

Home Park-Hampton Court
Fungi Survey Report
2012



BY
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Home Park Fungi Survey Report

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Contents

V	Executive Summary	
1.0	INTRODUCTION & HISTORICAL CONTEXT	1-2
	Current Status	2
2.0	Fungal Modes & Habitat	2-3
3.0	Method	3
4.0	Areas of particular note & future potential	5
	4.1 Compartment 28-Unimproved Acid Grassland	5
	4.2 Compartments containing wood pasture and other wooded areas	5
	4.3 Compartments containing fallen and standing dead wood	5
	4.4 Compartments containing open water	5-6
	4.5 All compartments of Neutral and Amenity Grassland	6
	4.6 The Paddocks, Hampton Court Garden C3, Grassy, Tree Lined Areas C8, 33, 14 and The Thames Towpath	6
5.0	Results and Species of particular note	7-8
	5.1 <i>Hohenbuehelia atrocaerulea</i>	9
	5.2 <i>Tricholoma cingulatum</i>	10
	5.3 <i>Paxillus rubicundulus</i>	11
	5.4 <i>Volvariella bombycina</i>	11
	5.5 <i>Volvariella caesiointincta</i>	12
	5.6 <i>Lepiota oreadiformis</i>	13
	5.7 <i>Leucoagaricus carneifolius</i>	14
	5.8 <i>Spongipellis delectans</i>	14
	5.9 <i>Leccinum schistophyllum</i>	15
	5.10 <i>Agaricus dulcidulus</i>	16

5.11	<i>Cortinarius trivialis</i>	17
5.12	<i>Leucopaxillus giganteus</i>	18
5.13	<i>Macrolepiota fuliginosa</i>	19
5.14	<i>Melanoleuca nivea</i>	20
5.15	<i>Stropharia coronilla</i>	20
5.16	<i>Geastrum striatum</i>	21
5.17	<i>Paxillus obscurusporus</i>	22
6.0	Recommendations	23
6.1	Acid Grassland.....	23
6.2	Neutral Grassland.....	23
6.3	Amenity Grassland.....	23
6.4	Wood Pasture and other wooded areas and plantations.....	23
6.5	Honey Fungus.....	24
6.6	Biodiversity Action Plans.....	24
7.0	Conclusion	24

FIGURES

Figure 1	Compartment Map.....	4
Figure 2	<i>Hohenbuehelia atrocaerulea</i>	9
Figure 3	<i>Tricholoma cingulatum</i>	10
Figure 4	<i>Paxillus rubicundulus</i>	11
Figure 5	<i>Volvariella caesiotineta</i>	12
Figure 6	<i>Lepiota oreadiformis</i>	13

Figure 7 <i>Leucoagaricus carneifolius</i>	14
Figure 8 <i>Leccinum schistophyllum</i>	15
Figure 9 <i>Agaricus dulcidulus</i>	16
Figure 10 <i>Cortinarius trivialis</i>	17
Figure 11 <i>Leucoagaricus giganteus</i>	18
Figure 12 <i>Macrolepiota fuliginosa</i>	19
Figure 13 <i>Melanoleuca nivea</i>	20
Figure 14 <i>Geastrum striatum</i>	21
Figure 15 <i>Paxillus obscurosporus</i>	22

APPENDICES

Appendix 1: Species lists and notes for each visit in order of date

Appendix 2: Previous Records 1994 -2009

Appendix 3: Bibliography

Appendix 4. Acknowledgments

Glossary

BAP – Biodiversity Action Plan

FRDBI – Fungal Records Database of Britain & Ireland

CHEG – Clavulina, Hygrocybe, Entoloma and Geoglossom (scoring system used to ascertain importance of grassland habitats)

Executive Summary

This report was commissioned by Royal Historic Palaces to give an appraisal of the importance of Home Park & close environs in terms of its species richness and the relative scarcity and status of the species of larger fungi recorded therein - with an emphasis on grassland fungi.

The very first formal fungi survey of the park was carried out from September 22nd to December 13th 2012, initially one visit per month, increasing to two visits during peak fruiting months such as October and November. Particular compartments were allocated for each visit. Identifications were carried out in the field and where necessary collections were made for identification by microscope. Certain 'fungi hotspots' were identified and these are discussed in results. Specimens of rare and unusual species were collected, dried, written up and deposited as voucher specimens at the Fungal Herbarium, Royal Botanic Gardens, Kew.

A total of 163 species were identified from 418 records. Most species were what you would expect from an area such as Home Park and the complex of habitats therein. However the survey also revealed endangered and very rare species, such as *Melanoleuca nivea*. This and other rare species found are discussed and pictured (in part) in results. The acid grasslands in part, wood pastures, some areas of old and new tree plantations and habitat surrounding the ponds revealed healthy populations among a fairly diverse range of genera and species. These are discussed in the results and recommendations are given to encourage a future presence.

Management of acid and other unimproved grasslands, wood pasture and Honey Fungus is highlighted and discussed as a recommendation to encourage more fungi in certain areas of the site, as is the promotion of some Silver Birch and Acid Grassland scrub.

The report concludes that, apart from a few poor results from key habitats for some of the larger fungi, which can be attributed to adverse climatic conditions for the production of fruit bodies by some genera, Home Park holds a diverse range of fungal species. These are represented by most genera of the major groups of larger fungi to be expected from the complex of habitats therein. Where species have been identified as of local or national importance, from this or future surveys, these should be given protection under applicable BAP schemes.

REPORT ON THE FUNGI OF HOME PARK
SURVEY CARRIED OUT FROM SEPTEMBER 22ND TO DECEMBER 13TH 2012.
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1. Introduction & Historical context

At 303.5 hectares (750 acres) the Hampton Court Palace Estate is comprised of three main areas, Home Park, the Royal Paddocks and the adjacent River Thames Embankment. Home Park, the main survey site, constituted approximately 188.7 hectares (466 acres) although some of the Royal Paddocks, parts of the Palace gardens and the Thames Embankment were also included within the survey.

The park is situated in outer southwest London within the London Borough of Richmond. The River Thames forms an enclosing loop around the park, which sits on flat, low-lying ground and therefore constitutes part of the Thames floodplain. The Hampton Hill and Hampton areas border Home Park to the west, Hampton Wick to the east, with Bushy Park northerly adjacent and Teddington further north. On the Northern boundary of Home Park a tall brick wall runs from east to west along the Hampton Court Road, separating Home Park from Bushy Park. Along the southern boundary, east end, runs a brick wall followed further westwards by a metal fence behind which the Paddocks can be found and scattered out buildings. The Park is bordered at the west end by the railings of Hampton Court Palace and the eastern end by on site accommodation, gate entrance and a wall. There is a golf club house situated in the middle of the site with a golf course taking up a large space toward the western end. This is the first baseline fungi survey to have been carried out in the park.

1.1 Historically the park has had to endure a fair amount of disturbance during its 500-year history, most notably from the impact of the two world wars, during which large areas were and not for the first time, ploughed for agricultural and later military use to be utilised by stationed troops. However despite this disturbance it remains largely unchanged and acid grasslands remained pretty much intact. The creation of the Long Water and Lime Avenue, the planting of trees and shrubs, all would have had an influence/impact on the fungi present in the park today.

