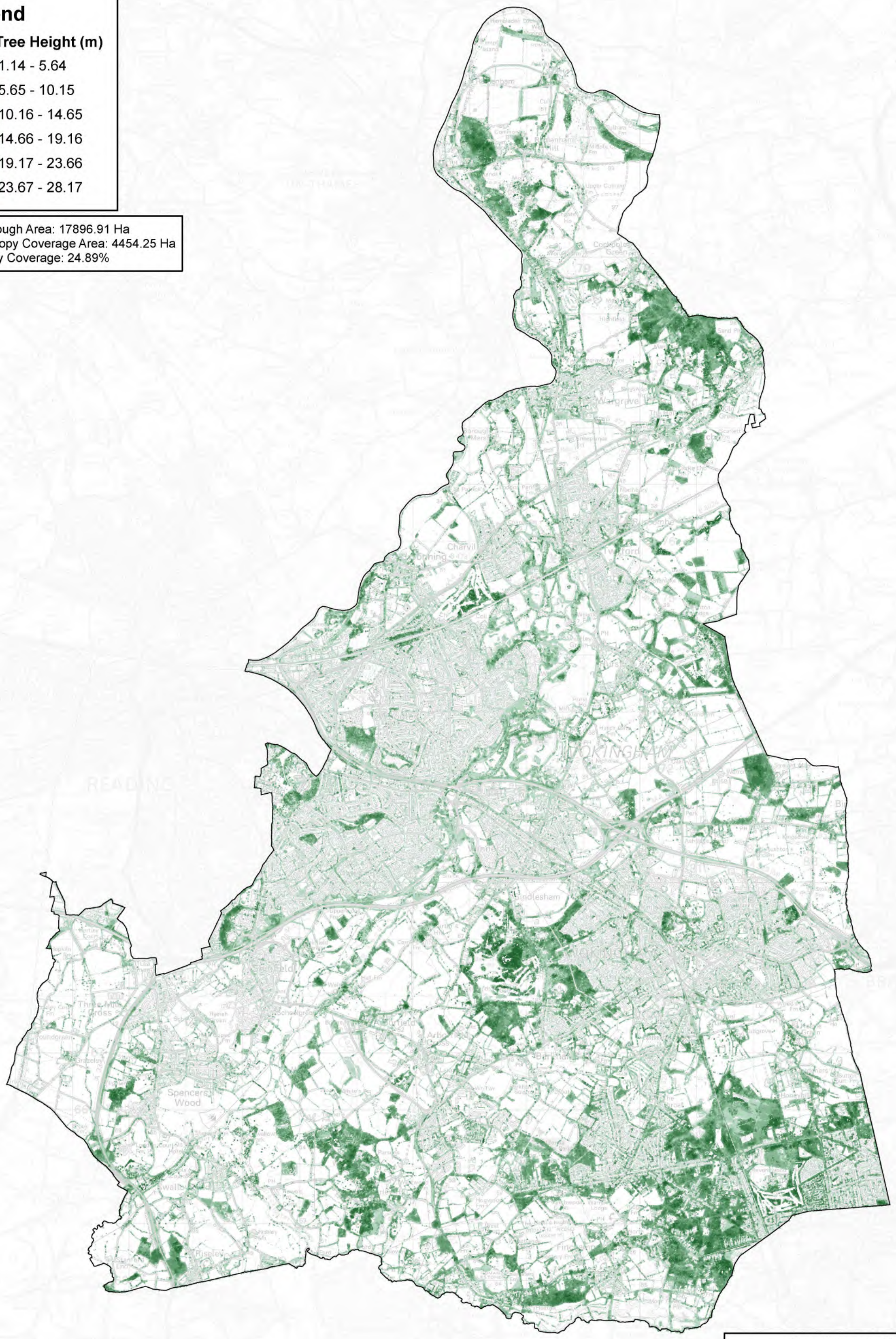
Borough Canopy Cover

Legend

Mean Tree Height (m)

- 1.14 - 5.64
- 5.65 - 10.15
- 10.16 - 14.65
- 14.66 - 19.16
- 19.17 - 23.66
- 23.67 - 28.17

Total Borough Area: 17896.91 Ha
Total Canopy Coverage Area: 4454.25 Ha
% Canopy Coverage: 24.89%



0 0.5 1 2 Miles

NORTH

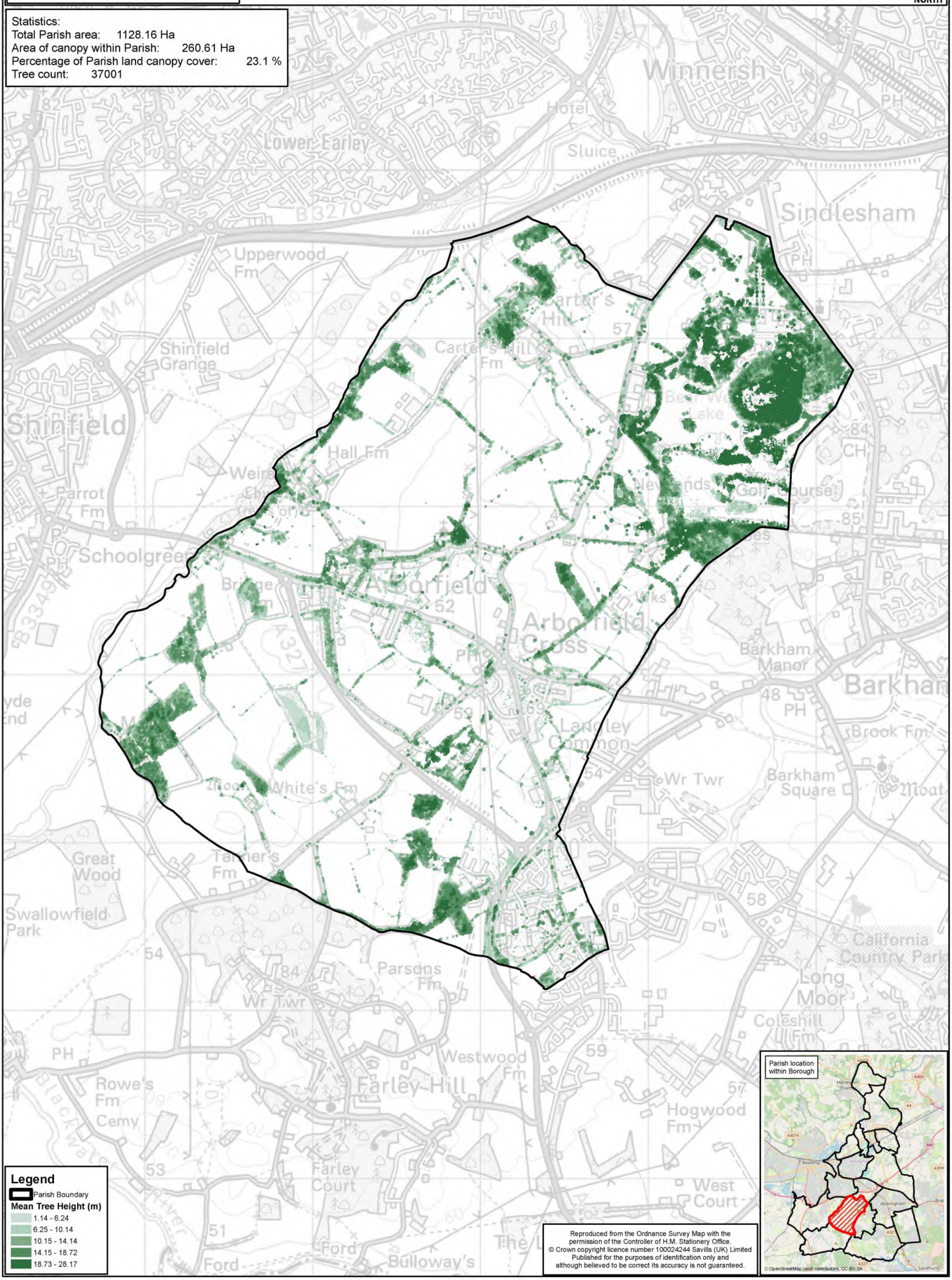
Parish Canopy Cover - Full Coverage

Arborfield and Newland CP

0 0.075 0.15 0.3 Miles

NORTH

Statistics:
Total Parish area: 1128.16 Ha
Area of canopy within Parish: 260.61 Ha
Percentage of Parish land canopy cover: 23.1 %
Tree count: 37001



