

**Tree inspection and control of infestations of Oak Processionary Moth
Thaumetopoea processionea (Linnaeus) (Lepidoptera:
Thaumetopoeidae) (OPM) in London in 2009, and associated
collaborative work**

Client: Plant Health Service, Forestry Commission

October 2009

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EXECUTIVE SUMMARY

This report collates and summarises work carried out by Forestry Commission Plant Health Inspectors in 2009 to control and eradicate Oak Processionary Moth, a moth native to continental Europe, but not Great Britain, and a quarantine Pest under the Plant Health Order (2005). This is a continuation of work carried out in 2007 and 2008.

Infestation was measured by the number of larval or pupal nests found. The numbers of trees infested was also recorded. A grand total of approximately 2096 nests were found in the outbreak area. This compares to 506 in 2008, and 708 in 2007. In 2009, 1499 were found in Richmond Upon Thames (424 in 2008), 361 in Hounslow (13 in 2008), 214 in Ealing (53 in 2008), 15 in Brent (18 in 2008), 2 in Hammersmith & Fulham (0 in 2008), and 5 in the Royal Parks (Richmond Park) (0 in 2008).

The extent to which the fourfold increase is due to increased survey effort or a real increase in population size is unclear. The scale of the problem is, however, considerably worse than previously thought.

Given the problems associated with the work, infestations are likely to be at similar levels in 2010. Further spread can be expected as undetected, outlying populations increase in size and become evident, either through inspections, public health issues or publicity.

Control is resource-intensive, and greater resources are needed. The use of a vacuum technique at RBGK is encouraging. Feasibility of more extensive early preventative treatment with DiPel based on measures of infestation levels in the previous year should be investigated. For effective control, the limitations in our ability to reduce the numbers of OPM populations (given the factors listed in section 4) should be fully recognised and factored in.

Eradication might no longer be feasible, and future planning should shift towards control. In the meantime efforts should be increased in order to make the arboricultural industry, local and national government, health professionals and the public more aware of OPM. The recent probable importation of a tree carrying OPM to a site in Leeds shows that this should be carried out countrywide.

A single nest was found at St. James University Hospital, Leeds. The infested tree was planted recently, and this is considered to be unrelated to the London infestations. Investigations are ongoing as to the origin of this nest, and follow-up inspections will be made in 2010.

1. INTRODUCTION

1.1 Background

This report summarises the results of surveys for Oak Processionary Moth, a Quarantine Pest under the Plant Health (Forestry) Order (2005), carried out by Forestry Commission Plant Health Inspectors in 2009. The work is a continuation of that carried out in 2007 and 2008. The results of inspections in previous years, the discovery and circumstances of the arrival of the moth in Britain, and its life cycle, plant health and human health effects and distribution abroad, are described and documented in Townsend (2008 and 2009).

1.2 Remit

- Carry out site inspections for OPM larvae and larval nests in the London Boroughs known to be affected by OPM, namely Richmond Upon Thames, Hounslow, Ealing and Brent.
- Follow up reports of possible OPM from neighbouring boroughs and elsewhere in Great Britain, and extend inspections where appropriate.
- Manage and co-ordinate a team of surveyors working in the infested area.
- Work with landowners, their contractors and borough council staff to locate the pest, and oversee treatment. Provide those responsible for the work with Forestry Commission information and guidelines.
- Serve Notice under Article 31(4) of the Plant Health (Forestry) Order 2005 to landowners or their agents or managers, requiring the removal of the pest from their premises.

- Provide advice and disseminate information to interested parties.
- Liaise with the OPM Outbreak Management Team (OMT) and provide reports on progress and findings to the OMT.
- Forestry Commission staff carried out a programme of monitoring using pheromone traps, and the results of this are summarized in this report.

1.3 Aims

- Control the breeding population of OPM in London by surveying, by issuing Statutory Notice for control of the pest, and by liaising with and advising borough councils, thereby facilitating destruction of life stages of the moth where found.
- Provide information on development of the outbreak of OPM in London that will allow the relevant authorities to plan future control.
- Increase awareness of OPM and the problems it causes, to borough council staff, other authorities and the general public

1.4 National and EU Legislation

Following Plant Health Inspection surveys by the Forestry Commission in 2007 (Townsend, 2008) which resulted in the discovery of approximately 700 larval nests of OPM, a Pest Risk Analysis was produced by the Forestry Commission. This was used as supporting evidence for a formal request made to the European Commission to consider designating Great Britain as an EU 'protected zone'. This would create measures to prevent further accidental introductions, which the Forestry Commission considers necessary to

complement its pest management programme if eradication attempts are to succeed.