- Pre 1491 belonged to Manor of Hampton as common arable land, medieval openfield system producing crops of wheat, rye and barley**
- Late 1520's – Royal Possession of Hampton Court. Home Park enclosed and stocked with deer for the sport of Henry VIII**
- 1600's – Charles II builds upon Charles 1st uncompleted plans for the Longford River by creating the Long Water and its Lime Avenue**
- 1764-1783 – Royal Gardener Capability Brown refused to change the layout fabric of the Gardens and Park and as a result the natural ensemble that forms the court and park has international standing and acclaim.**
- 1838 Following decades of decline in management, the gardens and park were transferred over to Edward Jesse of the Office of woods and Forests who assumed responsibility for highly successful improvements made during the 1830's. This year saw the park open to the public for the first time.**
- 1849 Great Western Railway extended to Hampton Court adding to a dramatic rise in visitor numbers to the court, gardens.**
- 1893 Home Park opened to the public**

- **1895 Golf Course established in Home Park.**
- **1900 – 2012 All Elms trees lost to Dutch elm disease and many trees destroyed and decimated by the 1987 and 1990 storms with over 500 trees lost during the first storm. 1986 replanting of the Great Fountain Garden section of Long water Avenue and in 1996, the planting of 1,250 Lime trees was completed on the Cross Avenue as part of 4-year restoration plan.**
- **Now a very popular public park through which traffic passes, bringing with it its own pollution issues and as with neighbouring Bushy Park, trees and fungi will suffer alike.**

Most notably, there has been a beneficial outcome from the large planting of trees, however the rather more negative aspect of the Golf Course and the impact of The Hampton Court Flower Show over the decades would have, in part, influenced the fungi present in the park today. The consistent presence of deer from the early seventeenth century onward would also have affected the fungal populations. Deer would, and still will be, helping to move fungal spores around the park, either by ingestion or on their body. The grazing of the sward by deer and rabbits is crucial to the health of the acid and neutral grassland and therefore also the fungi present in those habitats. Also the deer droppings provide a very fertile food source for various types of fungi and it is likely that certain fungi form a part of the deer's diet. The constant presence of horses, their dung and the pasture they graze also provides fertile habitat for certain types of fungi.

1.2 Current Status

Home Park, along with neighbouring Bushy Park is considered to be of National Importance and is recognised in, among other notable documents, the English Heritage Register of Parks, Gardens and Listed Buildings. Home Park has been designated a non-statutory Site of Metropolitan Importance. The park is a 500-year-old deer park within Greater London that is largely unchanged and which contains ever-scarce acid grasslands, neutral and amenity grassland, veteran Oak & Lime trees, wood pasture, parkland trees and water bodies. Past, present and future surveys on the natural fabric of the park should eventually combine to reveal for some areas a statutory designation for the park.

2.0 The Fungal Modes & The Habitat

In order to obtain nutrients Larger Fungi are Mycorrhizal, Saprobic or Parasitic in nature, the latter two modes are combined with some species.

Mushrooms and toadstools can either be called Fruitbodies or Sporocarps; the main part of the fungus is within the given substrate and is called the Mycelium. The Mycelium, consisting of cottony, thread-like elements known as Hyphae, absorbs nutrients to enable it to produce mushrooms and toadstools. There are 3 main ways in which fungi obtain nutrients.

Mycorrhizal fungi form a mutual symbiosis via the roots of various trees and shrubs with which they exchange nutrients. These are very important fungi that help maintain healthy trees and woodland. Most of our native trees have this association with fungi; naturalized trees such as Horse Chestnut and Sycamore do not.

Saprobic fungi feed on dead and dying matter, helping to break down matter and release nutrients back into the soil.

Parasitic fungi take and give nothing in return. Some of these fungi are very destructive, such as *Armillaria mellea* - Honey Fungus or *Meripilus giganteus* the Giant Polypore, the former is parasitic and then saprobic on its host.

Home Park is low-lying and consistently flat, varying from 10m OD in the South to 15m OD in the North West corner, determined by arrangement of the river terraces. The park forms part of the Thames Floodplain.

Terrace gravels over London Clay form thin, gravely, alluvial sand, free draining soils throughout most of the park.

At present Home Park contains 1000's of freestanding trees, mainly young trees planted after the great storms, however some relic Lime trees can still be found on the Kingston Avenue. The most abundant of these planted trees are those of Horse Chestnut *Aesculus hippocastanum*, Pendunculate Oak, *Quercus robur*, which is not surprising given that this tree has a close association with old deer hunting grounds and Sweet Chestnut *Castanea sativa*. These are complemented by a small number of Beech *Fagus silvatica*, Hornbeam *Carpinus betula* and Poplar *Populus sp*, Sycamore *Acer pseudoplatanus* and *Fraxinus excelsior* Ash, all but Horse Chestnut have mycorrhizal fungi associated with them. Avenues within the park consist mainly of Lime, *Tilia x europae* and small leaved Lime *Tilia cordata* some of the older Lime Trees surviving are that of *Tilia x vulgaris*, the Common Lime. Many of the old Lime trees that have been felled or have fallen, have been left in situ helping to form some special dead wood habitats about the site, especially on Kingston Avenue. There are also a number of Horse Chestnut trees that help form the avenues. Surrounding the ponds important mycorrhizal trees such as Willow *Salix*, and Alder *Alnus*, provide good habitat for associated fungi. Elder *Sambucus nigra*, Hawthorn *Crataegus monogyna* and Field Maple *Acer campestre* are occasional.

Home Park along with neighbouring Bushy Park and Richmond Park collectively contain 46% of Greater London's unimproved acid grasslands, which potentially represents an invaluable habitat for fungi across all modes, various classes and genera. Neutral grassland and amenity grassland in the park are unusual within London as both are grazed by deer, they are mowed less and grow on acidic sandy soils, therefore providing a good potential habitat for associated fungi.