Parish Canopy Cover - Full Coverage

Barkham CP

0 0.05 0.1 0.2 Miles

NORTH

Statistics:
Total Parish area: 667.02 Ha
Area of canopy within Parish: 174.99 Ha
Percentage of Parish land canopy cover: 26.23 %
Tree count: 24442

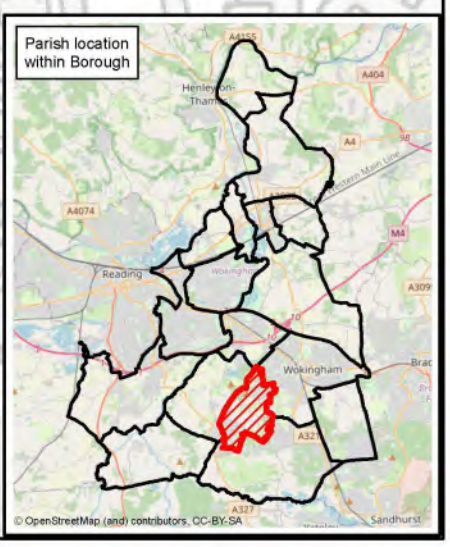
Legend

Parish Boundary

Mean Tree Height (m)

- 1.14 - 6.24
- 6.25 - 10.14
- 10.15 - 14.14
- 14.15 - 18.72
- 18.73 - 28.17

Parish location within Borough



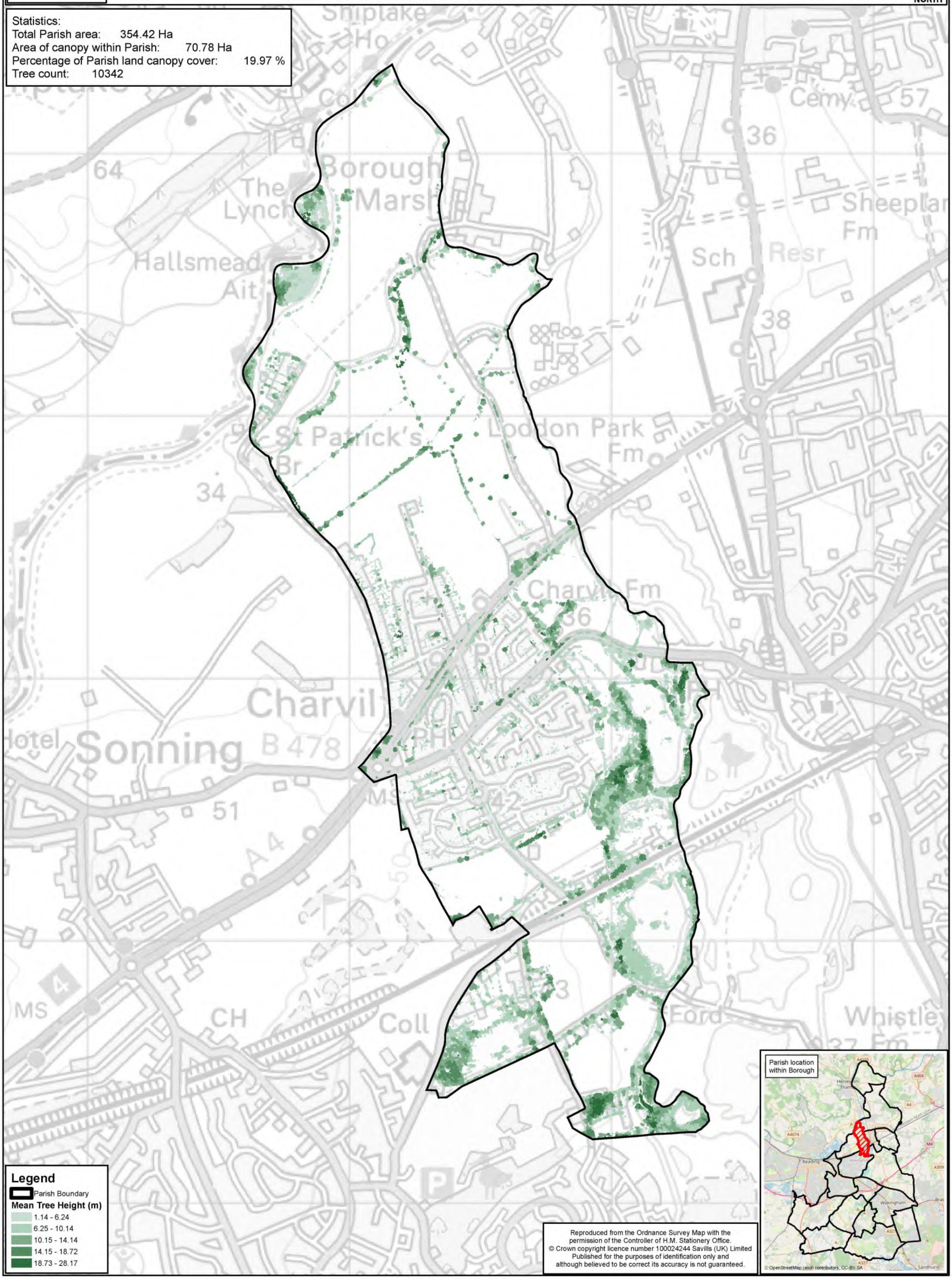
Parish Canopy Cover - Full Coverage

Charvil CP

0 0.05 0.1 0.2 Miles

NORTH

Statistics:
Total Parish area: 354.42 Ha
Area of canopy within Parish: 70.78 Ha
Percentage of Parish land canopy cover: 19.97 %
Tree count: 10342



Legend

Parish Boundary

Mean Tree Height (m)

