Bushy Park Tree Care Programme Report (2023-2025)

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1. Introduction

Dublin City Council (DCC) Parks, Biodiversity and Landscape Services are in charge of the maintenance and care of Dublin City urban forests, street trees and park trees included. Every year, over 4000 trees are assessed and recorded on DCC Tree Management application.

DCC Parks, Biodiversity and Landscape Services carried out first systematic inventory and inspection of the woodland in Bushy Park at the end of October 2021. This inventory and risk assessment was undertaken to determine the risk rating of existing trees, in accordance with guidance and principles defined by the International Society of Arboriculture 'Tree Risk Management Best Practices' and National Tree Safety Group 'Common Sense Risk Management of Trees'. In line with these systems, the assessment focused on the main targeted areas: woodland paths, children's playground, and areas used by educational groups. This inventory and assessment is the first step towards writing a Woodland Management Plan for Bushy Park.

2. Tree Survey and Programmed Works

The arborist gave the following resume of their findings (the full report will be available on DCC website).

'*The woodlands at Bushy Park contain a diverse mix of mature trees that were likely planted in the early 19th century around The Big House. These trees are now at the peak of maturity and therefore at the peak of their ability to deliver a vast range of social, economic, and environmental benefits to the local environment and community. The survey found that many trees will require work such as crown cleaning or crown reductions to remove hazards or reduce the likelihood of failure and those occasional dead or dying trees will require removal. The mature Oak population in Bushy Park is in poor condition with many trees displaying severe physiological decline, while the coniferous tree population is in reasonably fair condition'*.

Following this report and in relation to the poor condition of the oak trees, the Horticulture & Plant Health Division of the Department of Agriculture, Food, and the Marine conducted a plant health inspection of the oak trees in Bushy Park. Inspectors found bleedings and cankers on the trunks towards ground level that could be considered disease symptom (see pictures below).

'Bleeding' on oak tree trunk

Dead Oak Tree

'Bleeding' on oak tree trunk

Inspectors took samples for laboratory analysis to determine the presence or absence of *Phytophthora Ramorum* and *Brenneria goodwinii*. *Phytophthora ramorum* is a fungus-like pathogen that poses a significant threat to forests of the island of Ireland. *Brenneria goodwinii* is another plant pathogen associated with Acute Oak Decline. *Phytophthora kernoviae* is a water mould organism, which causes disease in a wide range of tree species, including forest and woodland species and notably oak trees. Fortunately, the analysis of all samples submitted for *Phytophthora ramorum, Phytophthora kernoviae* and *Brenneria goodwinii* were negative.

Overall, there is 2,446 young to veteran trees growing in 10 hectares of woodland in Bushy Park (newly planted and small/very young trees have not been included in this figure). During the woodland assessment, the arborist identified and recorded 241 trees that will require works within 3 year timeframe.

The following table shows the programmed tree care work that will be carried out in several phases up to 2025. The first phase is scheduled to commence in March 2023, subject to contractor's availability.

Table I: Programmed Works - Description and Quantity

Work Description	Quantity
Reduce Crown and Crown Cleaning	66
Crown cleaning (Deadwood and hangers)	53
Monolith	48
Tree Removal	36
Remove Epicormic Growth	15
Reduce Crown and Crown Cleaning. Remove Ivy.	7
Crown cleaning (Deadwood and hangers). Remove Ivy.	5
Crown cleaning (Deadwood and hangers). Remove Epicormic Growth	3
Remove Limb	2
Crown cleaning (Deadwood and hangers). Prune specific limb: Heavy limbs in lower crown	1
Crown cleaning (Deadwood and hangers). Remove epicormic and ivy,	1
Lift Crown 200 cm	1
Reduce Crown and Crown Cleaning. Remove ivy to ensure not masking major faults	1
Reduce Crown and Crown Cleaning. Prune Dead/dying limb over path	1
Remove hangers	1

3. Tree Felling and Monolithing

The 2023-2025 Tree Care Programme will involve the removal of 36 trees (1.5% of the woodland tree population) and the monolithing of 48 trees (2% of the woodland tree population). This work concerns 39 dead trees, 5 existing monoliths that needed to be further reduced, and 40 trees in poor condition.