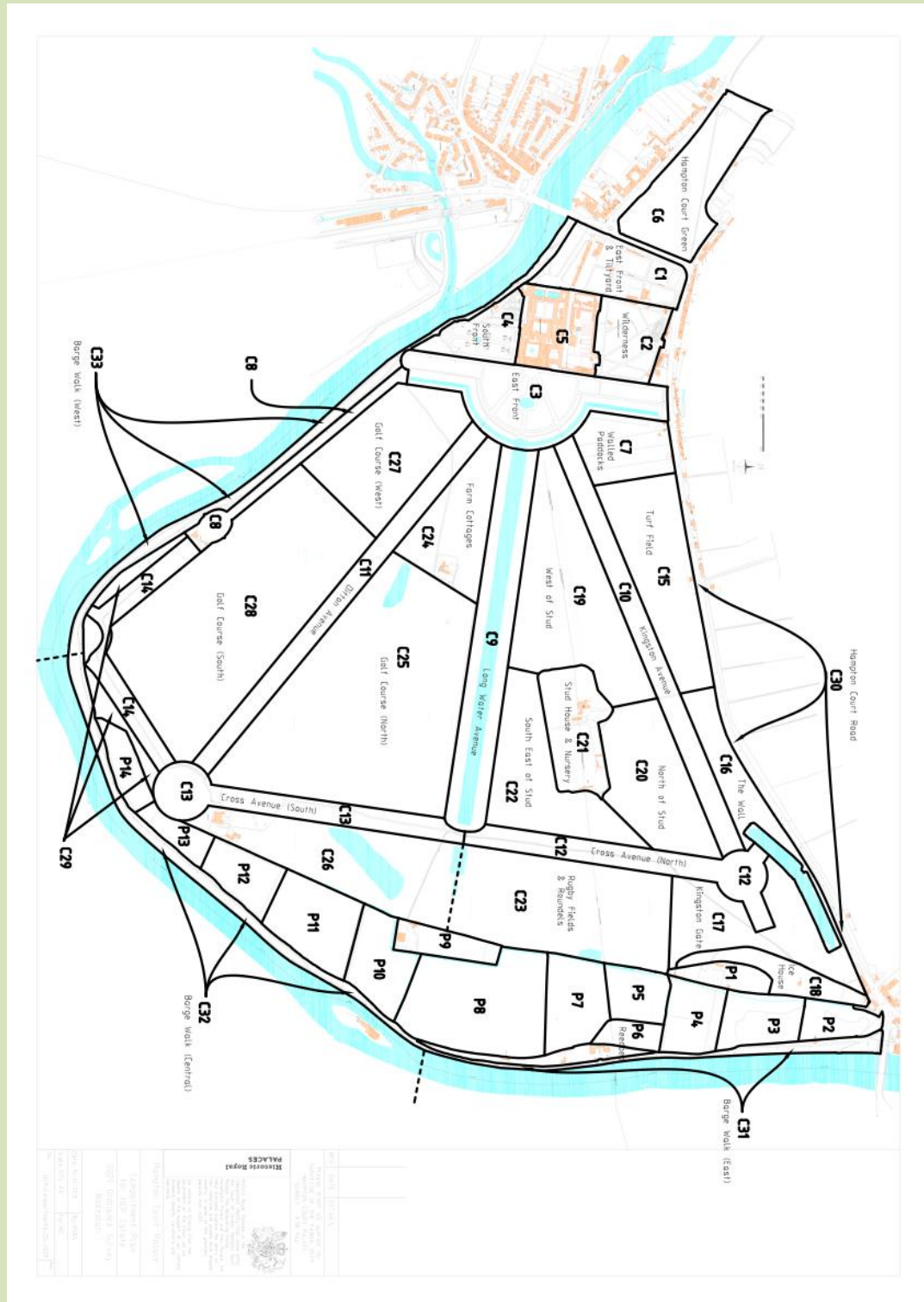
3.0 Method

The survey was carried out from September until December, therefore providing a snap shot that partly covered the changing, environmental conditions. One visit per month was allocated for the months in which fewer fungi were to be expected and two visits during October and November during which more fungi were expected to appear.

Given the size of the park, allocating certain compartments for particular visits was determined as the best way to approach the survey, as, in this way all of the compartments were covered during the entirety of the survey. Repeated visits to particular compartments were made at certain points during the survey, as they had been identified as fungal hotspots on previous visits. Compartments were covered with each of us taking a separate route through them, noting and collecting as needed.

When possible, species were named in the field, if not possible, collections were made for identification by microscope. Status and nomenclature criteria used in the accompanying spreadsheet of species recorded, was based upon recent literature listed in the bibliography at the end of the report, in particular the *Checklist of British and Irish Basidiomycota* by Legon and Henrici (2005, published by Kew Gardens). Frequency was given as in the pre-mentioned publication, as frequent, infrequent, occasional, widespread, rarely reported, rare or Red Data Listed. In some instances these entries were modified with qualifiers such as locally common. GPS readings were taken for each rare or endangered species for their exact location. Specimens of the rare and unusual species were collected, dried, written up and deposited as voucher specimens at the Fungal Herbarium, Royal Botanic Gardens, Kew.

Fig 1. Biological Recording Map of compartments used for survey



4.0 Areas of particular note & future potential

4.1. C28 – Unimproved Acid Grassland*

Occurring mainly in the southern half of the site, around the golf course, this is an area of true potential with regard to fungi associated with this type of habitat. To reflect the quality of such a habitat a scoring system known as CHEG was devised, which consists of four genera, *Clavulinopsis*, *Hygrocybe*, *Entoloma* and *Geoglossum*. The scale is measured by how many species are recorded from each or a single genus during each visit. Even though only a few species from one of these genera were recorded during the survey, that of *Hygrocybe*, the area and quality of this grassland, if maintained as directed in the 2010 habitat survey, will improve, with species numbers climbing as result. The large rings of *Leucopaxillus giganteus*, an infrequent grassland species in the London area, are a testament to the quality of this grassland. With less people, come less dogs and with this, less nitrification of the soil via dog mess. Also little or no planting has taken place in this area, which means no shade or leaf litter to break down into the soil, both important factors in maintaining the quality of this habitat for fungi.

4.2. Compartments containing wood pasture and other wooded areas

Pockets of woodland containing newly planted and older trees are scattered about the site and these offer a potentially good habitat for saprobic, parasitic and mycorrhizal fungi. Mostly Oak but Lime, Poplar, Beech, Horse and Sweet Chestnut feature also. For instance in C26 just to the right of the overflow pond, stand a couple of Oak trees where deer and rabbit graze, rare species such as *Leucoagaricus carneifolius* and large numbers of *Melanoleuca albifolia* and the more common *Lepista nuda* and *Xerocomellus pruinatus* among others were thriving here. The woodland areas nestled within the golf course didn't reveal too much apart from on the dead wood (separate habitat), however wooded areas on the boundary with the Paddocks in C23 were also promising, with various species recorded from them. Most of the lightly wooded areas around the site held promise and were in most cases rewarding with records coming from all of them, mainly of common species but important nonetheless. Some monitoring of grazing and introduction of shrub understorey in some areas would be progressive.

4.3. All compartments containing fallen or standing dead wood*

This type of habitat is crucial for a succession of various types of dead wood specialists across many genera. The park does contain areas of both of these habitats. Dead wood piles along the tree lined Kingston Avenue is an excellent example of this and some very good records came from the dead wood here, such as the rare *Hohenbuehelia atrocaerulea* and *Spongipellis delectans*. Dead wood fallen and standing is repeated throughout the site, in strategic spots, where other good records were made such as the rare *Volvariella caesiointacta*.

4.4. Compartments containing open water*.

These areas are of importance to fungi in that many of them will have Alder or Willow nearby, both of which are mycorrhizal partners to many genera and species. Of particular note was Dew Pond in that a couple of rare species were recorded from here. The interesting thing about Dew Pond is the *Salix*, *Alnus* and *Populus* trees that surround it, found associating with the Alder was the infrequent *Paxillus rubicundulus* and with the Poplar the even less frequent (in the London area) *Cortinarius trivialis*, (this being the 1st record for Middlesex) with the Willow came *Paxillus obscurosporus* another infrequent species. On the southern end of the Wall Pond in C16, the rare *Tricholoma cingulatum* was picked up with the Willow, as was *P. obscurosporus* again, all highlighting the importance of this habitat type and the status of such a habitat within Home Park. The grassy banks alongside the long water were also quite fruitful, be it mycorrhizal species such *Paxillus* and *Xerocomellus* with the newly planted trees or the ever present *Clitocybe rivulosa*

among the grass. A large wasteland looking area, just off the north side of Long Water, maybe a site for the Flower Show, had large numbers of *Agaricus campestris* fruiting on it, a sign that this piece of ground must be well established as these formed large rings from one end of the area to the other.

4.5. All Compartments with Neutral and Amenity Grassland

Many of these areas of grassland revealed little, with large swathes of the sward being to thick and high, but there were some areas among C26, C23 & C22 that proved to be quite rewarding. Rabbits have heavily grazed a section of C22; in fact one area has become a warren, which proved to be a good area for some fungi. *Lepiota oreadiformis* was abundant here and also across the road on the border of C23, not a particularly common species but present in large numbers. The uncommon *Agaricus dulcidulus* was also found here. Most apparent in these grasslands are the large numbers of *Macrolepiota procera*, *Leucopaxillus giganteus*, and *Lycoperdon utriforme* and in parts *Lepista nuda*, quite unprecedented and a true reflection of the grassland quality. The Amenity grassland area known as the Rugby Fields is also of some quality, with the infrequent *Agaricus urinascens* established here alongside another large colony of *Leucopaxillus giganteus*. Some species of *Hygrocybe* are becoming established on this area also, again highlighting the quality of this piece of amenity grassland.

4.6. The Paddocks, Hampton Court Garden C3, Grassy, Tree Lined Areas C8, 33, 14 and Thames Footpath.

These areas were visited only briefly during the survey, parts of which proved to be quite promising. The Amenity Grassland with trees those of C8 & C14 and the grassy areas with trees within C3 were especially interesting as the trees and grassland are well established. The lower edge of C8 running along the fence line with C27 and the upper and lower stretch of C14 is a promising habitat. The Conifer trees along here have well established mycorrhizal relationships with various species of *Boletus* and other genera, which would be well worth monitoring in future years. Also among the grass and mosses common species of *Hygrocybe* were recorded. The trees and grasses of C3 are also promising and at the time of visiting had various genera and species fruiting. This would be another area worth monitoring. Paddocks 7 and 8 were visited briefly and very little was picked up during this; however, I do believe there are more fungi to be recorded in parts of the Paddocks. Areas where Horses frequent are often good habitat for certain types of fungi and if the pasture is unimproved grassland, even better. Further monitoring would be beneficial. The Thames Footpath wouldn't offer a particularly rich habitat for fungi, but there would be the odd species fruiting on dead wood or with *Salix* along the waters edge.

