England's Urban Forests

Using tree canopy cover data to secure the benefits of the urban forest

Urban Forestry and Woodland Advisory Committee Network

Supported by:

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England's community forests

Forest Research

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Trees make our towns and cities nicer, cleaner, healthier places to work and live – and with over 80 percent of us living in urban areas, it is vitally important we plant, grow and protect our green heritage. We have a manifesto commitment to plant one million new trees in our towns and cities and reaffirmed this in our 25 Year Environment Plan. The 25 Year Environment Plan set outs how we will fulfil our ambition to hand over our environment to the next generation in a better state than we inherited it. That's as true for people living and working in urban areas as it is for the countryside. Furthermore, we have manifesto commitments to plant 11m trees and also to introduce a duty on councils to consult the public before removing trees from our streets.

Green spaces are hugely valued by local communities, especially trees. That's why we have also committed to introduce new requirements to ensure councils properly consult the public if they are considering removing street trees. We will also soon be releasing a manual to help those in charge make the best possible choices when it comes to increasing the longevity of trees – including planting the right trees in the right places, of the right type.

I therefore welcome this leaflet, as the latest contribution of the Urban Forestry and Woodland Advisory Committee Network and its partners' ongoing work to support local decision makers in making the most of urban trees.

Urban trees can bring a wide range of environmental, social and economic benefits to the hearts of our towns and cities, and to everyone who lives or works near them. This leaflet offers practical advice on how evidence on tree canopy cover in towns can help secure the benefits of urban forestry, and is a step towards embedding natural capital into decision-making. Once established, a baseline can help monitor changes to the canopy, especially when dealing with tree health issues. It helps make the case for good biosecurity when procuring new trees for planting, and managing our urban trees to reduce the risk of pest and disease spread.

The guidance makes it clear that good decision making on tree planting, management and felling needs to be evidence based, agreed locally and set within the wider context of planning. It suggests how progress can be measured and, if necessary, how approaches can be adjusted in light of the evidence. This is very much in line with the approach we have advocated in our 25 Year Environment Plan.

I look forward to hearing how planners, developers, urban designers and local communities will use the tree canopy cover data as a basis for local discussions and decisions to plant, nurture and protect more urban trees now and for future generations. By realising their aspirations for more beautiful, resilient urban spaces, they will make our towns and cities even greater places to live.

What is tree canopy cover and why is it useful?

Tree canopy cover is "the layer of leaves, branches, and tree stems that cover the ground when viewed from above" (Treeconomics, 2017[1]). Its measurement can be used as a proxy for the benefits provided by the urban forest[2] by linking the area of canopy cover to the ecosystem services provided by trees.

The canopy cover of the urban forest is a key component of natural capital. Canopy cover is measured differently to green space as it is not an exclusive land use. Other activities take place and often thrive under the urban tree canopy. Its measurement does not include grassy parkland, playing fields and gardens.

The average tree canopy cover, measured across 283 towns and cities in England, is 16%. There is **significant variability in tree canopy cover across England's towns and cities**, ranging from 3% in Fleetwood, Lancashire to 45% in Farnham, Surrey. There is often also significant variability in tree canopy cover within towns.

The full results, produced by Forest Research[3], and summarised in Table 1, can be seen at www.urbantreecover.org

Table 1: Range of urban canopy cover across 283 towns in England in relation to population

% Canopy cover	Under 10%	10%-20%	20%-30%	Over 30%
Number of urban areas	41	178	57	8
Approximate total population living in these areas (millions)	2.3	23.7	6.8	0.3

A separate study of tree cover outside woodland areas[4] similarly assesses urban canopy cover to be 16.8%.

Who needs to use this tree canopy cover data?

Local authorities, planners, urban designers, developers and local community members all have an interest in creating good places to live. Trees and woodlands in our towns – the urban forest[5] – bring us many benefits[6 7 8]. This paper highlights how local authorities, planners, urban designers and developers can use tree canopy cover data from towns and cities across England[9] to maintain and enhance the benefits from the urban forest. Local communities can also use this data to influence the management of trees in their area.

This leaflet is produced by the Urban Forestry and Woodland Advisory Committee (FWAC) Network, advisers to the Forestry Commission on urban forestry. It is supported by the Woodland Trust, Trees for Cities, The Tree Council, The Trees and Design Action Group, The Community Forest Trust, England's Community Forests and Forest Research. The Network recommends that **a minimum standard for tree canopy cover is set for a local area, with evidence showing that 20% is a good aspiration**[10], depending on the current level.

Trees are essential for our mental and physical health. They can improve air quality[11], reduce surface water flooding, mitigate the urban heat island effect and calm traffic. They promote wellbeing by providing contact with nature. Their aesthetic and cultural values are well recognised by communities. They also support biodiversity and connect habitats together.

To sustain and enhance these benefits, it helps to know the scale and value of the urban forest. This tree canopy cover data is a starting point for setting management objectives and targets as part of a town or city's Tree and Woodland Strategy.

Not everyone has equal access to trees in urban areas. Poorer areas often have a fewer trees[12]. The relationship is not always clear cut though. Some locations with low levels of deprivation have canopy cover as low as 11%; while some locations with canopy cover close to 30% are highly deprived. However, only less-deprived areas have high (> 30%) canopy cover[13]. When canopy cover data is not available, the Index of Multiple Deprivation (IMD) can be a useful guide for prioritising tree planting, as it is available at a range of scales down to ward level. Discrepancies in access to urban woodland can be identified through the Woodland Trust's Space for People[14].