The following shows the quantity of trees to be felled or monolithed according to species.

Table II: Tree removal/Monolith according to species

Common Name	Scientific name	Quantity
Ash tree	*Fraxinus excelsior*	12
Beech tree	*Fagus sylvatica*	13
Common Alder tree	*Alnus glutinosa*	2
Dead tree (un-identified species)	Dead tree (un-identified species)	1
Horsechestnut tree	*Aesculus hippocastanum*	6
Hybrid Larch	*Larix eurolepsis*	5
Lime tree	*Tilia x europaea*	1
Oak Tree	*Quercus robur*	19
Scots Pine	*Pinus sylvestris*	2
Sycamore tree	*Acer pseudoplatanus*	13
Western Red Cedar	*Thuja plicata*	2
Whych Elm tree	*Ulmus glabra*	4
Willow Tree	*Salix fragilis*	4

A monolithic tree is achieved by removing the entire crown and reducing it to a single stable main stem. As the monolithic tree slowly decays, this provide a habitat of great conservational value, supporting a wide range of species that are dependent upon a sufficient supply of decaying wood and cavities. A periodic inspection will be required, since the decaying stem may itself become hazardous over time. Eventually the monolithic tree will have to be felled.

Monolithic trees are widely accepted as being best industry practice as an alternative to felling, when the conditions are right.

4. Tree Care Programme Phase I

The first phase of the Tree Care Programme is scheduled to start in March 2023 and will involve work on 60 trees total.

Table III: Phase I - Description and Quantity.

Works Description	Quantity
Crown cleaning(Deadwood and hangers)	14
Crown cleaning (Deadwood and hangers). Remove Epicormic Growth and Ivy.	4
Monolith.	14
Pollard	1
Reduce Crown. Crown cleaning (Deadwood and hangers). Remove Ivy.	13
Remove Epicormic Growth	2
Remove Limb	1
Tree Removal and stump grinding	11

Tree work will also include the removal of Ivy growing on trees. While Ivy is important for wildlife and not dangerous for trees, it masks defects and decay fungi. Therefore, in order to carry out full tree assessment it would be essential to remove Ivy.

Due to the known presence of bat roosts in Bushy Park and following a consultation with National Parks and Wildlife Service, DCC Parks appointed an ecologist to carry out preliminary ground level bat roost assessment on 45 trees. These 45 trees have recommended tree works (crown reduction, monolith and tree felling) which could affect bat population negatively in this first phase of the programme.

While no evidence of bats were found, several features suitable for bat roosts were identified and 13 trees had moderate suitability for bat roosts. The first phase of work does not include work on these 13 trees until in depth assessment by a climbing tree surgeon is carried out. The ecologist did not find any tree with high suitability.

Work on trees nearby the known bat roosts are currently on pause until a licence is obtained from National Parks and Wildlife Service.

Unfortunately, due to the dangerous nature of the trees, the first phase of the Tree Care Programme must be carried during the early period of the bird-nesting season. Bushy Park, not being in uncultivated land, is not included in the section 40 of the Wildlife Act 1976 (as amended by Section 46 of the Wildlife Act 2000). However, no works will be carried out on trees with nests.

Recent surveys in connection with this Tree Care Programme revealed the presence of 31 heron nests in the woodland. No work will be carried out on these trees. A methodology has been agreed with the tree surgeon contracted to do the work, which includes mitigation measures to reduce potential disturbance to nests that are near the proposed works.

Please note that;

- It will be necessary to close the playground during work for number of days over the course of the project. A notice will be erected on the gate of the playground a few days in advance;
- There will be temporary path closures to facilitate the work. Pedestrian traffic management measures will be in place.

Please see Appendix 1 for pictures of some of the trees to be removed/monolith.

Please see Appendix 2 for detailed Tree Works List.