Pending a final decision by the EU, the Commission has put in place temporary emergency measures by amending the Plant Health (Forestry) Order 2005 ([SI2008/644](#)). These came into force on 31 March 2008, were amended on 1 April 2009, and require that all Oak trees coming from another EU Member State must be under 2 metres in height and have a plant passport confirming that the trees have been grown in a nursery where the moth is not present and which has been free of symptoms for the last complete growing season.

On 29th June 2009, the European Food Safety Authority (EFSA) published its scientific opinion and a web news story on the pest risk analysis provided by the UK for OPM. In its scientific opinion the panel agreed that the insect posed a potential risk to oak trees in southern areas of the UK and that it should be listed as a quarantine pest. On 23 September 2009 the EFSA presented its findings to the Standing Committee on Plant Health. European Commission proposals to respond to these findings are currently awaited.

(http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1211902621248.htm).

2. METHODS

2.1 Plant Health Inspector Team

Consultant Ecologist

Arboricultural and Ecological Consultants

Arboricultural and Ecological Consultants

Consultant Ecologist

Consultant Ecologist and Scientific Illustrator

2.2 Project Management

The work is overseen by the Head of the Plant Health Service, Forestry Commission, with support from the Operations Manager. The Ops manager

attended one site with the inspectors, met with the Notice recipient, and issued further notices to that site. The Plant Inspection Team report to the Outbreak Management Team (OMT), chaired by the Head of Plant Health and comprising representatives from borough councils, the Food & Environment Research Agency (Fera), the Health Protection Agency (HPA) and the Royal Botanic Gardens, Kew.

Sites and areas were allocated to inspectors at the outset using large-scale maps showing the affected boroughs. Inspectors kept in regular contact and flexibility was built in. Progress was regularly reviewed and inspectors re-deployed where necessary, for instance, due to the unavailability of the inspector with overall responsibility for a particular site. Also, new reports coming in meant that priorities sometimes changed rapidly. Forest Research staff filtered reports generated by their website and other publicity. Where there was a possibility that the report referred to OPM, it was followed up by email or telephone contact, and if OPM could then not be ruled out, a site visit was made.

2.3 Inspections by other OMT members and third parties

Surveys on public land were carried out by borough council staff or contractors, in collaboration with the inspectors. In Ealing these were carried out by Ealing Tree Service. In Richmond Upon Thames the Arboricultural Manager, Environmental Directorate, employed contractors for surveys, and was supported by the Senior Environmental Health Officer.

On rail land, trackside management companies carried out surveys for Transport for London (TfL). Metronet (Central Line) employed contractors to survey for signs of OPM. Tubelines employed their own contractors to survey on the Piccadilly Line. The Arboricultural Officer for the Royal Parks organised surveys by parks staff, in collaboration with the inspection team. Royal Botanic

Gardens Kew used their own tree climbers for nest removal. Independent ecologists surveyed trees on a Thames Water site.

2.4 Tree inspection methods

Tree inspections for groups of larvae and larval/pupal nests were carried out from April to August. Trees were scanned with the naked eye for signs of OPM. Good-quality binoculars and a telescope were used to scan high branches and confirm identity, and to provide digiscope images.

Numbers of nests, their approximate size, height and position in the tree and details of any larval activity were noted on recording forms. Any feeding damage seen was noted. The locations of infested oaks and other oaks on site (10-figure OS grid reference) were recorded using a hand-held GPS unit. Coordinates were collated in order to guide surveys in future years. All surveys

on private land were carried out with the permission of the landowner or occupier.

2.5 Use of the Plant Health (Forestry) Order 2005

Where the presence of OPM was confirmed by an inspector, the landowners or their site managers, lease-holders or occupiers were served with a Notice under Article 31(4) of the Plant Health (Forestry) Order 2005 (PHO) requiring destruction and safe disposal of the pest, within a suitable time frame appropriate to the life cycle of the moth. A copy of the Forestry Commission document, *Survey and intervention in relation to different phases of the oak processionary moth life cycle*,

([http://www.forestresearch.gov.uk/pdf/opmcontrolopt.pdf/\\$FILE/opmcontrolopt.pdf](http://www.forestresearch.gov.uk/pdf/opmcontrolopt.pdf/$FILE/opmcontrolopt.pdf)) was provided to those responsible for carrying out the control measures required under the Statutory Notice. Advice was also provided verbally and by email, on a case-by-case basis. The document includes advice on PPE, but this does not constitute a Risk Assessment, which is the responsibility of those operators employed to implement control.

Where possible (and felt by the attending inspector(s) to be reasonable in terms of resources) and appropriate, treatment (spraying of larvae or nest removal) was supervised by an inspector and advice was provided to contractors. Plant Health Inspectors have statutory powers of entry, but there were no cases where it was necessary for these to be used. Statutory Notice was not issued against borough councils, some of whom initiated their own survey and control measures (see sections 2.3 and results, section 3.2.1).