- 1.14 - 6.24
- 6.25 - 10.14
- 10.15 - 14.14
- 14.15 - 18.72
- 18.73 - 28.17

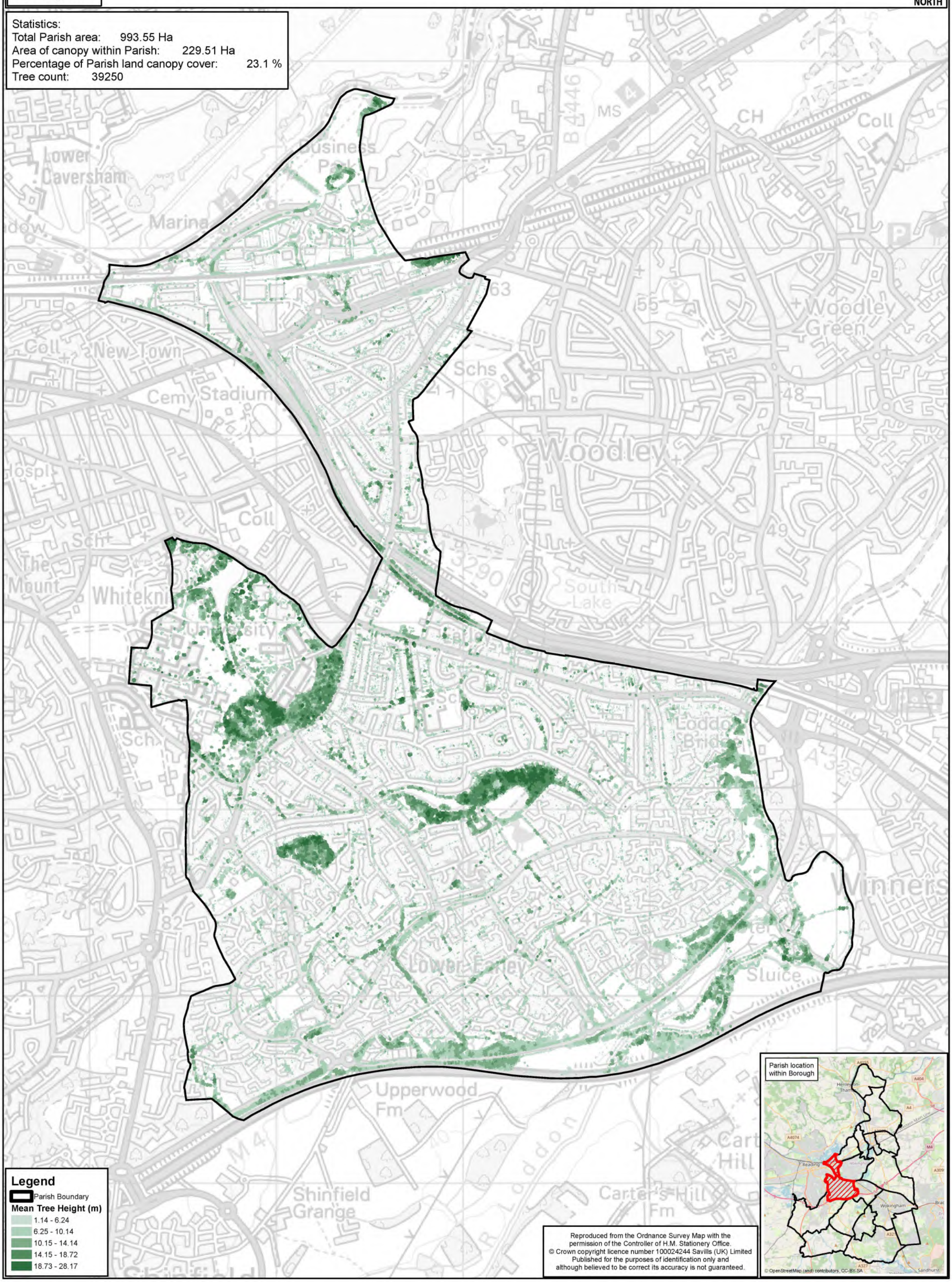
Parish Canopy Cover - Full Coverage

Earley CP

0 0.075 0.15 0.3 Miles

NORTH

Statistics:
Total Parish area: 993.55 Ha
Area of canopy within Parish: 229.51 Ha
Percentage of Parish land canopy cover: 23.1 %
Tree count: 39250



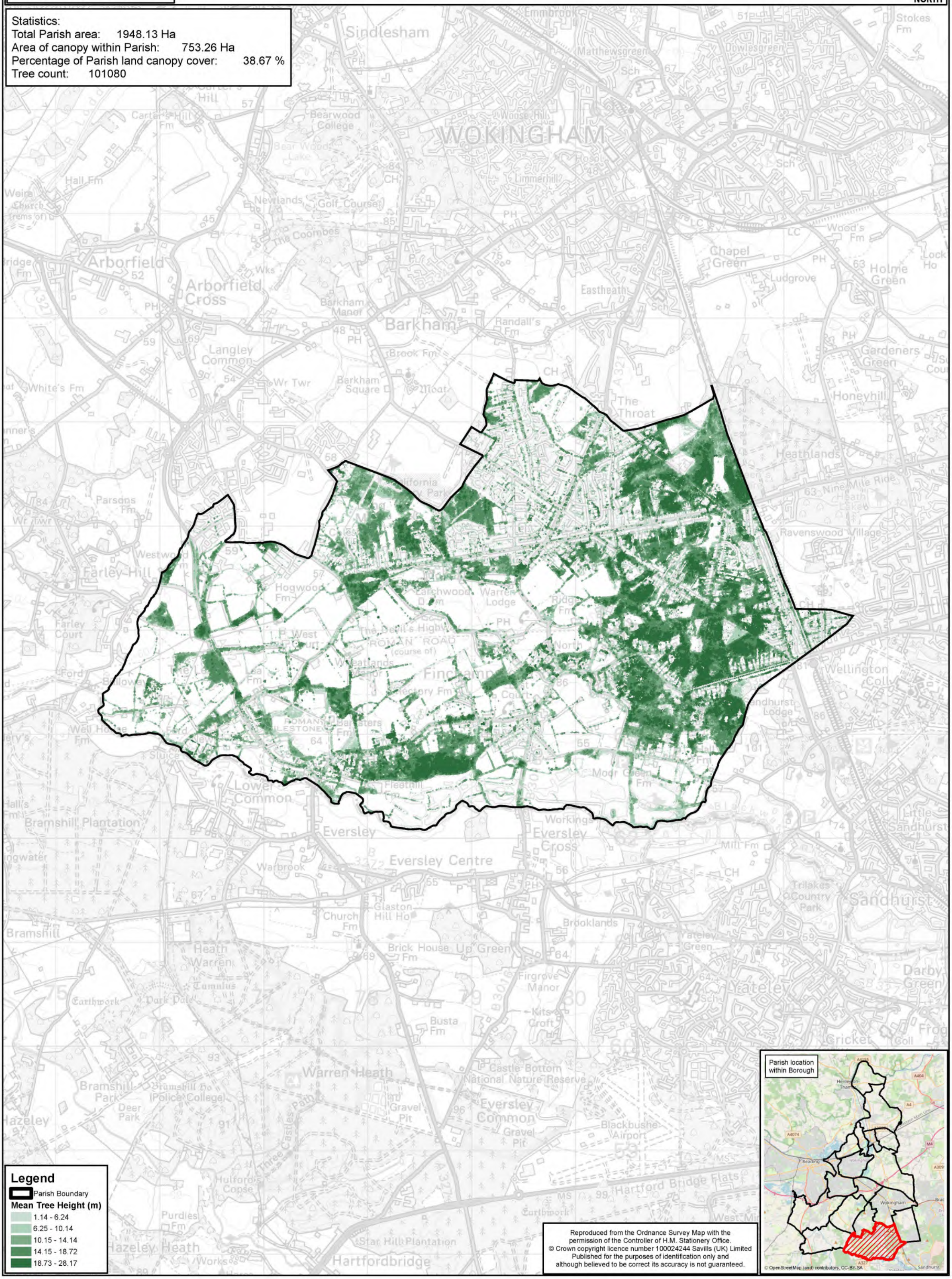
Parish Canopy Cover - Full Coverage

Finchampstead CP

0 0.15 0.3 0.6 Miles

NORTH

Statistics:
Total Parish area: 1948.13 Ha
Area of canopy within Parish: 753.26 Ha
Percentage of Parish land canopy cover: 38.67 %
Tree count: 101080



Legend

Parish Boundary

Mean Tree Height (m)