* Hotspots

5.0 Results and species of particular note.

A total of 163 species from 418 records were identified from the park during six visits that took place during September and December 2012. Most of the genera, spread across many different families, were what you would expect from an area such as Home Park and the complex of habitats therein. In contrast to Bushy Park survey the unimproved acid grassland, neutral and amenity grasslands were of a much higher quality. Dead wood, both standing and fallen, was also much better than in Bushy Park. The fungi present in both habitats at Home Park reflected this.

However, there was a distinct lack of 'common' species among particular mycorrhizal genera, such *Russula*, *Lactarius* and *Boletus*. There were no large species of *Boletus* from the family *Boletaceae* and it was not particularly well represented by the smaller species of the genus, *Xerocomellus*, which was represented only by 2 species. Where these did occur though, mostly associating with younger trees planted along Cross Avenue and within compartment 17, they were in healthy, large numbers. One uncommon species from the genus *Leccinum*, *L. Schizophyllum* was recorded near to

Dew Pond. However, it must be pointed out that 2012 was not a 'good year' for the production of fruit bodies from these genera, so this would have to be built into the survey output, as they may well have been more prevalent in previous years and therefore in years to come. Many of the larger *Boletus* and *Russula* species are thermophilic, they thrive during the warmer periods, and temperatures throughout the summer and autumn in England were relatively low and inconsistent in 2012. As a result many fungi that thrive in the warmer conditions did not produce fruit bodies, the prolonged wet weather over the summer also impacted on these fungi and other genera, practically stunting any emerging fruit bodies. Furthermore the deer may well eat some of the larger *Boletes* and other edible fungi as part of their diet, as they do so in the wild.

Other mycorrhizal families such as the *Cortinariaceae*, which had a 'better year', were represented by a small number of species, from various genera such as, *Cortinarius*, *Inocybe* and *Hebeloma*. It also has to be said that the wet weather may well have promoted the mycelial growth of many of these species of fungi present on site, with more happening within the substrate than actually on the surface.

One of the outstanding aspects of Home Park's fungi is the population of *Leucopaxillus giganteus*, which occur in a number of the grassland compartments. These are well established, forming large rings, many metres in circumference, these populations help indicate and highlight the quality of the grasslands in park.

Other grassland species often used as indicators for the quality of an unimproved grassland habitat, were in evidence also, such as, *Hygrocybe* and *Entoloma*, however these were mostly common species, dominated by *Hygrocybe virginea*. One would expect upwards of ten species of *Hygrocybe* in particular unimproved grassland habitat for it be of high value and other species such as *Clavulinopsis*, *Geoglossum* and *Entoloma* would need to figure in numbers also. All of these species are likely to be found in higher numbers in shorter, mown or grazed grasslands with mosses such as those surrounding the Palace, where some of these species were picked up also. The unimproved acid grassland at Home Park isn't the ideal habitat for these species, however, as has been recorded, some of the more common species will and did occur.

It is the occurrence of *Leucopaxillus giganteus*, as well as species such as, *Lepiota oreadiformis*, *Lycoperdon utriforme* and even the common Field Parasol, *Macrolepiota procera*, in such large numbers, which make these grasslands special. Over time and with the correct management, as indicated by the LWT Phase 2 survey, these grasslands will improve further, and encourage more species of fungi. The various ditches across the park, especially the large ditch running east to west across C19 hold a lot of promise and afforded a couple of good records such as *Hygrocybe quieta* and *Melanoleuca grammopodia*.

The annual flower show that takes place along and beside the Long Water Avenue for six days during July will undoubtedly create disturbance and compaction of the soil, given the number of vehicles and people attending. Little can be done other than minimising any impact upon the fungi associating with the newly planted trees in this area.

Dead wood across the site is excellent and some good records were made from some of the woodpiles, mainly consisting of Lime and Horse Chestnut. Species such as *Hohenbuehelia atrocaerulea* and *Spongipellis delectans* were stand out records from the woodpiles. The water features, such as the various ponds and the Long Water, provided good records also. The Dew Pond was especially rewarding, as a variety trees such as, *Salix*, *Populus*, *Alnus* and *Quercus*, surround it. Associating with the Alder at the rear of Dew Pond was the uncommon *Paxillus rubicundulus*, with the *Salix* on the north side of the pond, *Paxillus obscurusporus* was recorded and close to the Poplar at the rear, south side border, the rare *Cortinarius trivialis* was recorded. Fruiting with the *Salix* at Oak Pond, *Geastrum striatum* was recorded and at the west end of the 'wall pond' also associating with the *Salix*, the uncommon, *Tricholoma cingulatum* was picked up, alongside another population of *Paxillus obscurusporus*.

The presence of a golf course running through the most important grassland area of the park is a kind of curiosity. Given that the golf course has been here as long as the park has been open to the public, over 100 years, it has to some degree co-evolved with the grassland surrounding it, which may be beneficial to some degree. However, any fertilizers or pesticides used on the course will have bled into the grassland leading to a detrimental effect on the fungi present. Also footfall pressure and golf balls lying in the grass in fairly high numbers, which are often left to break down into the substrate, is not good for the grassland and surrounding woodland areas. Another factor directly linked with the golf club is vehicle traffic within the park, not as heavy as Bushy Park but still

detrimental to the health of the grasslands and therefore associating fungi. Also, it doesn't help having the Hampton Court Road running down the north side either but that is the nature of the park and its setting, about which very little can be done. Upon a more positive note, the number of people visiting the park and the dogs often accompanying them was, compared to Bushy Park, very low and this I believe is an important component that adds to why there is a diverse and healthy mycota to be found within the park. Heavy footfall by visitors will compact the soil and dog mess left behind will lead to nitrification of the soil leading to a detrimental impact upon the fungi present in the park.

The Wood Pasture, planted avenues and other wooded areas were generally found to be promising sites for various fungi across the park. *Leucoagaricus carneifolius*, *Melanoleuca nivea* among many others were recorded from this habitat. Only a few ectomycorrhizal species were recorded from these areas, records being of mainly saprobic species. This could have been due to the unfavourable climatic conditions for particular ectomycorrhizal genera during 2012.

It was noted that Honey Fungus (*Armillaria mellea*) was quite rampant along the northern boundary wall. I would recommend that if the Honey Fungus were not already under supervision that it should be kept in check. Although it is very difficult to manage I would not advocate, however, the use of any chemical substances.

Another species, which one may expect from a park such as this, is *Podoscypha multizonata*. This species is especially associated with old deer parks, and fruits around the roots of the old or veteran oak or beech, generally in open areas. South East England is host to 80% of the world's population of this species precisely because of the type of habitat provided by old deer park of this kind.

Most of the species recorded during the survey are frequent, common & widespread across England and what you would expect from the various types of habitat that comprise Home Park. Some very rare, new to the county of Middlesex and nationally important species were recorded from the park during the survey. Some of these are covered below. There were no species indentified that are listed on Schedule 8 of the Wildlife and Countryside act 1981.

5.1 *Hohenbuehelia atrocaerulea* - TQ 16916 68884 – Kingston Avenue – Dead Wood – Tilia – **New Record for Middlesex.**

The species is rarely recorded although fairly widespread. It fruits from dead wood of a wide variety of broadleaved deciduous trees, from differing habitats. This is not only the first record from Middlesex but also looks to be the first from dead Lime wood; this was recorded from the Kingston Avenue. There are currently 149 records held in the FRDBI*



Fig 2. – *Hohenbuehelia atrocaerulea* – © Andy Overall

5.2 *Tricholoma cingulatum* - TQ 17122 69060 - "Wall Pond" - The Wall - C16

This is an occasional yet widespread species in England and Wales and is rarely reported from elsewhere. It is a mycorrhizal species that associates with various species of *Salix* - Willow; with which this collection was found at the west end of the pond in C16. Out of the 297 records on the FRDBI there is only one for Middlesex, this record is therefore the second for this county and the first since 1987.