2.6 Dissemination of information

Press releases have been made regularly by the Forestry Commission following the discovery of OPM in London, and a further announcement to local and national media was made in May 2009. In addition, a new request for sightings was made in June 2009. Information is available on the Forest Research

website. Plant Health Inspectors handed out Forestry Commission information leaflets in the field, to site managers and interested members of the public. Several articles have appeared in local and national press, and in horticultural and environmental magazines.

The Borough Councils disseminated information through channels including local media, The London Tree Officers' Association, and by email to on-site council staff (e.g. schools). Hounslow distributed leaflets to households in the affected area. The HPA continued to work in close collaboration with local authorities and other agencies focusing on public and professional awareness, to ensure that residents and visitors were supplied with consistent, accurate information. The HPA wrote to local GPs and dermatologists in affected areas and used articles, presentations and web-based information on TOXBASE to reach a wider audience of health professionals.

2.7 Monitoring by pheromone trapping

2.7.1 Forest Research

Forest Research carried out pheromone trapping on a grid across London, and provided traps for individual sites, including Buckingham Palace Gardens and Richmond Park.

2.7.2 Royal Botanic Gardens, Kew (RBGK)

Thirteen traps were deployed by RBGK from 17th July to 27th August. The traps used were a mixture of the bucket and delta types.

3. RESULTS

3.1 Overall summary

Table 1. Summary of overall results for London in terms of numbers of nests/larval clusters since 2007, by borough and selected individual sites (with large populations). Numbers of trees infested in 2009 are also given.

Borough	Nests 2007	Nests 2008	Nests 2009
Richmond upon Thames	171	424	1,499
Hounslow	3	13	361
Hammersmith & Fulham	0	0	2
Ealing	458	53	214
Brent	76	18	15
Richmond upon Thames	50	25	70
	5	29	500***
Richmond upon Thames	100	295	600
Richmond upon Thames	2	9	52
Richmond upon Thames	9	23	35
Petersham Meadows, Richmond	+ *	13	43
Petersham Common, Richmond	0	0	26
Barnes Common, Richmond	0	0**	28
Royal Parks (Richmond Park)	0	0	5
Piccadilly Line, Ealing	117	10	c.100
Network Rail, Ealing	180	9	34
Central Line, Ealing	139	17	33
Brent	8	9	12
Hounslow	0	6	116
Syon Park, Hounslow	3	4	105
Chiswick	0**	0**	49 ¹

* old nests were found in 2008

** not surveyed

*** estimate – nest removal ongoing

¹ 4 trees

The distribution and density of infestations in 2009 is represented in figure 8.

The majority of nests were removed or the larvae removed or sprayed. In most cases this was carried out before the main flight period and within the

time limit given in a Statutory Notice (where applicable). A small number of nests remained at sites in Ealing and the border with Brent.

3.2 Summary of results and actions at infestation sites, by site (sites positive for OPM in 2009)

3.2.1 Richmond Upon Thames Borough

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 14 th April
Date occupier notified: 15 th April
Date and number of Notice under Plant Health Order: 16 th April 2009 UK/PH/MT/17042009
Final total of trees found to be infested: 45
Final approximate total of larval clusters: 70
Date(s) and type(s) of treatment: 1 st May, 6 th May – all trees on site sprayed with DiPel
Inspector(s) in attendance: 1 st May, 6 th May (also a rep from Richmond Upon Thames BC)
Disposal of material: cuttings from shrubs cleared near the infested trees were left on site to be chipped. Site manager was instructed to ensure that all was chipped on-site.

Summary: The estate was considered to be the importation site for the Richmond/Hounslow population, and was first found infested in 2006, when surveyors for Thames Water plc made a rough estimate of a population of 10,000 larvae. Control measures by contractors for the site managers were ineffective, and many moths emerged. In 2007, 50 clusters of larvae were seen, and 25 in 2008. From 2007 onwards, only 2 pupal nests have been found, these being old nests hidden among bamboo near tree bases in 2008 during clearance operations. In 2009 a total of 70 larval clusters on 45 trees were found and sprayed (*Q. robur* f. *fastigiata*).

Brief Description of Site: semi-mature Cypress Oaks in a housing estate outside the boundary of a Thames Water plc biotane plant. Most planted in a

line or hedge. Small (2-4m) English oaks in planted shrubberies forming landscaping nearby.