- 1.14 - 6.24
- 6.25 - 10.14
- 10.15 - 14.14
- 14.15 - 18.72
- 18.73 - 28.17

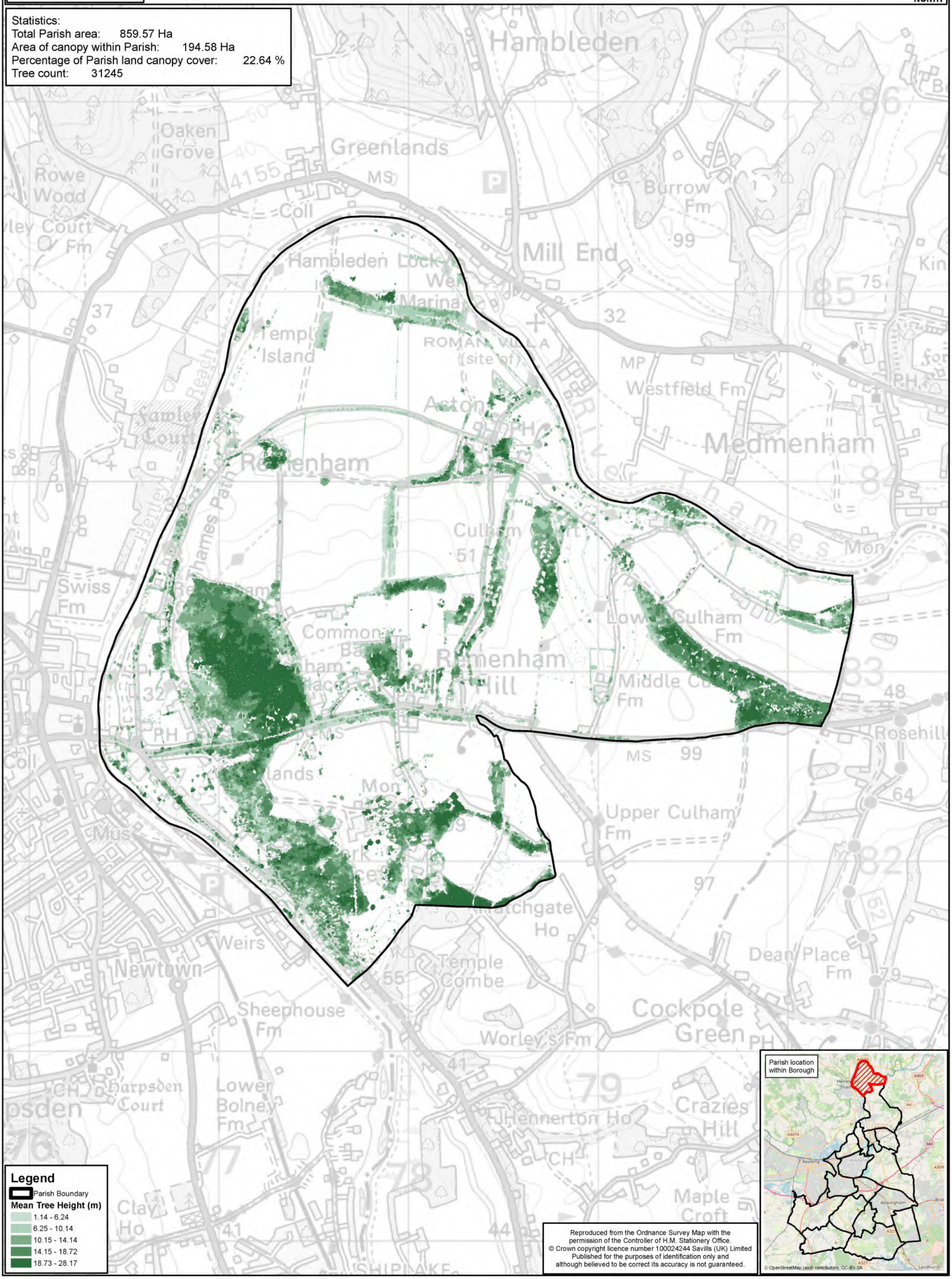
Parish Canopy Cover - Full Coverage

Remenham CP

0 0.075 0.15 0.3 Miles

NORTH

Statistics:
Total Parish area: 859.57 Ha
Area of canopy within Parish: 194.58 Ha
Percentage of Parish land canopy cover: 22.64 %
Tree count: 31245



Legend

- Parish Boundary
- **Mean Tree Height (m)**
  - 1.14 - 6.24
  - 6.25 - 10.14
  - 10.15 - 14.14
  - 14.15 - 18.72
  - 18.73 - 28.17

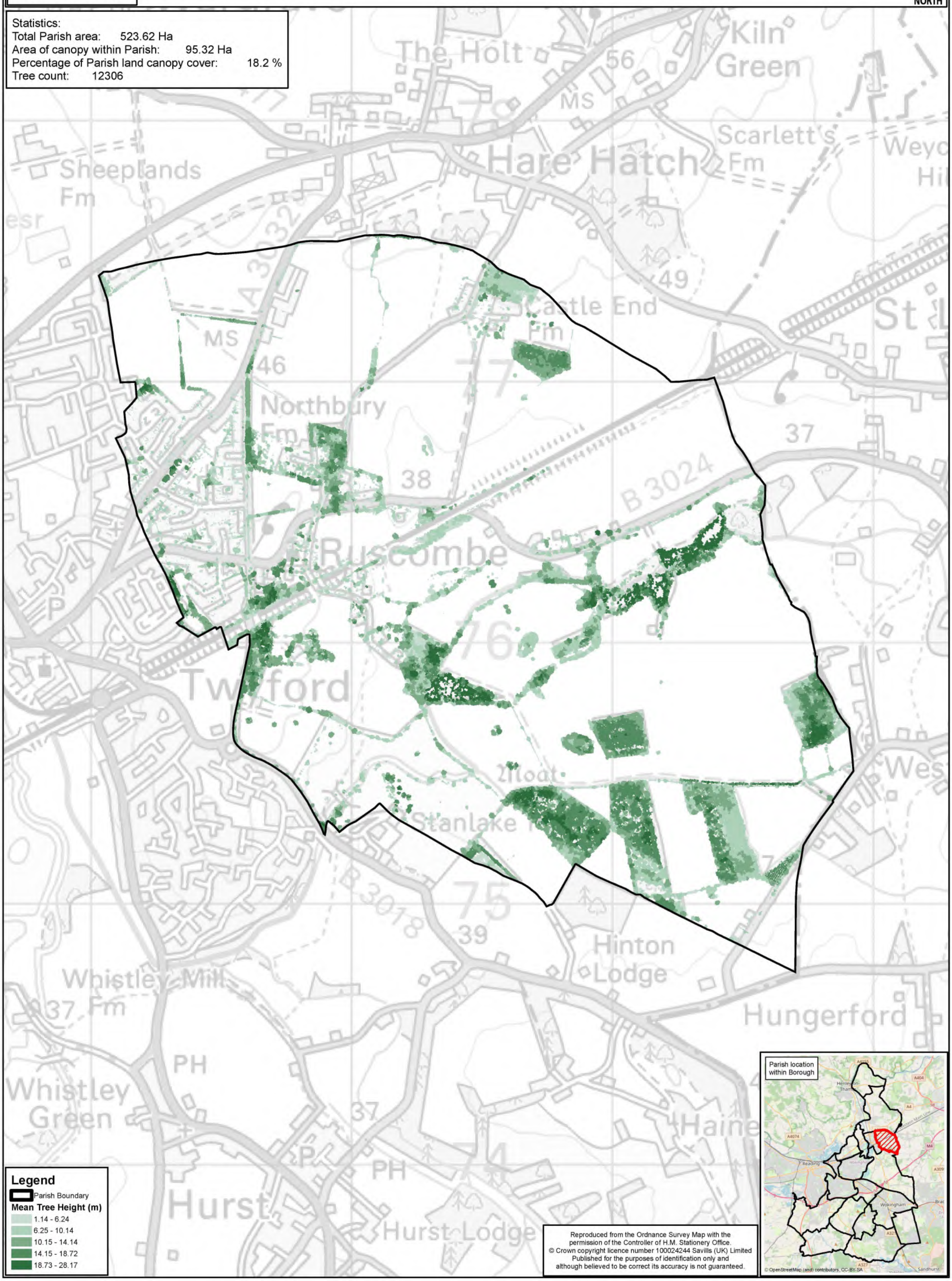
Parish Canopy Cover - Full Coverage

Ruscombe CP

0 0.05 0.1 0.2 Miles

NORTH

Statistics:
Total Parish area: 523.62 Ha
Area of canopy within Parish: 95.32 Ha
Percentage of Parish land canopy cover: 18.2 %
Tree count: 12306



