

# One Tree Per Child Bristol & Tree Bristol

## Tree Planting Report - 2020/2021

This report highlights Bristol City Council's tree planting programme for winter 2020 – 2021 through our One Tree Per Child and Tree Bristol programmes. Previous Annual Reports are available [here](#).

Bristol's One City Plan includes a target to double tree canopy in the city by 2046. Total projected tree canopy contribution across OTPC and Tree Bristol programmes for 2020/21 planting is **19.8 hectares**.

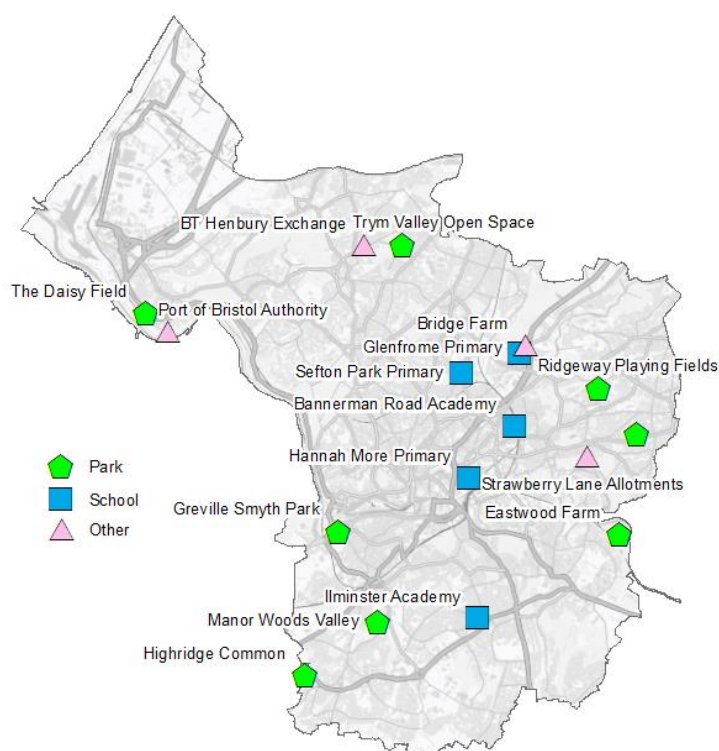
One Tree Per Child, Bristol (OTPC) project began in 2015 with the aim of planting one tree for every primary school aged child in the city equivalent to 36,000 trees. This target was exceeded by 2016 when over 39,500 trees were planted. The project has continued to plant 6,000 trees per year, one for every pupil starting school each year, with over 70,000 trees planted to date. OTPC aims to teach children about the value of trees through assemblies and practical sessions, and to give every child the chance to plant a tree and see it grow.

Tree Bristol began in 2005 as a programme to plant more trees in streets, parks and green space across Bristol. We receive funds from private and corporate sponsorship, planning gain and grants.

During winter 2020 into 2021, OTPC planted 9,073 trees in a mix of woodland, hedgerow, orchards and individual trees across 17 sites. During the same period, Tree Bristol planted 1,037 standard sized trees across the city including in streets and public green space.

### One Tree Per Child Bristol, 2020/21

This section of our annual report highlights the trees planted by OTPC including our volunteer and education programmes and project funding.



*OTPC project sites in the 2020-21 season*



*Our lead volunteers planting trees in Southmead*

### **Planting locations**

During 2020/21 OTPC planted at 17 sites across Bristol including 7 new woodlands, 5 forest school areas, 3 community orchards and over 450m of hedgerow.

OTPC 2020-21 tree planting in numbers:

- 3.1 hectares of projected canopy cover when mature**
- 2.24 hectares of new woodland**
- 9,073 trees planted**
- 7 new woodlands in public parks**
- 5 forest school areas in primary schools**
- Bristol's first 'Tiny Forest'**
- 6,550 woodland trees**
- 3 community orchards**
- 40 heritage fruit trees grafted for future planting**
- 4 school orchards**
- 76 fruit trees**
- 450m of hedgerow**
- 2,340 hedgerow trees**
- 39 larger specimen trees**



*New tree planting off the Portway*

## Range of tree planting



*Woodland planting with whips, guards and mulch mats at Rodney Road Playing Fields*