Further details: site where OPM first found in Richmond in 2006. Treated in 2007 and 2008, when 25 clusters of larvae were found. Six clusters of first-instar larvae were found on 14th April 2009 at heights of 1-2m, and 49 were located on 1st May during the first treatment. The majority were found 1-3m from the apex of the tree. Concern was expressed that the lances being used by the contractors for spraying were not effectively reaching the tops of the trees. Observations with binoculars suggested that the top 2m were not wet. They recommended that a second treatment should be undertaken as soon as possible using an MEWP. This was carried out on 6th May, when a further 5 larval clusters were found. No larvae were found in the shrubbery. During a follow-up visit on 2nd June and could find no signs of OPM. On 27th July two pheromone traps were placed at the site and inspected the trees in the northwest corner, where bamboo had not previously been effectively cleared. No signs of OPM were found in the newly cleared areas. Pheromone traps are due to be collected in October 2009. No nests from previous years were found, whereas in 2008 2 old nests were found during clearance of vegetation around the bases of the trees in the northwest corner, hidden by the bamboo. The Notice required that no cut material should be removed from the site in case of the presence of early stages of OPM. On 30th July the cut material (which did not include oak) was ordered to be chipped before removal.

Site:**Borough:** Richmond Upon Thames

Date OPM confirmed by inspection: 26 th May Date occupier notified: 26 th May
Date and number of Notice under Plant Health Order: UK/PH/RP21072009, UK/PH/IB/21082009
Final total of trees found to be infested: Final approximate total of nests/larval clusters removed: 500
Date(s) and type(s) of treatment: 28 th May spot-spray of larval clusters with Deltamethrin and removal of 12 groups of nesting larvae. Nest removals (totals in parentheses) on 27 th July (48), 29 th July (18), 25 th August (72), 26 th August (100), 27 th August (76), 10 th September (48) 11 th September (64). 38 nests were removed on 14 th August.
Inspector(s) in attendance: 28 th May
Disposal of material:

Summary: first found infested in 2007, when 4 nests were found. In 2008 roughly 30 larval clusters were found and sprayed on c.20 trees - *Q. robur*, *Q. cerris*, and probably other species or hybrids). To date (2009), 474 nests have been found and as nest removal is ongoing, the estimated total is 500. A large number of moths undoubtedly emerged from nests at this site. Although the initial Notices may eventually have been complied with, moth emergence was already under way. There were several factors causing this situation to arise. After an initial rapid response, those responsible for ensuring that the work required by the Notice was undertaken in the time frame necessary for control to be effective, were reluctant to do so, and persistently attempted to distract inspectors and (their own) contractors. Sufficient funds were not provided to allow the contractors to carry out a more thorough job, and funds were not provided promptly enough to prevent a mass emergence.

The inevitable consequence is that numbers of OPM larvae and nests will be equal or greater on the site in 2009.

Site: King's Observatory

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 26 th June
Date occupier notified: 26 th June
Date and number of Notice under Plant Health Order: none issued
Final total of trees found to be infested: 4
Final approximate total of nests/larval clusters: 10
Date(s) and type(s) of treatment: nest removal in early August
Inspector(s) in attendance: none
Disposal of material:

Summary: first inspected and found to be infested in 2009. 4 trees, 10 nests.

Brief Description of Site: formal grounds of historic building used as offices.

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 5 th June, 25 th July , 4 th August, 13 th August
Date occupier notified: 8 th June
Date and number of Notice under Plant Health Order: 28 th July 2009, UK/PH/MT280720091
Final total of trees found to be infested: 18
Final approximate total of nests/larval clusters: 52
Date(s) and type(s) of treatment: manual nest removal, including use of MEWP.
Inspector(s) in attendance: 13 th August, 19 th , 20 th and 24 th August
Disposal of material:

Summary: first found infested in 2007 (2 nests), 9 in 2008. 52 nests in 18 trees in 2009. Numbers can be expected to be higher in 2010 due to removal of nests after adult emergence had commenced.

Brief Description of Site: sports ground with rugby and cricket pitches and tennis courts. Infested oaks in and around parking areas close to club and offices, and scattered elsewhere around boundary of site.

Further details: Visited the site on 5th June and found 23 clusters of larvae on 15 trees. Manager informed on 8th June. Notice was issued on 28th July. In the

interim the manager was informed that Notice would be served if no action were taken to remove the pest, and that if the larvae or nests were not removed in time for emergence of the moth, then the problem would be greater in subsequent years.