Legend

Parish Boundary

Mean Tree Height (m)

- 1.14 - 6.24
- 6.25 - 10.14
- 10.15 - 14.14
- 14.15 - 18.72
- 18.73 - 28.17

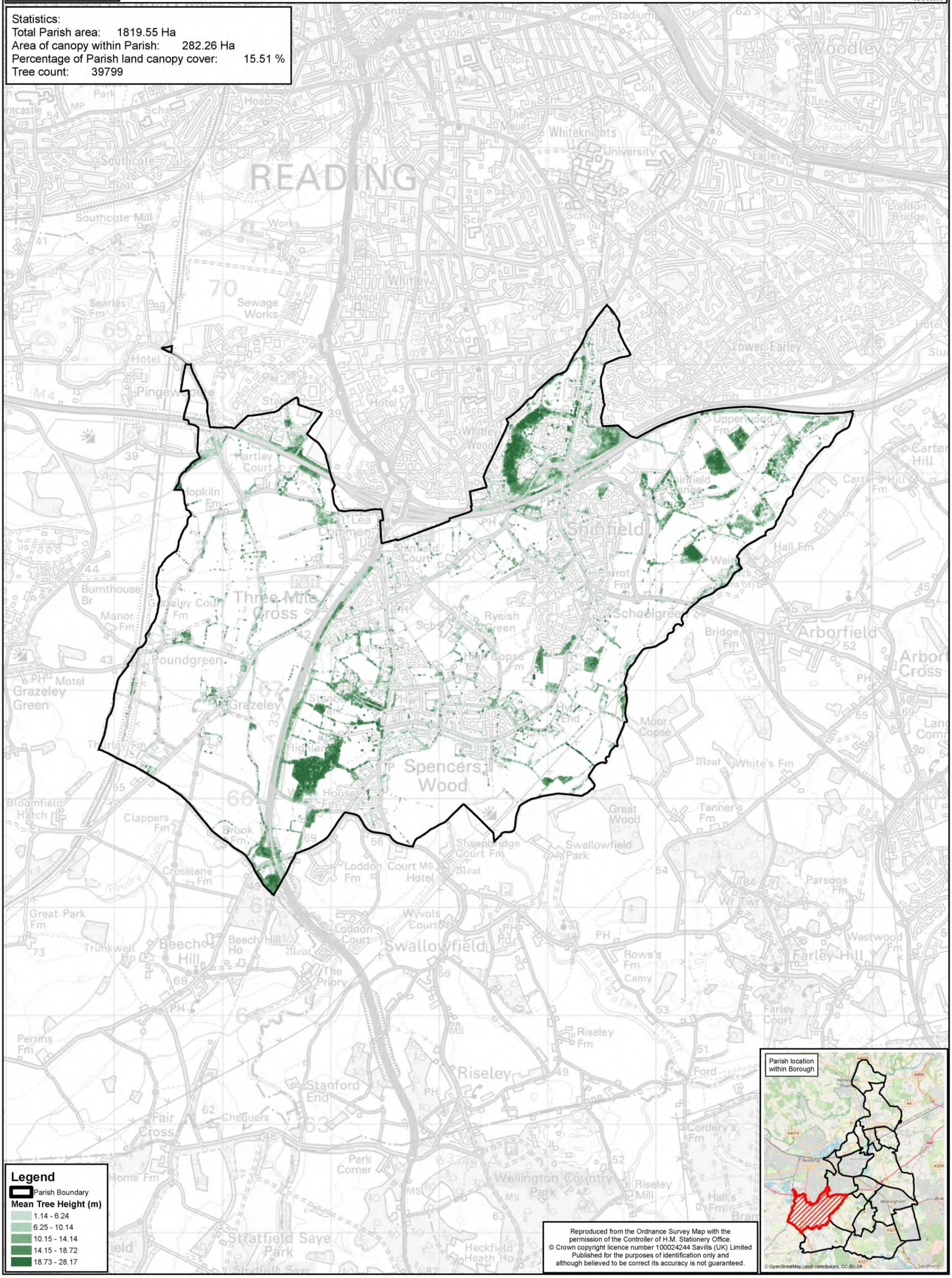
Parish Canopy Cover - Full Coverage

Shinfield CP

0 0.125 0.25 0.5 Miles

NORTH

Statistics:
Total Parish area: 1819.55 Ha
Area of canopy within Parish: 282.26 Ha
Percentage of Parish land canopy cover: 15.51 %
Tree count: 39799



Legend
Parish Boundary
Mean Tree Height (m)
1.14 - 6.24
6.25 - 10.14
10.15 - 14.14
14.15 - 18.72
18.73 - 28.17

Parish Canopy Cover - Full Coverage

Sonning CP

0 0.05 0.1 0.2 Miles

NORTH

Statistics:
Total Parish area: 475.67 Ha
Area of canopy within Parish: 109.88 Ha
Percentage of Parish land canopy cover: 23.1 %
Tree count: 15000

Legend

Parish Boundary

Mean Tree Height (m)