*Planting of riparian 'specimen' trees at Trym Valley Open Space*



*Planting fruit trees at the Daisy Field orchard*



*Hedgerow planting at PBA Football Club*

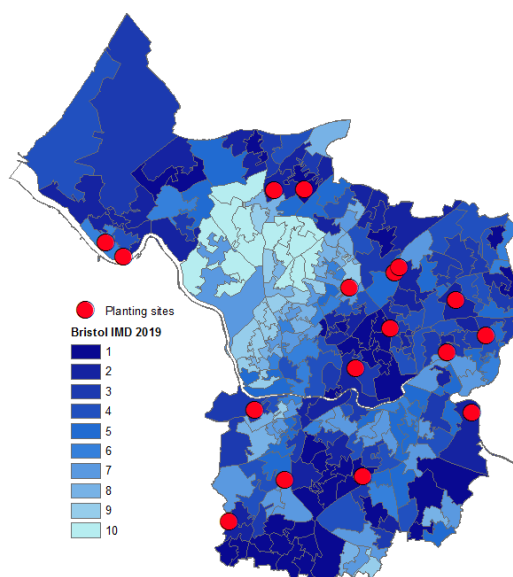
The majority of planting in 2020-21 were whips (small stock trees) planted at between 1.5 m and 3 m spacing depending on the site. This year the project switched to using all biodegradable planting materials with new guards and mulch mats being used. The mulch mats are made from recycled jute from old coffee sacks and will degrade in the field over the course of three years. These mats take significantly longer to lay out and peg down than the previous plastic mats, they also represent a significant increase in the price of tree planting.

Maintenance of these young trees will be easier and less time intensive as mats do not need to be removed allowing us to care for more trees over the course of each spring and summer. The mats will also provide nutrient to the trees as they rot down. We believe using more eco-friendly materials is the right approach when planting trees and will seek to further reduce our use of plastic in the future.

## Targeting planting to areas with the greatest need

We aim to plant trees where communities are more disadvantaged and where tree cover is lower. Looking at areas according to their Index of Multiple Deprivation (IMD) scores provides an insight into how well the planting is targeted towards disadvantaged communities.

The map below shows the spread of planting sites compared with the IMD range across the city. This map shows that the OTPC planting has been generally carried out in areas of the city with lower IMD scores (i.e those with higher levels of deprivation). The project will continue to focus on areas of deprivation where planting hasn't taken place previously.

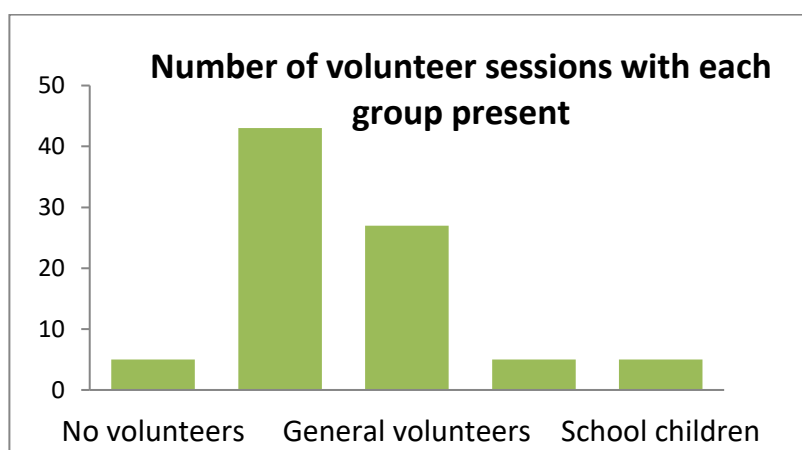


*Distribution of OTPC sites compared with the Index of Multiple Deprivation (IMD)*

### Volunteer programme

The 2020-21 season coincided with the global coronavirus pandemic. This encompassed three national lockdowns and an ever-changing set of legal restrictions on social contact and the size of volunteer groups. From April to July 2020 no public volunteering was allowed, so OTPC worked with a small group of council staff on furlough. The small number of volunteers and the drought in April and May meant that many trees were struggling, and it was difficult to care for them.

July to October 2020 were months with fewer restrictions meaning groups of 6 could volunteer. We managed this by dividing into two separate groups with a separate team leader on days with more people. Despite the small group sizes a large amount was achieved, with many sites being mulched, weeded and having their plastic mulch mats removed.