Inspector visited on 4th August and found the nests listed in the Notice were still present. On 7th August the manager was notified by letter that if the work was not carried out by 13th August, the Forestry Commission may employ contractors and recover the costs. Inspector visited on 13th August and found the nests still in place. He removed all the nests that could be reached without working at height, thereby demonstrating to the on-site handyman the technique involved. Most of the remaining nests were removed by the handyman on 19th and 20th August, working from a MEWP. During the work, the left sleeve of the handyman's suit became torn. Inspection team advised him against continuing to work. As a consequence, he subsequently informed the inspector that he had suffered a serious rash on the arm, which prevented him from sleeping for two nights. Some nests were not accessible with a MEWP and under instruction from the inspector, contractors with qualified tree climbers were appointed and completed nest removal on 24th August.

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 21 st May (previously confirmed by staff on 17 th April)
Date occupier notified: 11 th June 2009
Date and number of Notice under Plant Health Order: 29 th April 2009, UK/PH/MT/29042009
Final total of trees found to be infested: 206
Final approximate total of nests/larval clusters: 600
Date(s) and type(s) of treatment: blanket spraying of trees with DiPel and nest removal, ongoing from late April until July. Nest removal, including use of a vacuum technique.
Inspector(s) in attendance: Yes (spraying, 28 th May 2009)
Disposal of material: incinerated at on-site licensed incinerator

Summary: first found infested in 2006 (nests in September). 100 nests found in 2007, 300 in 2008. First instar larvae found by staff using a MEWP on 17th

April 2009. Pheromone trapping was carried out (sections 2.7 and 3.4) and 133 males were caught.

Brief Description of Site: large botanical garden, with thousands of specimen trees in a formal parkland setting, and semi-natural wooded areas.

Further details: The initial identification of first-instar larvae was made by staff on 17th April, prompted by the discovery of first-instar larvae at a neighbouring site on 14th April. In a short inspection on 21st May, inspectors recorded evidence of larvae on 7 trees. Contractors were employed to carry out blanket spraying in late May, using a long hose and high-power jet system to reach the tops of large trees. This was witnessed in action by inspectors on 28th May (see figure 1). As can be seen from the photographs, this equipment was able to reach the crowns of large specimens. Subsequently, the site owners purchased a vacuum system for removal of nests. This was demonstrated to Forest Research staff for appraisal, and approved for use by the Forestry Commission. The system purchased comprises an industrial CFM 137/60 H-class vacuum unit fitted with HEPA filters and powered by two or three 1kW motors (8200 litres per minute). Material sucked into the unit (capacity 60 litres) is retained in an internal bag that is automatically sealed when the unit is opened. Two units have been purchased, one using two motors and one using three. Approximately 185 hours of staff time were taken up in 2009 at RBGK in OPM control work. This does not include pheromone trap monitoring (20 hours), Press Office (72) and Visitor Services (20 hours).

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 24/07/09
Date occupier notified: 24/07/09
Date and number of Notice under Plant Health Order: UK/PH/RP250709/09
Final total of trees found to be infested: 4
Final approximate total of nests: 15
Date(s) and type(s) of treatment: manual nest removal 03/08/09 and 08/08/09
Inspector(s) in attendance: Yes
Disposal of material: nests incinerated

Summary: first inspected and found to be infested in 2009.

Brief Description of Site: sports ground with mature oaks in grassy areas around boundaries.

Further details: nest removal was initially undertaken without a Forestry Commission inspector being present. During a follow-up inspection on 4th August two nests were found. The contractor returned to remove these nests on 8th August.

Richmond Upon Thames Borough Council Sites: tree inspections were made by contractors on a weekly basis from late May until late August, starting 28th May with the final inspection on 24th August. The Forestry Commission inspector covering Richmond was kept regularly informed of results by the contractors. Some trees at one site were sprayed with DiPel early in the larval season, as a feasibility study.

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 28 th May
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 32 Final approximate total of nests/larval clusters: 35 logged by surveyors. 46 nests found and removed by 19 th June, and 3 old nests removed.
Date(s) and type(s) of treatment: manual removal of nests
Inspector(s) in attendance: none
Disposal of material: nests incinerated

Summary: First found infested in 2007 (9 nests) and 23 in 2008. 35 recorded in 2009, on 32 trees.

Brief Description of Site: Open parkland with well-spaced, mature and semi-mature trees. Bisected by a major road. Some trees are in the council car park. Others are close to tennis courts.

Further details: Nests in all years have been found in the eastern and southern parts of the park (including the car park) where oaks are

concentrated. Nests were only found in the group of trees in the central area in 2009.

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 17 th July
Date occupier notified: July 2009
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1 Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment: manual nest removal
Inspector(s) in attendance: none
Disposal of material: nests incinerated

Summary: first inspected in 2008. First found to be infested in 2009. Two trees, 1 nest.

Brief Description of Site: Allotments adjacent to the southern edge of Old Deer Park. Two large oaks present.