Fig.3 *Tricholoma cingulatum* - ©Andy Overall

5.3 *Paxillus rubicundulus* - TQ14895 69421- Woodland Gardens with Alder

A species that is apparently common in Scotland but much less frequent southwards. This is born out by there being only 118 records in the FRDBI. This is a species that associates only with Alder with which it is mycorrhizal. It was found growing at the rear of Dew Pond with Alder trees bordering with the Paddocks. From 139 records on the FRDBI this record is only the second for the county of Middlesex. The first record came from across the road at Bushy Park in 2010.



Fig. 4 *Paxillus rubicundulus* - © Andy Overall

5.4 *Volvariella bombycina* – C24 West Side of Farm Cottages on large section of dead fallen Horse Chestnut or Lime tree with wasps nest.

This stunning species is now considered rather rare because of the demise of its favourite host, the Elm. It has however managed to colonise other broadleaved, deciduous trees such as, Sycamore, Horse Chestnut, Ash, Hawthorn, Oak and Poplar. At Home Park it was found fruiting from a very decayed section of Horse Chestnut within which there was a live wasps nest. This species has been recorded once before with a wasp's nest. There are currently 288 records of this species on the FRDBI of which only seven are from Middlesex, this would be the eighth.

5.5 *Volvariella caesiotincta* - TQ 17144 69170 - C16 - Dead Lime wood

This rare species is usually found fruiting on the dead wood of Elm; however, this record was from either Lime or Horse Chestnut. It has a peculiarly strong smell, rather astringent, especially when enclosed within a container for some time. There are currently only 56 records in the FRDBI for this species with six of these from Middlesex making this the seventh record.



Fig. 5 *Volvariella caesiotincta* - © Andy Overall

5.6 *Lepiota oreadiformis* – C 22 & C 23 bordering Cross Ave

This is considered an occasional yet widespread species in England, which inhabits acidic or basic soil in grassland. It is rarely reported from elsewhere. It occurred during October at Home Park, in large numbers, close to the Cross Avenue in C22/23. There are currently 174 records on the FRDBI with only one of these originating from Middlesex back in 2004. This being the second only record.



Fig. 6 *Lepiota oreadiformis* - ©Andy Overall

5.7 *Leucoagaricus carneifolius* – Wood Pasture -Compartment 26

This is a rare species that has been only occasionally recorded from wood pasture such as C26 where this record was made, as it is normally recorded from scrub vegetation, gardens and cool greenhouses. It is an occasional and not particularly widespread species. This is the fifth record for this species in Middlesex; there are currently only 53 records in the FRDBI.



Fig. 7 *Leucoagaricus carneifolius* ©Andy Overall

5.8 *Spongipellis delectans* – C10-Kingston Avenue - on dead Tilia wood – **New Record for Middlesex.**

This is a species that specialises on dead wood, usually that of Beech – *Fagus* but it is also occasionally found on Sycamore – *Acer pseudoplatanus* or *Aesculus* – Horse Chestnut or *Fraxinus* – Ash. At Home Park it was found tucked inside the rotting hulk of an old, dead, Horse Chestnut section, the same tree species upon which I recorded it from my Richmond Park survey. It is not a common species and not particularly widespread, with only 104 records in the FRDBI this is the first record for Middlesex.

5.12 *Leccinum schistophyllum* – C23 with Birch near to Dew Pond – **New to Middlesex.**

This species was first described in 1981 so therefore it's a relatively new species. This record was found among grass, close to Poplar trees with the odd Birch tree nearby and as this is strictly a Birch associate there would have to be Birch in the vicinity. This species is thought to prefer wetter habitat and conditions in relation to close species such as *Leccinum holopus*. This is an infrequent to rare species with a distribution that is not at all well known. There are only 33 records that exist within the FRDBI and this is the first record from Middlesex.



Fig. 8 *Leccinum schistophyllum* ©Andy Overall

5.9- *Agaricus dulcidulus* – C22 – Unimproved grassland bordering Cross Avenue-**New to Middlesex**

This is a species that is normally seen as having a woodland habitat or at least wood pasture, gardens, lawns or parkland with trees nearby. However, in this case there was not a tree in sight, as it was on soil within unimproved neutral grassland in C22 close to Cross Avenue. It is a rarely reported species that is apparently widespread. There are 147 records of this species in the FRDBI and not one for Middlesex, which I found quite surprising. Therefore this is the first record for Middlesex.



Fig. 9 *Agaricus dulcidulus* ©Andy Overall

5.10 *Cortinarius trivialis* – TQ 17490 68603 - Dew Pond – Associating with bordering Poplar sp. **New to Middlesex.**

This is an occasionally recorded species that is apparently widespread. It occurs on soil associating with *Salix*, *Populus*, *Betula* and *Quercus* spp. At Home Park there was only one specimen fruiting, which was close to the Poplar at the rear of Dew Pond. There are 159 records of this species for Great Britain and Ireland in the FRDBI among which there are none for Middlesex making this the first record. Note: The photograph below right was taken with Pine in Cyprus and was included to illustrate the stem girdled with velar remnants



**Fig. 10 *Cortinarius trivialis* ©Andy Overall
(Right hand picture taken in Cyprus) © Andy Overall**

5.11 *Leucopaxillus giganteus* – Unimproved Grassland

This is an occasional yet widespread species of woodland as well as grassland habitats. At Home Park it occurs in large rings across the park from the Old Rugby Field, heading west, both north and south. There are currently 375 records of this species in the FRDBI with only one previous record from Middlesex, the last coincidentally being from Bushy Park in 2003. However, I recorded it from Hyde Park in 2009 (not showing in the FRDBI) so that would make this the third record for Middlesex. It was the sheer volume of this species in Home Park that impressed me, which helps indicate the quality of the grassland habitat at present.



Fig. 11 *Leucopaxillus giganteus* ©Andy Overall

5.13 *Macrolepiota fuliginosa* – C24 West Side of Farm Cottages

This is considered to be a rarely reported species that is a close relative of the common Field Parasol, *Macrolepiota procera*. The difference between the two is mainly macroscopic with reddening of the flesh, taking place in *M. fuliginosa* and not with *M. procera*. Also the snake-like pattern on the stem is less discernable compared with that of *M. procera*. Habitat preference between the two differs also; *M. fuliginosa* is a woodland species, whilst *M. procera* prefers grasslands. There are very few records of this in the FRDBI, 19 to be exact, two of these are mine from Middlesex making this the third record for Middlesex.



Fig. 12 *Macrolepiota fuliginosa* ©Andy Overall

5.14 *Melanoleuca nivea* – TQ16619 67486 & TQ16368 67643 – C28 Poplar & C27

There appears to be some disparity regarding the records and collections of this species, between the FRDBI and the British Basidiomycota Checklist. It is quite clearly a rare species with the FRDBI showing only sixteen records dating back to 1970, all of which were recorded under its now synonymous name of *M. subpulverulenta*. The checklist comments that this species is known in Britain only from an illustration and by one collection held at Kew from Leicestershire in 1993. According to the FRDBI it was recorded from Eccleston Square, Victoria, London in 1983. It is a saprobic species that seems to have a varied habitat from, open grassland, wood pasture, often close to deciduous broadleaved trees or conifers. This collection was made in a small wooded enclosure dominated by *Populus* spp. Another collection was made on the edge of grazed acid grassland with newly planted trees close by. This determination was reached, following modern treatment by Jan Vesterholt in *Funga Nordica* 2012. Spores are ellipsoid, verrucose and rather small for this genus; spores from this collection measured (5.1) 5.7 x 7.9 (8.5) microns. If the Eccleston record were indeed correct then this would be the second record for Middlesex.