From November to March national restrictions meant that new volunteers were not allowed to attend. The only volunteers during these months were the OTPC lead volunteers. As this was tree planting season this provided quite a challenge.

A total of 62 volunteer days were held during the 2020-21 season, including 34 tree planting days and 28 tree maintenance days. Due to restrictions on group sizes attending for most of the year only 5 volunteer days were supported by corporate volunteers, this compares with 33 days in 2019-20. Covid-19 also severely limited the number of school children that could be supported by the project. Normally local school groups are invited to each planting day but in 2020-21 only the 5 planting days on school grounds had school children in attendance.

The vast majority of the maintenance and almost all of the planting this season was carried out by One Tree Per

Child's lead volunteers. We'd like to say thank you for the huge amount of effort by this small group of volunteers without whom this project could not happen.

OTPC would also like to thank the Bristol Tree Forum and the Forest of Avon Trust for their help with fundraising, planting and promoting the project.

We are grateful to the support from the following organisations:

*Bristol Energy, Bristol Tree Forum, BT, Earthwatch, Ecosia, Forest of Avon Trust, Gallagher, NHS Sustainable Forest, Network Rail, OVO Foundation, Sapling Spirits, Sustrans, TSB*

## Education programme

OTPC aims to visit at least half of primary schools across the city every year. There is a comprehensive, National Curriculum linked, educational package offered to schools alongside planting opportunities including assemblies, workshops and creating tree plans in schools and the surrounding areas.

School visits were severely curtailed over the course of 2020-21 due to the COVID-19 pandemic. Despite this, OTPC did plant in 6 schools in the city:

- Ilminster E-Act Academy, Knowle – hedgerow, forest school, orchard and specimen planting
- Glenfrome Primary School, Eastville – woodland and forest school planting
- Little Mead Primary School, Southmead – specimen planting
- Bannerman Road Primary School, Easton – woodland and hedgerow planting
- Hannah More Primary Academy, The Dings – hedgerow, forest school and specimen planting
- Sefton Park Primary School – Bishopston – woodland, hedgerow and specimen planting.

Over 90 children from Knowle Park Primary also joined us for specimen tree planting on The Square, Knowle where Trees for Cities funded the planting of 12 standard sized trees.

Work continued virtually with plans with schools and pupils for planting in 2021-22.

## Fundraising

One Tree Per Child is incredibly grateful for the financial support of the following organisations:

Sponsor / grant fund	Amount donated
Bristol Energy	£40,000
Sustrans	£1,565
Network Rail – Great West Programme	£5,000
<b>Total cash raised</b>	<b>£46,565</b>

2,222 trees were planted under Defra's Urban Tree Challenge Fund at a value of £2,555

In addition to the financial contributions, donations of trees and materials were received from Ecosia and the Centre for Sustainable Healthcare for the 200 streamside whips planted at Trym Valley Open Space. The Ovo Foundation and Earthwatch funded the planting of the 'Tiny Forest' on this site too. This small area of 600 whips was planted by OTPC volunteers and the classroom, fence and interpretation board installed by Bristol City Council's 'Fix It' team.

## Tree Bristol, 2020/21

Tree Bristol is Bristol City Council's street and park / green space tree planting scheme. Trees may be planted as a replacement for lost trees or in new locations. The charge for a replacement tree is [£295](#). The charge for a new tree is £765 – which includes a contribution towards maintenance. In 2020-21 Tree Bristol had four main sources of funding for planting standard, specimen trees across the city:

Funding Source	Number of trees planted	£ Value
Private Sponsorship	106	£31,270
Section 106 (from Planning	288	£220,320
Grant (DEFRA Urban Tree Challenge Fund) <sup>1</sup>	590	£247,051
Trees for Cities Fund	12	£3,540

BCC funding (Housing and Highway delivery)	13	£9,945
Replacements under TreeBristol T's and C's.	28	
<b>TOTAL</b>	<b>1,037</b>	<b>£291,806</b>

<sup>1</sup> The Defra Urban Tree Challenge Fund grant was paid at £418.73 / tree to include planting and establishment costs over three years.

Overall, 1,009 additional trees were planted (1,037 including replacements).