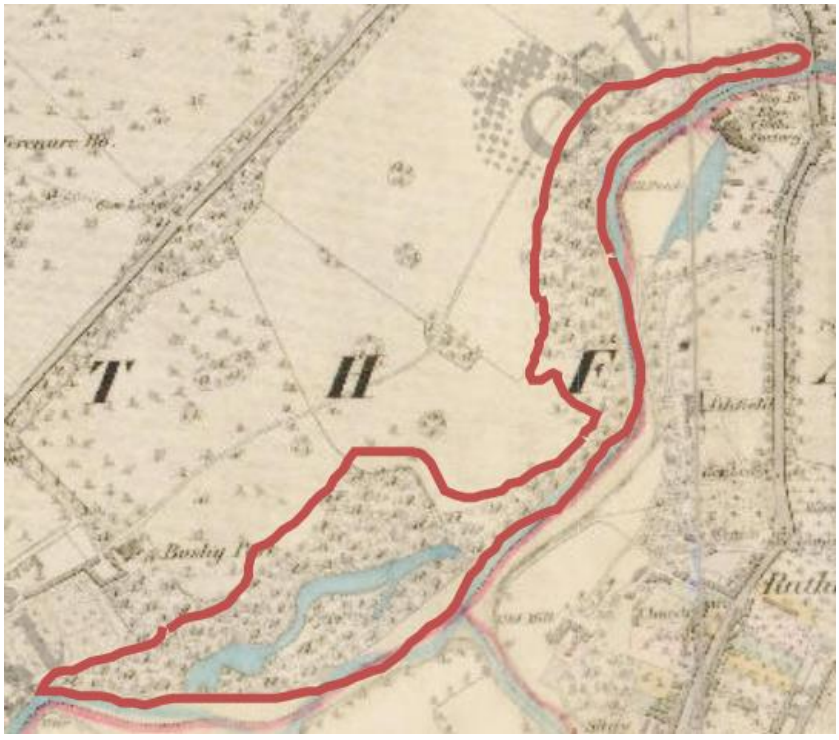
5. Replanting

While the future Woodland Management Plan for Bushy Park will give more details on tree species selection, the present report outlines some principles that will underpin the planting strategy which will be included in the future Woodland Management Plan.

The inventory allowed for identification of three woodlands in Bushy Park (Map 1).

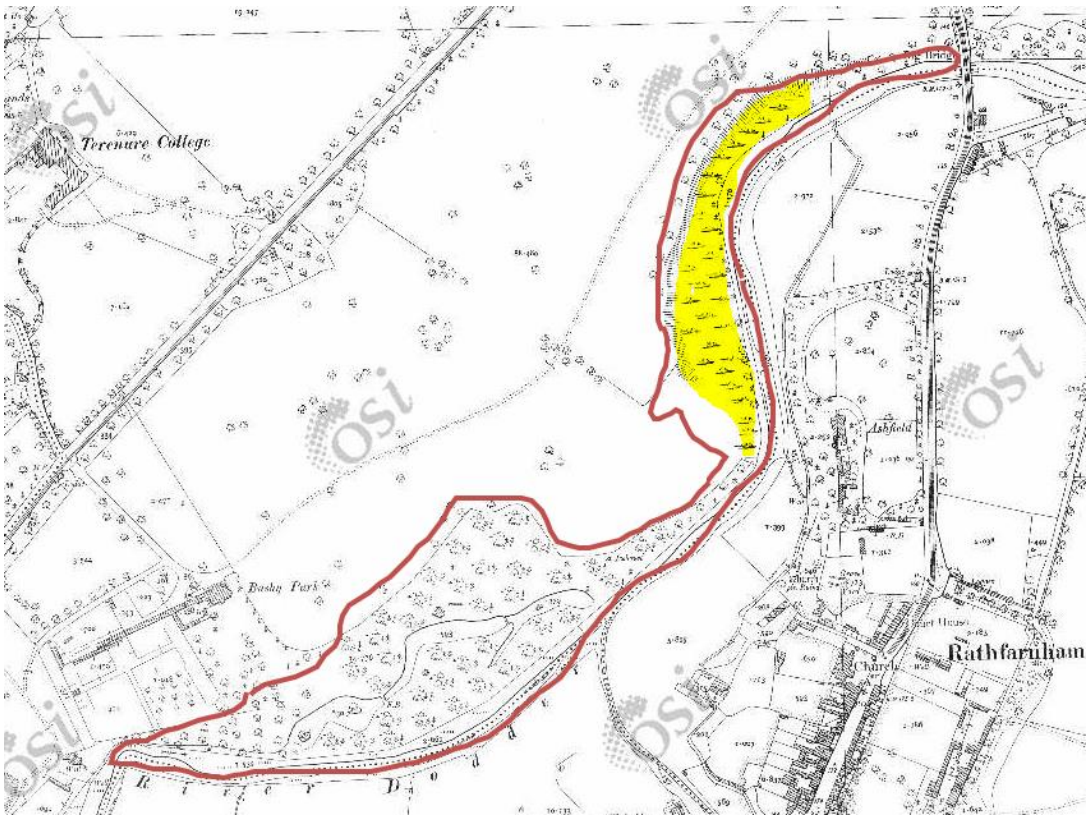
Map 1: Showing the boundaries (in red) of the Bushy Park woodland today.