Fig. 13 *Melanoleuca nivea* ©Andy Overall

5.14 *Stropharia coronilla* – On soil among grass at the cross avenue end of the Longwater in C25

This not a particularly rare species with over 400 records in the FRDBI, it is a saprobic fungus that prefers the more nutrient rich soils, often found in grass on roadside verges. This record was made at the end of the Long Water, among grass that meets with the Cross Avenue. Among those 400 records there is only one other for Middlesex made in Hounslow back in 1973, making this, along time coming, second only record for the county.

5.15 *Geastrum striatum* – Beneath Salix at Oak Pond- C25

This is one of the smaller earthstars that have a distinctive, extended, neck-like stalk, upon which a puffball-like structure (Endoperidium) sits at the top, the top of which has a plicate beak-like protrudence (Peristome) through which mature spores are released. These both sit upon a tough outer skin known as the Endoperidial Body, which appears onion-like when immature, which then opens out to reveal the puffball and then proceeds to split and raise it up on what are called Rays. These are saprobic species; generally occurring near to trees, and sources of dead wood, deep leaf litter or sandy substrates. This species is distinguished from the very similar *G. pectinatum* by having among other differences, a small basal collar beneath the puffball, shown in the picture below. The FRDBI currently has 320 records of this species with only four from the county of Middlesex, this being the fifth.



Fig. 14 *Geastrum striatum* ©Andy Overall

5.16 *Paxillus obscurusporus* - TQ 17122 69060 – C16 west end of pond with Salix, also with Salix at Dew Pond - TQ 17490 68603-New to Middlesex

This is a mycorrhizal species, which is a member of the Boletaceae, making it a close, yet toxic relative of the Boletus mushrooms. The most common species from this family is *P. involutus*-The Brown Roll Rim, which associates with various trees, quite often with Betula-Birch but at Home Park *P. involutus* was with Beech-Fagus. This species was recorded in two different locations, where it was quite clearly associating with Salix, especially so in C16 where there were no other trees but Salix in vicinity. It is the large size, the broad involute margin, and a deep red-brown spore print that help separate this from *P. involutus*. However there are other species of this genus that as of yet have not been clearly defined so it would be advantageous to monitor these populations in the years to come.

There are currently only three records of this species on the FRDBI none of which are from Middlesex. I am aware of collections being made from Hyde Park of this species but this will stand as the first record for Middlesex.



Fig 15. *Paxillus obscurusporus* ©Andy Overall

6.0 Recommendations

6.1 Acid Grassland

The acid grassland within the park is of a good quality and currently offers a good habitat for associated species for fungi. To help maintain and to heighten the quality of the acid grassland it would be advantageous to follow the directives given by the London Wildlife Trust in their phase two-habitat survey of the park. Continue light grazing by fallow deer to help prevent scrub encroachment and to consider introducing small, fenced plots of non-encroaching acid grassland shrubs such as heather. An understanding and agreement with the golf course has to be achieved, regarding the use of fertilizers and pesticides and the abandonment of golf balls in the grassland and surrounding woodland. The use of chemicals will have a huge effect on any fungi present and upon the promise of encouraging more species. The golf balls have to be collected and not left to break down into the soil as this will also lead to deterioration of the grassland. As is the current practice, no mowing should be allowed to take place on grazed acid grassland, no heavy machinery or any vehicle should be allowed access directly on or across the acid grassland. There should be no more trees planted or any soil or leaf litter left behind.

6.2 Neutral Grassland

The neutral grassland within the park was generally and relatively quite good for fungi, particularly in the rabbit grazed areas. To help bring about a more diverse sward more grazing across the site would be beneficial. This will in turn help to encourage more fungi of different genera to these grasslands. If this cannot be achieved, a mowing/cutting regime would be advisable during spring and early summer. The off cut should be removed. This process should continue for up to three years to allow for seeds of the ranker grasses to grow out and for other grasses to move in to form a more diverse sward.

6.3 Amenity Grassland

As pointed out by the LWT report, these amenity grasslands are unusual in London as they are on sandy acid soils, deer graze them and they are not under a heavy mowing regime. As a result some of these areas such as the Rugby Pitch, Paddocks, lawns and grassy areas around the Palace hold for this type of habitat, a fairly diverse mycota. It would be advisable to continue these practices to help maintain and enhance this habitat for fungi and to help minimise any impact upon the fungi associating with the newly planted trees along the Long Water avenue by the Hampton Court Flower Show.

6.4 Wood Pasture and other wooded areas and plantations

These are an important habitat within the park as they provide partners for mycorrhizal fungi and more shade tolerant saprobic fungi. These areas need monitoring for over grazing and really should only bear light grazing. Some small shrubs should be allowed to flourish to help accomplish a light understory; this would help encourage more mycorrhizal species throughout the park. Where these wooded areas are not surrounded by acid grassland, it would be a good idea to encourage a little Birch scrub, a well-known and good partner for many mycorrhizal species. Soil compaction could also be a contributor but I think less so. In some cases it may be worth surrounding the trees with some woodchip, which help attract worms to help aerate the soil a little. The more recently planted avenues such as the Long Water and Cross Avenue, as well as other scattered trees are currently providing a good habitat for mycorrhizal species, the areas around which should be kept in mind when managing such as any mowing or heavy vehicles.

6.5 Honey Fungus

Honey Fungus was rather rampant along the wall bordering the Hampton Court Road and will therefore need monitoring or some management, but without the use of any chemical products. However, as a whole this is not a particular problem in the park.

6.6 Biodiversity Action Plans

Certain species from the park may have been identified during the survey or during future visits as vulnerable or endangered with reference to data from the current UK Fungi Draft Red Data List. Where this is the case a local or where appropriate, national Biodiversity Action Plans should be applied, if this has not already been done. This will afford further protection for the species.

7.0 Conclusion

In conclusion, Home Park appears to be well represented by most genera of the major groups of fungi to be expected from the complex of habitats therein. Larger species of the genus *Boletus* were low in number as were the smaller species of *Xerocomellus* and members of the genera's *Russula*, *Lactarius*. However, many of the larger *Boletus* and some of the *Russula* species are thermophilic; they prefer warm and wet periods. 2012 did not provide warm enough temperatures for long enough to result in conditions suitable for these species to fruit, let alone in reasonable numbers. Combine this lack of warmth with persistent rain and the mycelium of many of the ectomycorrhizal fungi would have become saturated and simply ceased to produce fruit bodies. However, all of this wet weather would have promoted new mycelial growth, therefore it cannot be presumed that these species are not present in the park as they may have been in previous more favourable years and may well be in the years to come. This would also be applicable to other ectomycorrhizal genera.

There were a number of areas of the park that can be identified as 'hotspots' for various types of fungi. The unimproved grasslands are such a 'hotspot', as was Dew Pond, where many different mycorrhizal and saprobic species, from different genera, thrive.

However, even though particular areas above have been highlighted as hotspots, unlike other parks surveyed, Home Park has more of a balance across the site, where a diversity of fungi thrive in many of the different habitats, be it dead wood, acid grassland, a pond or wood pasture.

Areas such as around the Dew Pond and the standing and fallen dead wood along Kingston Avenue, proved to be rich habitats for fungi, where Willow and Alder trees grow in the former and large remnants of old Lime and Horse Chestnut lay in piles in the latter. Rare species such as *Paxillus rubicundulus* and *Paxillus obscurusporus* were recorded with the Alder and Willow, as well as the rare *Cortinarius trivialis*, which is mycorrhizal with the Poplar that borders the Dew Pond. The ponds across the park all had something interesting to offer and should all be looked upon as important areas for fungi and therefore managed as such. On the dead wood, rare species such as *Hohenbuehelia atrocaerulea* and *Spongipellis delectans* were recorded among many other wood rotting species among them *Coriolopsis gallica* a species considered rare just a few years ago, now spreading with the practice of leaving dead wood piles on site.