1.14 - 6.24
6.25 - 10.14
10.15 - 14.14
14.15 - 18.72
18.73 - 28.17

Parish location within Borough

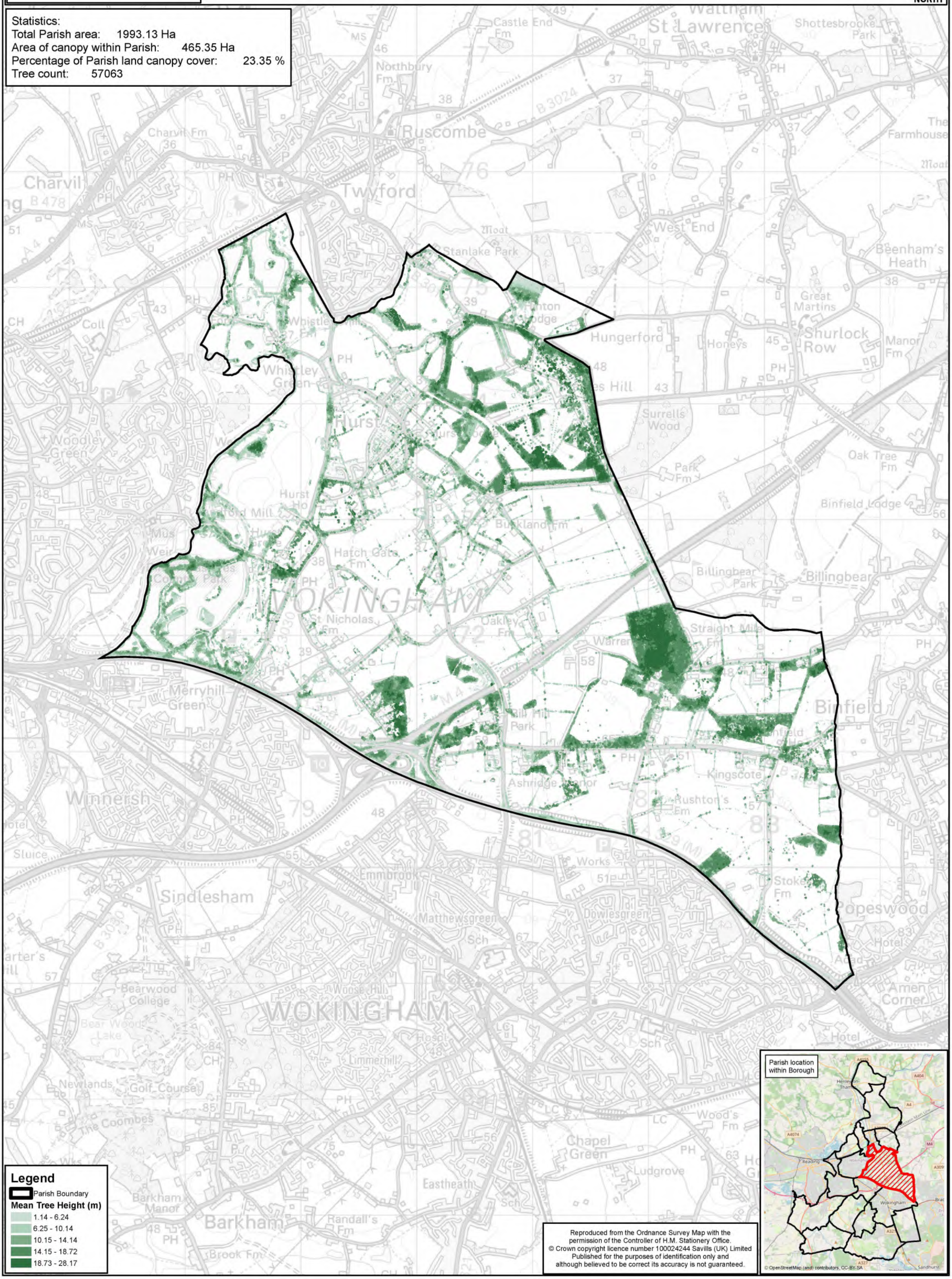
Parish Canopy Cover - Full Coverage

St. Nicholas, Hurst CP

0 0.125 0.25 0.5 Miles

NORTH

Statistics:
Total Parish area: 1993.13 Ha
Area of canopy within Parish: 465.35 Ha
Percentage of Parish land canopy cover: 23.35 %
Tree count: 57063



Legend

Parish Boundary

Mean Tree Height (m)

- 1.14 - 6.24
- 6.25 - 10.14
- 10.15 - 14.14
- 14.15 - 18.72
- 18.73 - 28.17

Parish Canopy Cover - Full Coverage

Swallowfield CP

0 0.125 0.25 0.5 Miles

NORTH

Statistics:
Total Parish area: 1424.29 Ha
Area of canopy within Parish: 344.32 Ha
Percentage of Parish land canopy cover: 24.17 %
Tree count: 46788

Legend
Parish Boundary
Mean Tree Height (m)
1.14 - 6.24
6.25 - 10.14
10.15 - 14.14
14.15 - 18.72
18.73 - 28.17

Parish location within Borough

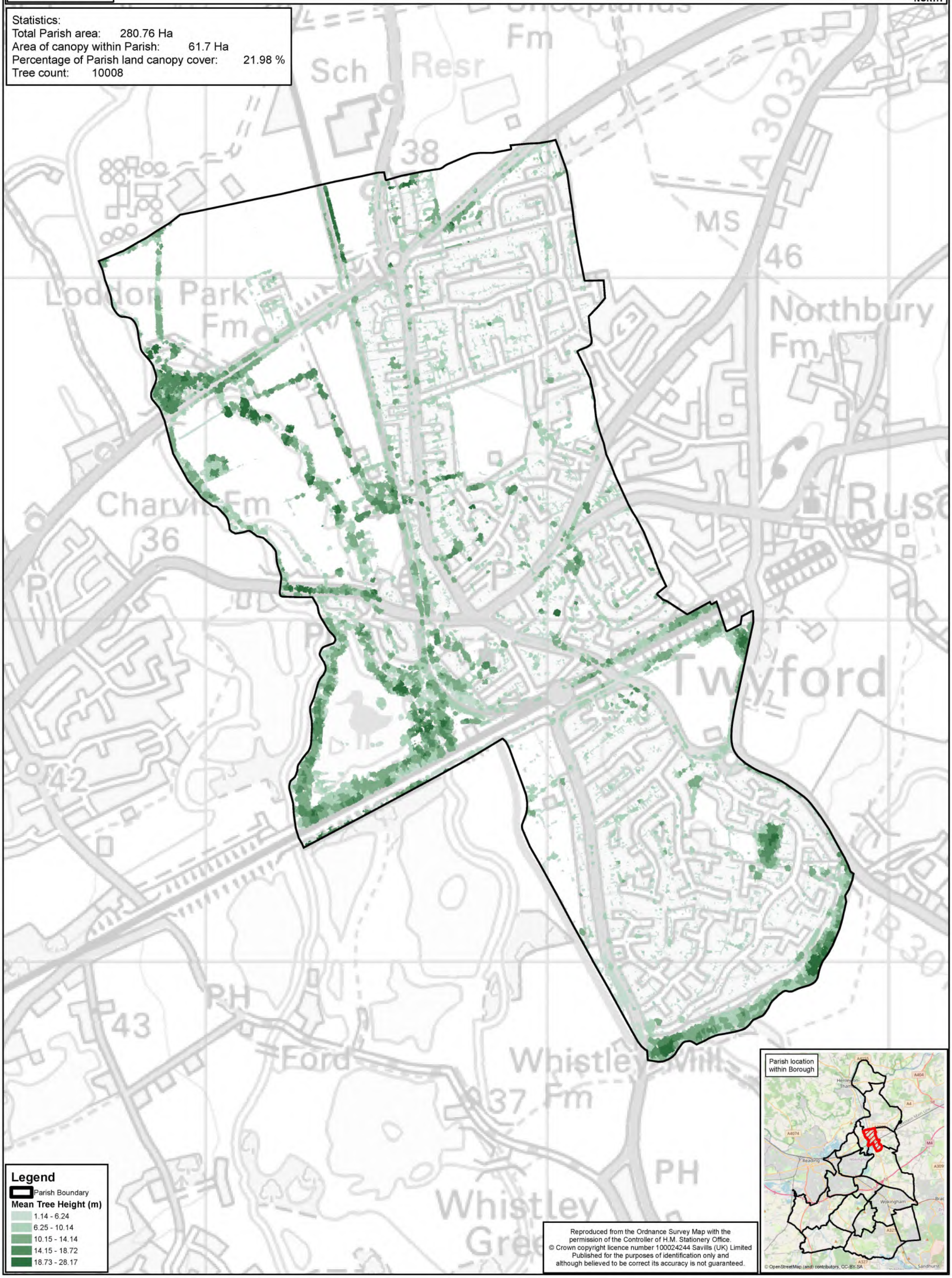
Parish Canopy Cover - Full Coverage

Twyford CP

0 0.045 0.09 0.18 Miles

NORTH

Statistics:
Total Parish area: 280.76 Ha
Area of canopy within Parish: 61.7 Ha
Percentage of Parish land canopy cover: 21.98 %
Tree count: 10008



Legend

Parish Boundary

Mean Tree Height (m)