#### Distribution:

Most electoral wards had trees planted under Tree Bristol in 2020-21. Generally private sponsorship is more successful in the more affluent parts of Bristol, whereas funding through Section 106 / Community Infrastructure Levy is limited to within a mile of a development site. Funding via DEFRA's Urban Tree Challenge Fund stipulated, as a condition of grant, that the trees must be planted in groups or clusters of ten trees and that all planting should be done in area of low canopy cover and those areas with comparatively higher socio-economic deprivation indices. Funders at Trees for Cities also stipulated that their funding for ten standard trees had to be in areas with relatively higher deprivation indicators.

Electoral Ward	Private Sponsorship	Section 106 / CIL	DEFRA UTCF	Other Sources	Total
	<b>Number of trees planted</b>				
Ashley	4	20	0	1	25
Avon & LW	2	0	80	1	83
Bedminster	5	18	13	0	36
Bish & Ash Dn	6	0	0	1	7
Bishopsworth	3	0	0	0	3
Brislington East	1	0	0	0	1
Brislington West	1	4	0	0	5
Central	2	14	23	1	40
Clifton Down	0	5	0	0	5
Clifton	4	0	0	0	4
Cotham	0	0	0	1	1
Easton	0	11	0	0	11
Eastville	1	10	0	2	13
Filwood	2	11	10	1	24
Frome Vale	1	0	0	2	3
Hart & With	3	0	66	0	69
Hen & Brent	0	0	91	0	91
Heng & WP	3	31	42	0	76
Hillfields	1	0	47	2	50
Horfield	6	0	10	0	16
Hot & Harb	6	13	0	6	25
Knowle	5	0	0	15	20
Lawrence Hill	1	50	21	0	72
Lockleaze	1	28	94	1	124
Redland	8	15	0	2	25
Southmead	0	0	63	2	65
Southville	3	8	0	0	11
St George C	0	4	0	2	6
St George TH	0	7	0	0	7
St George W	4	4	0	3	11
Stockwood	0	23	20	0	43
Stoke Bishop	11	3	10	7	31
W-o-T & Henl	16	4	0	0	20
Windmill Hill	4	5	0	3	12
North Somerset (Ashton Court)	2	0	0	0	2
<b>TOTAL</b>	<b>106</b>	<b>288</b>	<b>590</b>	<b>53</b>	<b>1,037</b>

#### Tree species:

Tree species were selected under the 'Right tree; Right place; Right Reason' principles examining each location, size of the plot, proximity of houses and other amenities and existing species in the area. With the 590 trees planted under the Urban Tree Challenge Fund project '[Bristol Greenstreet's](#)' local residents and businesses were invited, through consultation, to contribute to species selection by choosing from a modelled image option around tree shape – either spherical crown, upright & slender or pyramidal.

## **Tree Canopy Contribution (all tree planting)**

Bristol's '[One City Plan](#)' includes the target to double Bristol's tree canopy by 2046.

The total land area of Bristol is approximately 11,000 hectares. A 2018 i-Tree Eco survey calculated Bristol's tree canopy at 12%, or approximately 1,300 ha (although a subsequent i-Tree Canopy method has calculated Bristol's tree canopy at around 18%: work is ongoing to agree a baseline methodology).

The tree canopy contribution data included in this report is a projection based on the assumed size of trees when mature – see method below.

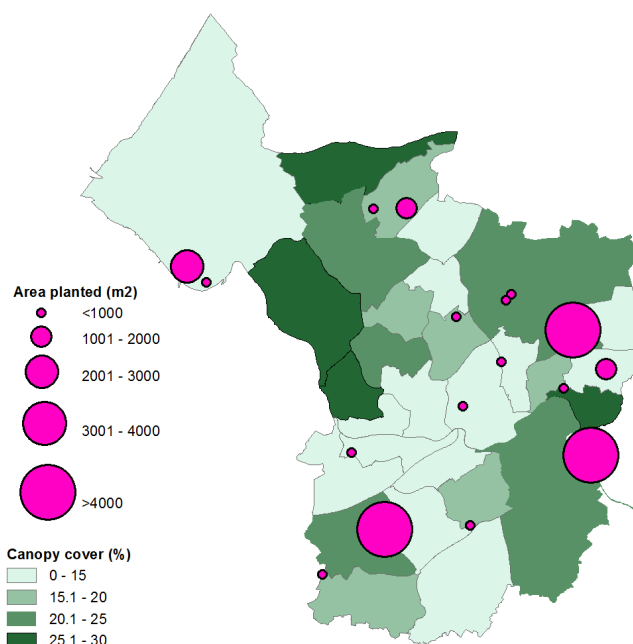
The projected 2020/21 canopy contribution across both OTPC and Tree Bristol programmes is: **19.8 ha**.