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 15 th June
Date occupier notified: 15 th June 2009
Date and number of Notice under Plant Health Order: none issued
Final total of trees found to be infested: 1 Final total of nests/larval clusters removed: 2 or 3
Date(s) and type(s) of treatment: manual nest removal
Inspector(s) in attendance: none
Disposal of material: nests incinerated

Summary: first surveyed and found to be infested in 2009, following a report from the resident, who recognised the nests, having visited Kew Gardens, where she had seen notices warning about OPM.

Brief Description of Site: small urban garden with 6m high, semi-mature English Oak.

Further details: The tree is small, and all of the nests were within reach, including one between the back of a plastic seat and the tree itself. 3 nests, were recorded by an FC inspector, although contractors only recorded two.

Site:

Borough: Richmond Upon Thames

Date OPM confirmed by inspection: 2 nd June
Date occupier notified: 3 rd June
Date and number of Notice under Plant Health Order: none issued
Final total of trees found to be infested: 5
Final approximate total of nests/larval clusters: 43
Date(s) and type(s) of treatment: 13 th June
Inspector(s) in attendance: none
Disposal of material: incinerated

Summary: first surveyed and found to be infested in 2008, when 13 nests were found, including some from 2007. The site was only discovered in August 2008, when the moths were flying. In 2009, with 43 nests on only 5 trees, the infestations were heavy. Feeding damage was visible on some trees. In 2009 control was implemented roughly 6 weeks before the flight period.

Brief Description of Site: line of 5 large, semi-mature trees in a low-lying meadow beside a plant nursery car park.

Further details: following a report of nests at this site on 4th August 2008, inspectors surveyed the area and the nests were removed. The discovery was made during the flight period of OPM. On 2nd June 2009 the larvae were large and were either forming nests or sheltering under a thin veil of silk, probably in order for moulting to take place. The infestations were some of the heaviest yet seen. One tree held 22 nests, and many nests and clusters were large (with perhaps 200-300 larvae in each, translating to 4-5,000 in total).

Site:**Borough:** Richmond Upon Thames

Date OPM confirmed by inspection: 2 nd June
Date occupier notified: 2 nd June
Date and number of Notice under Plant Health Order: none issued
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 14
Date(s) and type(s) of treatment: 4 th June 2009 manual removal of larvae/nests, also in July
Inspector(s) in attendance: none
Disposal of material: incinerated

Summary: first found infested in 2008 (the tree beside the swimming pool). Two trees present, one heavily infested with 11 large groups of larvae, the other with 2 smaller groups. 3 nests found later.

Brief Description of Site: grounds of a large, private residence. One semi-mature tree beside swimming pool, one in a hedge along the boundary. Other trees in hedge along eastern boundary.

Further details: initially the tree by the swimming pool was heavily infested. It held 11 large larval groups, sheltering under a thin veil of silk. Some of these groups were over 30cm in diameter (see figure 2), and this tree alone probably held 1-2,000 larvae. An inspector re-inspected on 22nd July, found 3 nests on the tree beside the swimming pool and arranged for their removal.

Site:**Borough:** Richmond Upon Thames

Date OPM confirmed by inspection: 20/06/09
Date occupier notified: 04/06/09
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 8
Date(s) and type(s) of treatment: manual nest removal 05/06/09 and again in July
Inspector(s) in attendance: No
Disposal of material: nests incinerated

Summary: first found to be infested in August 2008. In 2009, the same tree held 8 larval clusters.

Brief Description of Site: formal gardens surrounding Ham House, a National Trust property. The infested tree is a mature *Q. robur* in the northeast corner of the lawn to the rear of the house.

Further details: this tree was first inspected on 18/08/08 and the two nests found were removed two days later. The initial discovery in 2009 was made by National Trust staff. Inspector visited on 05/06/09, but the contractor had already removed the clusters. TF inspected again on 20/06/09 and found one nest. The infestation in 2009 is consistent with re-infestation from adults that emerged prior to nest removal in 2008.

Site:

Borough: Richmond upon Thames

Date OPM confirmed by inspection: 11/06/09
Date occupier notified: 11/06/09
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 2
Date(s) and type(s) of treatment: manual removal of nests in June
Inspector(s) in attendance:
Disposal of material:

Summary: tree first found to be infested in August 2008 (RP, NL).

Brief Description of Site: the infested tree is a tall, mature *Q. cerris* in the grounds of the German School, near River Thames and the Sea Scouts' Hut.

Further details: inspected on 6th August and found that the nests had been removed. The 2009 infestation is consistent with re-infestation from adults that emerged prior to nest removal in 2008.