1.14 - 6.24
6.25 - 10.14
10.15 - 14.14
14.15 - 18.72
18.73 - 28.17

Parish location within Borough

Parish Canopy Cover - Full Coverage

Wargrave CP

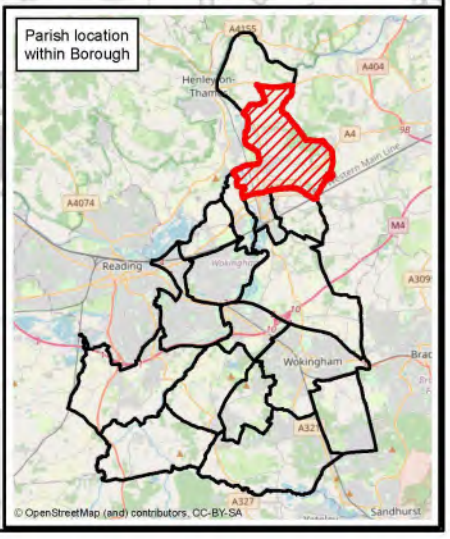
0 0.1 0.2 0.4 Miles

NORTH

Statistics:
Total Parish area: 1628.94 Ha
Area of canopy within Parish: 417.45 Ha
Percentage of Parish land canopy cover: 25.63 %
Tree count: 61114

Legend
Parish Boundary
Mean Tree Height (m)
1.14 - 6.24
6.25 - 10.14
10.15 - 14.14
14.15 - 18.72
18.73 - 28.17

Parish location within Borough



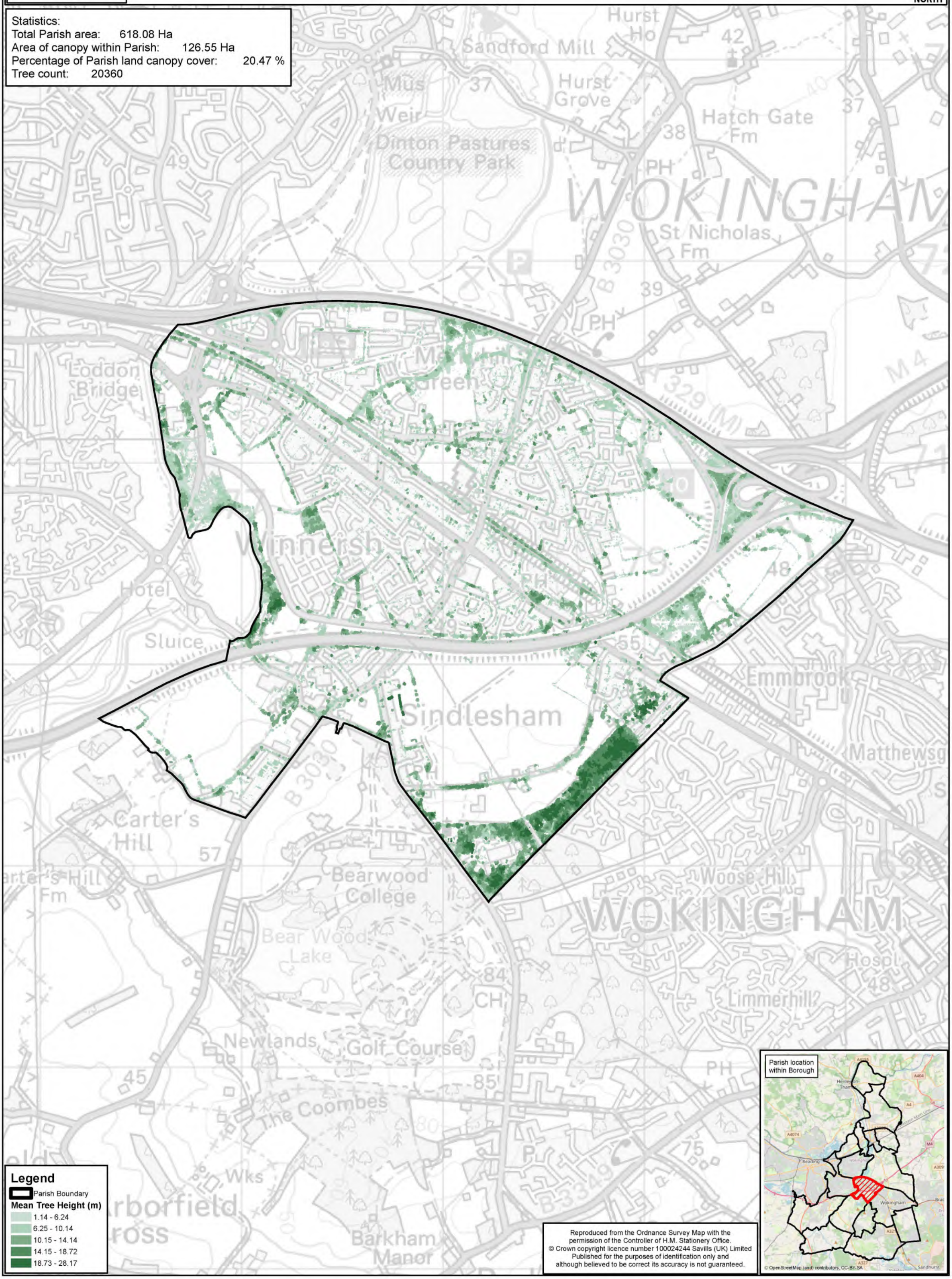
Parish Canopy Cover - Full Coverage

Winnersh CP

0 0.075 0.15 0.3 Miles

NORTH

Statistics:
Total Parish area: 618.08 Ha
Area of canopy within Parish: 126.55 Ha
Percentage of Parish land canopy cover: 20.47 %
Tree count: 20360



Parish Canopy Cover - Full Coverage

Wokingham CP

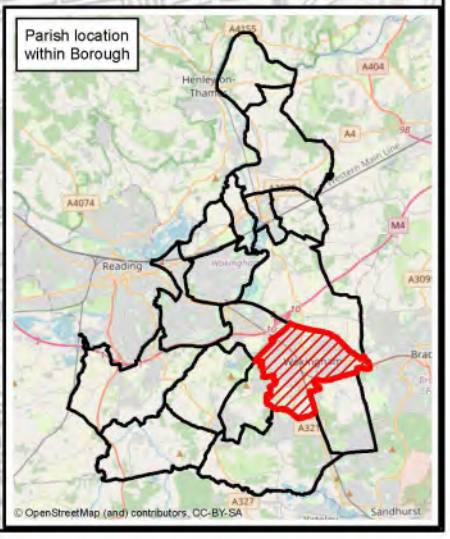
0 0.1 0.2 0.4 Miles

NORTH

Statistics:
Total Parish area: 1429.01 Ha
Area of canopy within Parish: 339.26 Ha
Percentage of Parish land canopy cover: 23.74 %
Tree count: 49206

Legend
Parish Boundary
Mean Tree Height (m)
1.14 - 6.24
6.25 - 10.14
10.15 - 14.14
14.15 - 18.72
18.73 - 28.17

Parish location within Borough



Parish Canopy Cover - Full Coverage

Wokingham Without CP

0 0.05 0.1 0.2 Miles

NORTH

Statistics:
Total Parish area: 930.5 Ha
Area of canopy within Parish: 337.33 Ha
Percentage of Parish land canopy cover: 36.25 %
Tree count: 44457

Legend

Parish Boundary

Mean Tree Height (m)

- 1.14 - 6.24
- 6.25 - 10.14
- 10.15 - 14.14
- 14.15 - 18.72
- 18.73 - 28.17

Parish location within Borough

Parish Canopy Cover - Full Coverage

Woodley CP

0 0.075 0.15 0.3 Miles

NORTH

Statistics:
Total Parish area: 833.77 Ha
Area of canopy within Parish: 191.1 Ha
Percentage of Parish land canopy cover: 22.92 %
Tree count: 30920

Legend
Parish Boundary
Mean Tree Height (m)
1.14 - 6.24
6.25 - 10.14
10.15 - 14.14
14.15 - 18.72
18.73 - 28.17