- The first woodland is the remnant of a large ornamental woodland planted in the first part of the 19th century and associated with the Big House. This woodland is densely forested and centred on a series of ponds or serpentine lake. The tree population is mainly typical of 19th century demesne planting (Map 2).



Map 2: First Ordnance Survey (1829-41) showing the extent of the woodland in the first part of the 19th century. The red line is the woodland today and show that the extent is broadly similar.

- The second woodland, planted more recently since the land acquisition by Dublin City Council which comprise a diverse mix of species and ages of trees including mature Oak, Sycamore, Ash, Beech, and younger trees such as Lime, Elm, Birch, Norway maple and Alder. This second woodland was planted at the location of late 19th century quarry which removed a part of the early 19th century ornamental woodland. This woodland is organised around the 1960s pond (Map 3).



Map 3: Second Ordnance Survey (1897-1913) showing in yellow the extent of the woodland removed in the late 19th century to create a quarry.

- The third woodland is separated from the demesne by the attractive 19th century stone wall and is growing in the riparian zone along the Dodder River.

Therefore, it is proposed to fit our Tree Planting Programme according to these findings and to re-enforce the identity offering different woodland experience to park users while increasing the woodland resilience to future climatic changes and diseases.

- Woodland 1: tree planting as per 19th century demesne planting
- Woodland 2: tree planting with an emphasis on native tree species
- Woodland 3: tree planting adapted to riparian areas

The first step of replanting will be carried out during Tree Week 2023. The tree planting will consist of 5 standard Beech trees, 5 standard Scot pines, 50 native oaks whips and 10 horsechesnut whips. It is hoped that local schools will participate in the planting.

See planting location marked on map below.

Phased replanting in the woodland will be carried out mainly after inspection following on tree works in 2024, as it is important to give optimal growth conditions (space and access to light) to the trees in order to avoid large amount of tree deaths few years after planting.