### **One Tree Per Child**

One Tree Per Child contributed **3.1 ha** of projected canopy from 6,546 trees planted during 2020-21 (2.3 ha woodland and 0.8 ha specimen planting).

The map below shows each ward in the city according to its percentage canopy cover, as calculated by the i-Tree Canopy survey conducted by [Bristol Tree Forum](#) in 2018 using satellite imagery.

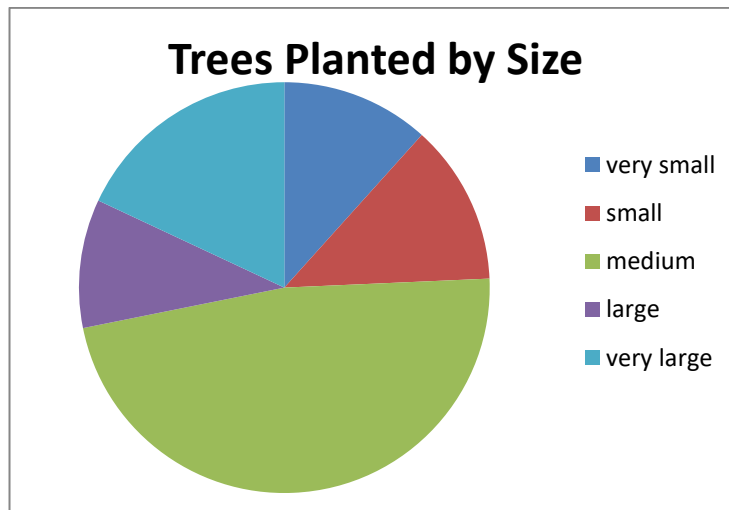
Many OTPC tree planting schemes were in areas of low canopy cover.



### **Tree Bristol**

Tree Bristol contributed **16.7 ha** of projected tree canopy from 1,037 trees planted.

As with OTPC, trees planted have been categorised by size to project their eventual canopy contribution: 121 were 'very small'; 131 'small'; 493 'medium'; 105 'large' and 187 'very large'.



### Tree Canopy Projection Method

Tree canopy has been defined as the area occupied by a trees crown taking a 'birds- eye' view.

Trees planted across OTPC and Tree Bristol fall into three main categories: woodland, hedgerow and individual 'specimen' trees.

For woodland and hedgerow it is assumed that their overall canopy will be the same size as the boundary of the area planted. For example, if 2,500 trees are planted at 2 x 2 metre spacing, the total area is 1 hectare.

When planting individual trees we need a different approach to estimate 'canopy contribution,' as each tree has the potential to spread and grow. For such trees, canopy can be estimated by assuming their crown diameter when mature. As data to project tree canopy cover is limited, an estimated canopy diameter for a range of tree species was taken using information from the Royal Horticultural Society and the Missouri Botanical Garden. The figures for canopy diameter at maturity are derived from data for the potential spread of each species. The age at which the tree will reach this size differs by species, but generally ranges from 50 to 100 years.

Each species was categorised from 'very small' to 'very large', and the area was calculated using the midpoint of the canopy diameter in each range. The resulting area (see table below) was multiplied by the number of specimen trees in that category to calculate their projected canopy contribution.

*Classification of tree species according to their canopy diameter at maturity.*

Tree Size	Crown Diameter	Tree Canopy Area (m <sup>2</sup> )
Very small	<5m	9.6
Small	≥5<10m	44.2
Medium	≥10<15m	122.7
Large	≥15<20m	240.5
Very Large	≥20m	397.6

### **Comment**

This analysis demonstrates the stark difference between planting woodlands and hedgerows compared with planting individual trees if the goal is to maximise canopy cover. Although the numbers of trees in a hedge or wood may be high, the overall canopy area is limited to the planting area. For example, the large hedgerow planted at Port of Bristol Authority contained 850 trees but the canopy contribution is just 444m<sup>2</sup>, slightly more than the potential canopy cover of one very large specimen tree.

Given that the canopy projection for specimen trees represents potential size in ideal conditions and does not factor in the failure of any of these trees it is likely to be an over estimate.