Parish location within Borough

Wokingham Borough Council TPO Process Flow Chart

1) TPO inquiry received, from staff member, Councillor, or member of the public; Go to 2. If the request is considered urgent, then request will automatically be included within TPO priority meeting process (see point 5) undertaken by emails and TEAMs.
2) Link to WBC guidance on requesting a TPO form will be emailed out, or posted, as required. Application to Include trees under a Tree Preservation Order.
3) Completed TPO Request form received by WBC Tree Officers.
4) Completed TPO Request form sent to monthly TPO prioritisation meeting.
5) TPO Request assessed and rated for priority at TPO Prioritisation meeting (attended by T&L team manager who has delegated authority to make TPOs, Snr Tree Officer and Tree Officer, as available). TPOs are assessed against Government Guidelines. Three possible outcomes:
    a. **Priority Red** are the TPOs that will be prioritised for service during the period ahead. TPO requests that are assessed as Priority Red will be made and served by Tree Officer at the earliest opportunity.
    b. **Priority Amber** are the TPOs that will be worked on during the next period if there is resource to do this.
    c. **Priority Green** are those that will not be prioritised.
    Those who have requested TPOs that have been allocated to Priority Green receive a response explaining why the TPO request has not been prioritised. They are advised that if they become aware of new and updated information, then they are at liberty to put in a new request which will be considered.

Where relevant, other Officers, e.g. planning officers, enforcement officers, WBC Landscape Architects may attend the TPO Prioritisation Meeting, or their opinion is sought either before or after the meeting, to input specialist and/or site-specific knowledge and information.

6) Where a TPO is to be served there will be two outcomes:
    a. Comments received? **Yes** - go to 7, **No** - go to 8.
    b. TPO challenged on point of law? **Yes** – go to 11, **No** - go to 12
7) Letter sent to those who have commented/objected telling them that their opinions will be considered in the light of Government guidance when the TPO is confirmed, if it is confirmed.
8) TPO considered in the light of comments or lack thereof. TPO to be confirmed? **Yes** – go to 9, **No** – go to 10
9) TPO confirmed as served or modified. Finish.
10) TPO rescinded. Finish.
11) TPO sent to Court. Court decides – Finish.
12) Letter to challenger confirming invalid challenge. Go to 11

Further details and guidance on the TPO process can be found on Wokingham.gov.uk.

Hedgerows for Screening and Wildlife in Wokingham

Hedges form an essential part of the structure of the landscape. They are important for biodiversity conservation in their own right but also because they link woodland habitats & form wildlife corridors. The physical structure, species mix & composition of hedges changes from region to region & even between the different landscape character areas in the Borough. This Guidance Note is a simple guide to planting hedges in Wokingham & will assist in the design & planting of new hedgerows in the Borough.

SPECIFICATION

Ground Preparation:	Ground to be thoroughly de-compacted by hand, if necessary, prior to planting.
Size of stock:	Transplants 45-60cm tall or whips 60-90cm tall as appropriate to the species selected. Hedgerow standard trees should be half standards under-planted with shade tolerant hedge species. Trees spaced at 6 to 15 m intervals as appropriate.
Form:	Bare root or pot grown as appropriate for each species.
Type:	Certified local provenance.
Density:	For most hedges double staggered row, generally 'notch planted', 0.33 metres apart at 0.33 metre centres (this works out at 6 plants per linear metre). Hedgerow standards should be 'pit planted' (where appropriate) at 6-15m centres.
Support and protection:	Protection (rabbits & deer) – individual Tubex tree shelters of appropriate size, staked & secured or stock fencing around new trees & rabbit proof wire at base.
Establishment:	For 2 years after planting, maintain an area of 1m2 weed-free around each new plant, either by hand (where replanting hedges & which will appropriately preserve remnant field-layer plants) or by another weed control regime appropriate to the circumstances.
Maintenance:	Any plants that die or become diseased within 5 years of planting must be replaced to the above specification. Watering of hedge to ensure establishment of all plants to be carried out as required.
Plant Specification:	All whips to be young trees without feathered growth, 0.6–1.2m high. All transplants to conform to BS 3936: Part 1:1992 and to be no less than 2 years old. All trees and shrubs to be delivered to site clearly labelled with botanical name. For specification of hedgerow standard trees see WBC advice note on 'Tree planting in Wokingham'. Holly to be pot-grown ensuring establishment.
Standard trees:	Where standard trees are required tree species should be left uncut to grow through the hedge, at least one every 6m, with existing standard trees incorporated into the new hedge wherever possible. Standard trees planted either side of gateways encourages the use of hedges as natural networks by birds, bats, dormice, etc.

CONTINUED OVERLEAF

CHOICE OF SPECIES FOR DIFFERENT HEDGES/HEDGEROWS

Countryside Hedges: Some of our hedges are ancient, dating from very early plantings of stock–proof boundaries, or were the thin belt of trees and shrubs left over when woodland was originally cleared to make fields. They tend to be very rich in species, mainly because of their antiquity. Simpler hedges, mainly of hawthorn & blackthorn, tend to be the more recent ones, planted as common land was enclosed within the last 200 years. Except on the most sandy soils the following species should be used:

Shrub / hedge plants

50% Hawthorn (*Crataegus monogyna*)
23% Blackthorn (*Prunus spinosa*)
5% Hazel (*Corylus avellana*)
5% Field Maple (*Acer campestre*)
5% Hornbeam (*Carpinus betula*)
5% Holly (*Ilex Aquifolium*) shade tolerant so good under hedgerow trees

with:

1% each of Dog rose (*Rosa canina*), Field rose (*Rosa arvensis*), wild service (*Sorbus torminalis*) guelder rose (*Viburnum opulus*), yew *(Taxus baccatta),* oak (*Q. robur*) and ash (*F excelsior*) transplants, (7% of total

Hedgerow standard trees

Oak (*Quercus robur*) half standards or larger (70% of total standards)
Ash (*Fraxinus excelsior*) half standards of larger (30% of total standards)

River Floodplains: Hedgerow mixtures in the floodplains of the Thames, Loddon and Blackwater rivers can be similar to those for the open countryside. However, in damper areas the species mix can be tweeked to include hedgerow standards of large species trees requiring damp conditions e.g.

Willows (Salix species such as the large trees *S. fragilis* and *S.alba* or the smaller, more shrubby *S.caprea* and *S.cinerea*) but not to be planted near buildings.

Black poplar (*Populus nigra var. betulifolia*) only confirmed local stock.
Alder (*Alnus glutinosa*)

Designed Formal Landscapes: Most such hedges are designed for formal landscapes and use a limited number of plants to form single species clipped, formal, hedgerows. Suitable species are as follows: beech (*Fagus sylvatica*), hornbeam (*Carpinus betulus*), yew (*Taxus baccata*), holly (*Ilex aquifolium*), box (*Buxus sempervirens*). Mixes of these species can be used to form 'tapestry hedge mixes' which are rich in texture with colours which change throughout the year but which need only minimum maintenance. A relatively low maintenance tapestry hedge, requiring only one or two cuts per year can be achieved by planting 33% each of yew, hornbeam and beech.

Choice of species: Some other species are favoured for their quick establishment & rapid growth. However, they are often poor in terms of their nature conservation benefits or look out of place in the landscape. An example of such a species is Leyland cypress (*Cupressocyparis leylandii)* which is often cited in formal High Hedges complaints. Its use is generally discouraged. On the other hand, Yew *(Taxus baccata),* makes an exceptional formal hedge, the finest of all green architecture. Yew is not as slow growing as is popularly believed & a hedge of 6 feet can be achieved in five or six seasons if the ground is well prepared. Where berries are required to encourage fruit eating birds, then both male and female plants must be planted.

CJH 25/10/2017

WOKINGHAM BOROUGH COUNCIL