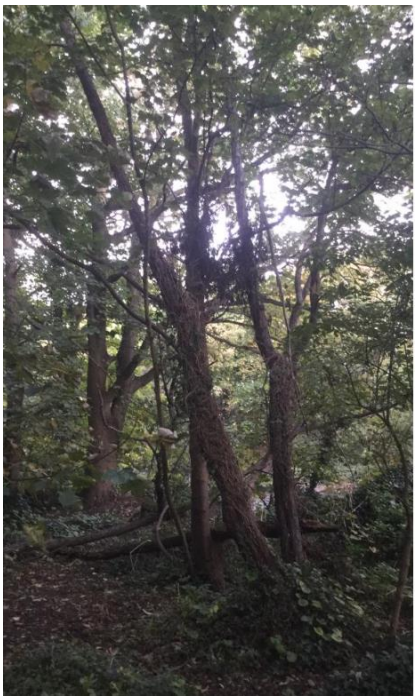
Appendix I

Tree 05LG: *Thuja plicata*. Removal.  Single stem, historic root plate failure with some correction but still excessive lean, basal/stem decay/cavity/hollow, previous crown failure.	Tree 05LL: *Thuja plicata*. Removal.  Single stem, asymmetric crown, basal/stem decay/cavity/hollow with signs of cubical brown rot.
Tree 05NX: *Fagus sylvatica.* Monolith.  Dead tree located near informal footpaths, fungus *kretzchmaria* present at base, fungus *Ganoderma australe* present on stem, porcelain fungus present on stem suggesting all of tree is dead.	Tree 05PP: *Whych Elm.* Removal.  Dangerous decay fungus *kretzchmaria deusta* at base, tree heavily in decline.

Tree 05QQ: *Quercus robur.* Removal.

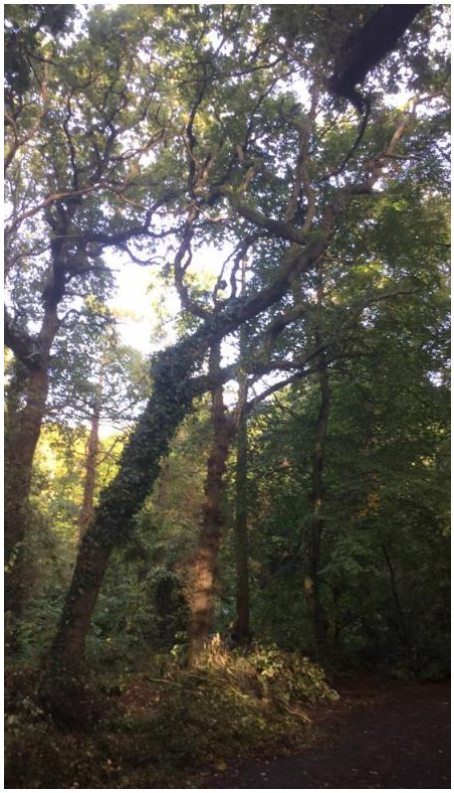
Single dead stem by path.

Tree 05R5: *Alnus glutinosa*. Removal.



Two stems, third has failed, cavity/decay/hollow stems with cracks.

Tree 05V0: *Quercus robur*. Removal.



Single dead tree.

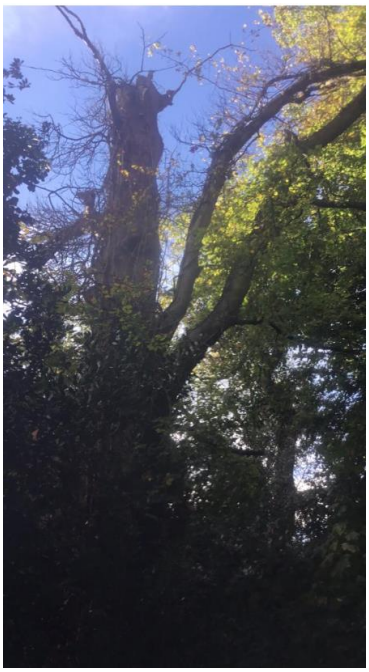
Tree 05V1: *Larix*. Removal.

Dead Larch tree.

Tree 05QG: *Fagus sylvatica.* Monolith.

Three stems from 1m, basal/stem wound likely caused by loss of fourth stem, extensive decay and fungi.

Tree 05N4: *Fagus sylvatica.* Monolith.



Tree has lost main leader resulting in heavily asymmetric crown, extensive decay on main stem from base to approx. 1.5m, decay can be seen in stump from lost leader.

Tree 05NN: *Fagus sylvatica.* Monolith.

Two stems, broad spreading crown, dangerous decay fungi *kretschmaria deus*ta at base, severe dieback and deadwood.

Tree 05LN: *Fraxinus excelsior*. Monolith.

Single stem dead tree with broad spreading crown by lake bank.