Site: Marble Hill Park

Borough: Richmond upon Thames

Date OPM confirmed by inspection: 26 th June
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 18
Date(s) and type(s) of treatment: manual removal of nests before 20 th July.
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2008, when the inspector found 2 nests in a large *Q. cerris* in open parkland on 15th August. Three more were found during nest removal a few days later. In 2009, 8 nests were found on the same tree, with a further nest on a *Q. cerris* in the car park at the eastern end of the park.

Brief Description of Site: open public parkland. A number of mature oaks, mainly *Q. robur* and *Q. cerris*, scattered throughout the park with several around the carpark.

Site: Kew Road

Borough Richmond upon Thames

Date OPM confirmed by inspection: 28 th May
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 10, plus 2 old nests
Date(s) and type(s) of treatment: manual nest removal, May and June 2009
Inspector(s) in attendance: none
Disposal of material: nests incinerated at RBGK

Summary: first found to be infested in 2008 (4 nests). 12, including 2 old nests, in 2009.

Brief Description of Site: mature *Q. cerris* on roadside along Kew Road opposite the Victoria Gate entrance to RBGK.

Further Details: 9 nests logged by surveyors. 10 nests and 2 old nests removed to 19th June.

Site: Petersham Common

Borough: Richmond upon Thames

Occupier/person in charge and position: Richmond upon Thames Borough Council
Main contact:
Inspector(s) dealing:
Date OPM confirmed by inspection: 1 st June
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 26
Final approximate total of nests/larval clusters: 36
Date(s) and type(s) of treatment: manual removal of nests June 200
Company/personnel used:
Inspector(s) in attendance: none
Disposal of material: nests incinerated

Summary: no nests in 2007 or 2008, but some on roadside trees in area.

Brief Description of Site: large area of common land, comprising grassland with well-spaced trees and extensive wooded areas.

Further details: 35 nests logged by surveyors, 36 removed to 19th June.

Site: North Sheen Recreation Ground

Borough: Richmond upon Thames

Date OPM confirmed by inspection: 10 th June
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment: manual nest removal 16 th June
Inspector(s) in attendance: none
Disposal of material: nests incinerated

Summary: surveyed in previous years, but first found to be infested in 2009. (1 tree with 1 nest).

Brief Description of Site: several large oaks, including some close to a children's play area.

Site: River Thames towpath Richmond Lock to Kew Bridge

Borough: Richmond upon Thames

Date OPM confirmed by inspection: 20 th July
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 2
Date(s) and type(s) of treatment: manual nest removal (date N/R)
Inspector(s) in attendance: none
Disposal of material: nests incinerated at RBGK

Summary: surveyed with negative results in previous years. 2 trees, well separated, 2 nests.

Brief Description of Site: river towpath with planted trees.

Site: Ham Common Woods

Borough Richmond upon Thames

Date OPM confirmed by inspection: 10 th August
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 3
Date(s) and type(s) of treatment: manual nest removal (subject to confirmation)
Inspector(s) in attendance: none
Disposal of material: nests incinerated at RBGK

Summary: first found to be infested in 2009. Not surveyed in previous years. Two trees, 3 nests.

Brief Description of Site: woodland on common land dominated by *Q. robur*.

Site: Barnes Common

Borough Richmond upon Thames

Date OPM confirmed by inspection: 3 rd July
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 28
Final approximate total of nests/larval clusters: 55
Date(s) and type(s) of treatment: to be confirmed
Inspector(s) in attendance: none
Disposal of material: to be confirmed

Summary: surveyed with negative results in 2007, but not surveyed in 2008.

In 2009, 27 trees affected and 54 nests found.

Brief Description of Site: extensive area of common land and roadside trees, with wooded areas, and grassland with scattered trees including abundant oak, mainly *Q. robur*.

Further details: site was surveyed on several days between 3rd and 24th July. The majority of nests were found on the early visits. Infestations included a Turkey oak with 12+ nests, and were extensive across the area.

Site: North Sheen Cemetery

Borough: Hammersmith & Fulham*

Date OPM confirmed by inspection: 22 nd June
Date occupier notified: 22 nd June
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 7
Final total of nests/larval clusters: 10
Date(s) and type(s) of treatment: manual removal of nests (subject to confirmation)
Inspector(s) in attendance: none
Disposal of material:

Summary: first found infested in 2006 (remains of a small nest). Three nests in 2007, 6 in 2008. Seven trees and 10 nests in 2009.

Brief description of site: *within Richmond upon Thames Borough, but under the jurisdiction of Hammersmith & Fulham. Two long lines of semi-mature *Q. robur* along central aisle. No other oaks on site.

Further details: nests have been restricted to one area in all years, the eastern section of the lines of oaks, and have generally been small. Inspected again on 20th June. In follow-up inspections nests were found on 24th July. Both removed before further inspection on 6th August.