Wood pasture, plantations and other wooded areas around the site were promising for larger fungi. The wood pasture on site isn't particularly large and the dominant tree is Oak, there weren't too many species visibly associating with these trees. One would expect to see a fairly good variety of mycorrhizal, saprobic and parasitic fungi, however in the main this was not the case. This could be due to the climatic conditions during the survey or could be a result of overgrazing and possibly, although unlikely, a little compaction from trampling. The lack of understory would also be a contributing factor. However, rare species such as, *Leucoagaricus carneifolius* and *Melanoleuca nivea* were recorded from this habitat. A recommendation would be to put wood chipping around the base of the trees in these areas, which would encourage worm activity and, therefore, aeration of the soil, if needed. Additionally, some dead hedging could be carried out which would support this measure. Newly planted Lime and Beech trees, forming avenues or scattered among the grassland, are supporting mycorrhizal species

such as *Xerocomellus cisalpinus*, *Paxillus involutus* and *Amanita muscaria* as well as various saprophytic fungi such as *Mycena pura* and *Clitocybe odora*.

The acid grasslands were generally good for certain types of larger fungi. Grazing by deer is helping maintain the standard of this grassland so the present practice of non-mowing is applicable and should be continued. Many species indicative of acid grassland were evident such as common species of *Hygrocybe* but many also were not. An agreement needs to be brokered with the Golf Club to cease the use of chemicals used to maintain the golf course and all balls must be collected, as there are hundreds of golf balls lying in the woodland and acid grassland surrounding the course. These will break down and leach into the soil resulting in enriched/toxic soils. Pockets of acid grassland shrub such as Heather should be considered and where established should be restricted of spread and maintained by light grazing by the deer. This would all help maintain and heighten the quality of the grassland therefore the fungi associating therein.

With the neutral grassland more grazing or a mowing/cutting regime is needed to allow for more diverse grass species. There were fewer fungi recorded from these areas, except for where rabbits had grazed them or there were dry ditches.

Amenity grassland in Home Park is unusual for London as deer graze some areas; it is mowed less often and is on acidic sandy soils. As a result an interesting mycota is emerging. Other grassy areas such as those surrounding the palace, those that border the park, are also of interest in supporting a varied mycota of larger fungi. The annual flower show that takes place along and beside the Long Water Avenue for six days during July will undoubtedly create disturbance and compaction of the soil given the number of vehicles and people attending. Little can be done but to try minimising any impact upon the fungi associating with the newly planted trees in this area.

All of these grasslands, if taken together, form a very important habitat for grassland fungi in London. The large, very well established rings of *Leucopaxillus giganteus* and sheer mass of *Lycoperdon utriforme*, *Macrolepiota procera*, *Lepista nuda*, *Hygrocybe virginea* and *Rhodocollybia butyracea* go some way in highlighting this. The low number of visitors and the dogs that usually accompany them has definitely had an impact on the quality of these grasslands and their associated fungi, as this means less compaction to the soil through footfall and less nitrification of the soil by dog mess. If this continues and the grasslands are managed as outlined, then they will be of an even higher quality with a diverse mycota to match.

Standing and fallen deadwood provided some good records such as *Hohenbuehelia atrocaerulea* on Tilia, *Spongipellis delectans* on Horse Chestnut and *Coriolopsis gallica* on Tilia also. Most of these records came from the Kingston Avenue but other dead wood areas across the site provided good records. Recommended action in this case would be to encourage more standing and fallen deadwood, wherever possible, out in the open areas of the park. The dead fallen and standing wood is one of the highlights in the management of this park.

Collectively, these habitats, which constitute Home Park, hold a diverse range of fungal species across many genera of the major fungal groups. In a number of cases some species are of local or national importance, which should be noted and afforded some protection under the applicable BAP schemes. There were no species identified that are listed on Schedule 8 of the Wildlife and Countryside act 1981.

APPENDIX 1

Species lists and notes for each visit in order of date

Home Park Fungi Survey 25/09/2012

Species list and mini report By Andy Overall

Leucopaxillus giganteus

Grifola frondosa
Mycena galericulata
Stereum hirsutum
Pluteus cervinus
Pleurotus ostreatus
Polyporus squamosus
Ganoderma australe
Gastrum striatum
Laetiporus sulphureus
Phellinus igniarius
Ganoderma australe
Auricularia mesenterica
Lycoperdon utriforme
Lycoperdon plumbea
Stereum subtomentosum
Agaricus augustus
Paxillus rubicundulus
Leccinum schistophyllum

Given the very dry conditions preceding this first visit to Home Park for the beginning of the first larger fungi survey of the park, the heavy rain that fell a few days before seems to have worked its magic. I was very impressed with the relatively large population of the occasional yet widespread, *Leucopaxillus giganteus*. It was found in practically every parcel surveyed during the visit. *Paxillus rubicundulus* was also a nice record found at the rear of Dew Pond associating with *Alnus glutinosa*.

Andy Overall

**Home Park Fungi Survey
10/10/2012**

**Species list and mini report
By Andy Overall**

Coprinellus micaceus
Leucoagaricus leucothites
Gymnopus dryophilus
Mycena flavoalba
Mycena aetities
Bolbitius titubans
Macrolepiota mastoidea
Ganoderma australe
Armillaria mellea
Volvariella caesiotincta
Macrolepiota procera
Marasmius oreades
Pluteus cervinus
Hypholoma fasciculare
Psathyrella tephrophylla
Mycena haematopus
Pleurotus dryinus
Hohenbuehelia atrocaerulea
Calocera cornea
Coriolopsis gallica
Stereum subtomentosum
Pleurotus ostreatus
Coprinellus domesticus
Trametes gibbosa
Bjerkandera adusta
Mycena galericulata

Chlorophyllum rhacodes
Psathyrella pilluliformis
Lycoperdon pratense
Agaricus silvaticus
Macrolepiota procera
Macrolepiota excoriata
Lepista inversa
Coprinellus impatiens
Mycena pura
Tubaria conspersa
Agaricus comtulus
Meripilus giganteus
Mycena aetites
Pholiota gummosa
Parasola plicatilis
Lycoperdon utriforme
Lycoperdon pratense
Macrolepiota procera
Agaricus campestris
Psathyrella prona
Pluteus nana
Bolbitius titubans
Clitocybe rivulosa
Polyporus squamosus
Clitocybe rivulosa
Lycoperdon molle
Marasmius oreades

Lepiota oreadiformis
Agaricus dulcidulus
Rickenella fibula
Clitocybe rivulosa
Entoloma sericeum

Following some more prolonged spells of rain, I felt that this visit began to reveal the potential of the Home Park grasslands and other habitats, especially the dead wood left in situ. Particular species of note would be that *Hohenbuehelia atrocaerulea* recorded from dead wood of Lime or Aesculus lying in the central area of a Lime Avenue. Other fine records were that of *Agaricus lutosus* and *Agaricus dulcidulus*. Also species such as *Lepiota oreadiformis* is an occasional, yet widespread species of grasslands. *Volvariella caesiointincta* on dead wood along the wall boundary was another good record.