How can a minimum standard for canopy cover be set? This is best set locally. When developing and adopting a minimum standard, it is recommended that:

1) **Towns and cities should aspire to increase overall tree canopy cover from their current baseline.** If a town or city does not have a baseline, then this data[15] can be used as a starting point and captured as part of a Tree and Woodland Strategy. Once established, this baseline can help when monitoring changes to the canopy, especially when dealing with tree health issues[16]. It is important to set a realistic timescale for reaching this minimum standard.

2) 20% tree canopy cover can be a good aspiration for towns and cities, with 15% for coastal settlements[17] which generally have lower tree populations. To target resources where towns and cities on average exceed 20%, focus on wards which have a shortfall, as has occurred in Oxford[18] and High Wycombe[19].

3) Different land-use factors are considered as space available for trees will vary across the town. **Trees and woodlands** enhance the green infrastructure network with particular natural capital value[20] where towns and cities meet the countryside, connecting urban and rural natural habitats. Yet space for trees can also be found in the densest urban areas, where there is no capacity for larger green spaces. Consultation with local communities will help to engage relevant local stakeholders and get community buy-in to tree planting or management plans[21].

4) **Tree canopy cover data can be compared with the Index of Multiple Deprivation to assess how equitable the cover is across a town.** It can also be mapped in relation to household incomes, deprivation, air quality and public health. This can help identify opportunities to extend the tree cover where it adds particular natural capital value, as done for High Wycombe[22] and Plymouth[23].

5) **The tree canopy cover baseline, along with activities that increase and enhance such cover should be captured in a Tree and Woodland Strategy.** This can connect to wider landscape-scale projects as part of green infrastructure strategies (National Planning Policy Framework[24], National Planning Practice Guidance[25]). Guidance for London boroughs[26] can be adapted for local circumstances.

Image courtesy of City of Trees and photographer, Jill Jennings.

So, how can local authorities, planners, urban designers and community members use this tree canopy cover data?

1) **See how your town has done!**
   If your town is not on this list, consider running an i-Tree Canopy survey and let us know the results. Running i-Tree Canopy takes as little as one hour per area, after a little self-guided training. Details on how to complete your own survey are presented here.

2) **Start a conversation:** "Do you know what the canopy cover in our town is? How does it compare to other towns? How does it vary across the town? Where do you think we can do better? Does our town have a Tree and Woodland Strategy and could this data help us produce one or feed into a neighbourhood plan?" Consider bringing your neighbours and community together to discuss this with your local councillor or tree officer.

3) **Consider setting a local minimum standard:**
   This works best when agreed locally, in order to drive delivery and monitoring. Try and strike an appropriate balance between planting new trees and managing the existing canopy.

4) **Measure the trend:** After five years, check how your town is progressing. It is quick and easy to re-run the i-Tree Canopy approach.

5) **Focus future action and targeting:**
   See how your current urban forestry activity could be better focused, both across tree planting and in the management of the existing tree stock. This may require more than just a canopy cover target, perhaps a range of criteria and indicators[27] which could be included in a Tree and Woodland Strategy. Also be aware that tree health issues can lead to degradation of the canopy which reduces tree cover and necessitates changed management practice and adjusted planting strategies.

Endnotes:

1) urbantreecover.org/urban-forest-cover

2) Urban FWAC Network (2016),
   Our vision for a resilient urban forest

3) Doick et al (2017), England's Canopy Cover
   supported by Forestry Commission England,
   University of Southampton, Treeconomics
   and Wycombe District Council

4) Forestry Commission (2017),
   National Forest Inventory report –
   Tree cover outside woodland in Great Britain

5) Urban FWAC Network (2016),
   Introducing England's Urban Forest

6) See endnote 1

7) Davies et al (2017), Delivery of Ecosystem Services
   by Urban Forests

8) treesforcities.org/benefits-urban-trees

9) See endnote 1

10) See endnote 3

11) Ferranti et al (2018), First Steps in Air
    Quality for Built Environment Practitioners,
    University of Birmingham and TDAG

12) Doick, K and Handley, P (2017), Investigating
    relationships between England's Urban
    Canopy Cover, Air Pollution and Deprivation –
    Forest Research, unpublished paper

13) See endnote 12

14) The Woodland Trust (2017), Space for People

15) See endnote 1

16) Tree Council (2015), Chalara in non-woodland
    situations

17) See endnote 3

18) Treeconomics et al (2015), Oxford i-Tree Canopy
    Cover Assessment

19) Treeconomics et al (2016), Canopy Cover Assessment
    & Recommendations for Wycombe District

20) Natural Capital Committee (2015),
    State of Natural Capital – 3rd report

21) merseyforest.org.uk/our-work/mab-lane-
    community-woodland

22) See endnote 19

23) Treeconomics (2017),
    Plymouth Tree Canopy Assessment

24) gov.uk/guidance/national-planning-policy-
    framework/11-conserving-and-enhancing-the-
    natural-environment

25) gov.uk/guidance/natural-environment#para027

26) Forestry Commission and GLA (2013), Preparing
    Borough Tree and Woodland Strategies SPG

27) oa.isa-arbor.com/events/conference/
    proceedings/2013/VAN_WASSENAER_article_AUF_
    %20May_2011.pdf

To help you with these actions and to see how the urban forest could benefit your community, visit:

The Woodland Trust
www.woodlandtrust.org.uk

Trees and Design Action Group
www.tdag.org.uk

Trees for Cities
www.treesforcities.org

The Tree Council
www.treecouncil.org.uk

England's Community Forests
www.communityforest.org.uk

Community Forestry Trust
www.cf-trust.org

i-Tree
www.itreetools.org

Forest Research
www.forestry.gov.uk/fr/uforg