Andy Overall

**Home Park Fungi Survey
23/10/2012**

**Species list and mini report
By Andy Overall**

Xerocomellus cisalpinus
Mycena pura
Melanoleuca poliroleuca
Macrolepiota procera
Rickenella fibula
Mycena flavoalba
Mycena aetites
Bolbitius titubans
Agrocybe pediades
Thelephora terrestris
Lepiota oreadiformis
Paxillus involutus
Lycoperdon molle
Bovista plumbea
Agaricus urinascens
Leucopaxillus giganteus
Entoloma sericeum
Amanita muscaria
Chalciporus piperatus
Clitocybe rivulosa
Ampuclitocybe clavipes

<i>Rugosomyces carneus</i>
<i>Clitocybe odora</i>
<i>Rickenella swartzii</i>
<i>Clitocybe nebularis</i>
<i>Mycena galopus</i> var. <i>alba</i>
<i>Lycoperdon pyriforme</i>
<i>Agaricus xanthodermus</i>
<i>Hebeloma leucosarx</i>
<i>Lepista nuda</i>
<i>Chlorophyllum rhacodes</i>
<i>Melanoleuca grammopodia</i>
<i>Phlebia tremellosus</i>
<i>Lepista sordida</i>
<i>Stropharia inuncta</i>
<i>Stropharia caerulea</i>
<i>Mycena inclinata</i>
<i>Agaricus langei</i>
<i>Coprinus comatus</i>
<i>Lycoperdon molle</i>
<i>Melanoleuca albifolia</i> syn. <i>M freisii</i>
<i>Xerocomellus pruinatus</i>
<i>Leucoagaricus leucothites</i> var. <i>carneifolius</i>
<i>Stropharia coronilla</i>
<i>Lycoperdon pratense</i>
<i>Lycoperdon utriforme</i>
<i>Hypholoma fasciculare</i>
<i>Coprinellus micaceus</i>
<i>Agaricus dulcidulus</i>
<i>Rhodocollybia butyracea</i>
<i>Panaeolus olivaceus</i>

Oudemansiella mucida
Clitocybe truncicola
Pleurotus ostreatus
Crepidotus variabilis
Flammulina velutipes
Agaricus augustus
Lepista inversa
Macrolepiota fuliginosa
Lycoperdon pyriforme
Mycena galericulata
Volvariella bombycina
Lepiota cristata

Fungi among the grasslands were in full swing during this visit with some very nice records such as ***Leucoagaricus leucothites* var. *carneifolius*** and ***Melanoleuca albifolia***. There was a magnificent display of Field Parasols, ***Macrolepiota procera*** and ***Leucopaxillus giganteus*** and a singular specimen of the rare ***Macrolepiota fuliginosa*** was found among trees behind the farm cottages. Among a woodpile in C25 the rare ***Clitocybe truncicola*** was recorded. As of yet awaiting the appearance of ***Hygrocybe*** species among the grassland, which in numbers of various species, among other genera, ***Clavulina***, ***Entoloma*** and ***Geoglossum*** are important indicators as to the quality of the grassland. I am sure they will arrive. 64 species recorded from this a very satisfying visit.

Andy Overall

**Home Park Fungi Survey
06/11/2012**

**Species list and mini report
By Andy Overall**

Lactarius turpis
Laccaria laccata
Lactarius tabidus
Agaricus silvaticus
Inocybe geophylla var. geophylla
Inocybe geophylla var. lilacina
Stropharia caerulea
Agaricus arvensis
Cortinarius flexipes
Leucoagaricus leucothites var. carneifolius
Hypholoma fasciculare
Hygrocybe virginea
Laetiporus sulphureus
Rhodocybe gemina
Xerocomus chrysenteron
Chlorophyllum rhacodes
Melanoleuca rasilis
Lepista flaccida
Lepista sordida
Agaricus augustus
Geastrum floriforme

Stropharia pseudocyanea
Hygrocybe psittacina var. perplexa*
Hygrocybe psittacina var. psittacina
Melanoleuca polioleuca
Clitocybe rivulosa
Melanoleuca rasilis
Laccaria pupureobadia
Hemimycnea lactea
Agaricus xanthodermus
Mycena aetites
Agaricus campestris
Tubaria conspersa
Hygrocybe chlorophana
Armillaria mellea
Lycoperdon pyriforme
Coprinellus micaceus
Fistulina hepatica
Russula graveolens
Bjerkandera adusta
Marasmius oreades
Echinoderma asperum
Paxillus obscurusporus
Tricholoma cingulatum
Mycena pura
Lepista nuda
Macrolepiota procera
Rhodocollybia butyracea
Ampulloclitocybe clavipes
Clitocybe metachroa
Gymnopus fuscopurpureus
Clitocybe rivulosa
Mycena flavoalba
Cystoderma amianthinum
Clavulinopsis helvola
Clavulinopsis fusiformis

Entoloma sericeum
Amanita muscaria
Hebeloma leucosarx
Paxillis obscurusporus
Pholiota squarrosa
Xerocomellus cisalpinus
Tricholoma scalpturatum
Cortinarius trivialis
Amanita rubescens
Lepista saeva
Agaricus arvensis
Clitocybe nebularis
Mycena inclinata

This visit took in the formal gardens of Hampton Palace. Notable were C3, C8 & C14 especially the lower edge of C8 along the fence line with C27 and the upper and lower stretch of C14 grassland beyond the grey railing. These areas are free of too much treatment, be it mowing or chemicals. As a result, species indicative of unimproved grassland were evident such as *Hygrocybe virginea*, *H. psittacina* and *H. chlorophana*. In Home Park a number of notable species were recorded such as the infrequent *Tricholoma cingulatum* with Salix around the ponds on the C16 Wall Boundary also here was a large species of *Paxillus* yet to be determined. Over to the east side of the park around Dew Pond a first record for Middlesex of *Cortinarius trivialis* was picked up along the boundary with *Populus tremulus* Another large *Paxillus* was also recorded from around the Salix at Dew Pond, which will also need determining. Visits to Paddock 7 & 8 proved not so fruitful. The grassland area within C16 & C23 was relatively quiet, however the Rugby Pitch also revealed *H. psittacina* and *H. virginea* both common Waxcaps but only occurring on unimproved grassland of at least ten or more years without chemical treatment.

Andy Overall

**Home Park Fungi Survey
27/11/2012**

**Species list and mini report
By Andy Overall**

Mycena flavoalba
Entoloma sericeum
Hygrocybe virginea
Hygrocybe ceracea
Clitocybe rivulosa
Hebeloma leucosarx
Lepista sordida
Lepista nuda
Tubaria hiemalis
Pleurotus ostreatus
Chlorophyllum rhacodes
Calocera cornea
Peziza repanda
Tubaria hiemalis
Clitocybe metachroa
Psathyrella spadiceogrisea
Pluteus cervinus
Bjerkandera adusta
Lycoperdon utriforme
Melanoleuca nivea
Mycena galericulata
Bolbitius titubans
Lepista nuda
Clitocybe fragrans
Agaricus campestris
Clavulinopsis fusiformis

Hygrocybe pratensis
Ampulloclitocybe clavipes
Rickenella fibula
Marasmius oreades
Auricularia auricula judae
Stereum ochraceum
Psathyrella pilluliformis
Hypholoma fasciculare
Mycena adscendens
Nectria cinnabarina
Bjerkandera adusta
Flammulina velutipes
Psathyrella spadiceogrisea
Psathyrella spadicea
Schizophyllum commune
Pleurotus ostreatus
Ascocoryne sarcoides
Coprinellus micaceus
Spongipellis delectans
Mycena haemotopus
Phlebia radiata
Panellus serotinus
Gymnopilus spectabilis
Stereum hirsutum
Hohenbuehelia atrocaerulea
Clitocybe geotropa
Hygrocybe quieta
Hygrocybe psittacina var. psittacina
Galerina vittiformis
Hygrocybe chlorophana

Entoloma sericeum
Mycena inclinata
Laccaria proxima
Clitocybe metachroa
Hebeloma fragilipes
Amanita rubescens

Despite a very wet visit following a wet preceding week, plenty of fungi were on display. Of note would be *Melanoleuca nivea* a very rare species, which I will have verified by Kew. This species in Britain is based on a drawing and has only one collection from Leicestershire. This would obviously be a new record for Middlesex. *Hygrocybe* were in full swing and dominated by the common *Hygrocybe virginea*, which occurred throughout the unimproved grassland compartments covered during this visit. Other *Hygrocybe* species recorded were all common, *H. ceracea*, *H. psittacina*, *H. chlorophana* along with the less common *H. quieta*. Another common species, *H. coccinea* was conspicuous by its absence. Dead wood left in situ along the Lime Ave of Kingston Avenue provided *Spongipellis delectans* a rarely recorded saprobe of dead wood.

Andy Overall

Appendix 3

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Appendix 3

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