3.2.2 Hounslow

Site: Worton Hall Industrial Estate

Borough: Hounslow

Date OPM confirmed by inspection: 01/07/09
Date occupier notified: 04/07/09
Date and number of Notice under Plant Health Order: UK/PH/RP04072009/04
Final total of trees found to be infested: 1 Final total of nests/larval clusters found: 22
Date(s) and type(s) of treatment: Manual pupal nest removal 23/07/09
Inspector in attendance: Yes
Disposal of material: nests incinerated

Summary: first found infested in 2008. In 2009, 22 nests found and removed.

Brief Description of Site: a tall mature *Q. cerris* in grassy area at the centre of an industrial estate.

Further details: this tree was first inspected in early spring 2008, and no nests were found. It was inspected again on 8th August 2008, when at least two nests were found. Subsequent nest removal was not monitored by Forestry Commission inspectors, and was not carried out until 2nd October.

Site: Isleworth

Borough: Hounslow

Date OPM confirmed by inspection: 30/05/09
Date occupier notified: 30/05/09
Date and number of Notice under Plant Health Order: UK/PH/RP04072009/01
Final total of trees found to be infested: 1 Final total of nests/larval clusters found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 06/07/09
Inspector in attendance: Yes
Disposal of material: nest incinerated on site with a MAPP gas burner

Summary: first found to be infested in 2009, when one pupal nest was removed. Inspected in 2007 and by NL/RP in 2008, but no evidence of OPM was found.

Brief Description of Site: mature *Q. robur* hybrid >20m in height. A retained tree in a relatively new development on the north bank of the Thames.

Further details: an outlier, which is close to Syon Park. Two clusters of larvae were observed during the inspection of 30/05/09. Subsequently, only one pupal nest could be found in the tree by aerial search. It is possible that the two groups of larvae joined together to form one pupal nest.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 01/07/09
Date occupier notified: 04/07/09
Date and number of Notice under Plant Health Order: UK/PH/RP04072009/03
Final total of trees found to be infested: 1 Final total of nests/larval clusters found: 2
Date(s) and type(s) of treatment: Manual pupal nest removal 14/07/09
Inspector in attendance: Yes
Disposal of material: nests incinerated

Summary: first found to be infested in 2009 and two pupal nests were removed. Inspected in 2007 and 2008, but no evidence of OPM was found.

Brief Description of Site: Two semi-mature *Q. robur*.

Site: Syon Park

Borough: Hounslow

Date OPM confirmed by inspection: 19/05/09
Date occupier notified: 19/05/09
Date and number of Notice under Plant Health Order: UK/PH/RP/04072009/05
Final total of trees found to be infested: 30
Final total of nests/larval clusters found: 105
Date(s) and type(s) of treatment: spot sprayed with Deltamethrin 21/05/09 and manual pupal nest removal to 22/07/09
Inspector in attendance: Yes. Various dates from 21/05/09 to 22/07/09
Disposal of material: nests incinerated

Summary: first found to be infested in 2007 (3 nests), and 4 in 2008. In 2009, 105 larval clusters/nests were found. A total of 95 pupal nests were removed.

Brief Description of Site: grounds of Syon House on the north bank of the River Thames. Formal gardens and a conservation area with an arboretum of specimen and unusual trees, areas of parkland and water meadow. There is a "yard" area at the north east of the site that was not discovered by inspectors in 2007 or 2008. Four trees containing old nests were found in this area in 2009.

Further details: staff reported a single nest found on 15th May. Inspector confirmed presence on 19th May. Ten larval clusters were sprayed on 21/05/09. However, given the heights and conditions of the veteran tree stock at this site, the risk assessments determined that a MEWP should be used. It was agreed that on grounds of safety and cost effectiveness that Deltamethrin treatment would be stopped and control undertaken by pupal nest removal. 95 pupal nests were removed between 13/07/09 and 22/07/09. *Quercus robur*, *Q. cerris*, *Q. canariensis*, *Q. frainetto*, *Q. dentata*, *Q. xhispanica*, *Q. "turneri"*, *Q. "fulhamensis"* were found to be infested.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 01/07/09
Date occupier notified: 04/07/09
Date and number of Notice under Plant Health Order: UK/PH/RP04072009/02
Final total of trees found to be infested: 3
Final total of nests/larval clusters found: 3
Date(s) and type(s) of treatment: Manual pupal nest removal 21/07/09?
Inspector in attendance:
Disposal of material: not known

Summary: first found to be infested in 2009, when three pupal nests were found and removed.

Brief Description of Site: a private estate.

Further details: The infested tree is a *Q. robur* hybrid which contained nests from 2008. It is not known what became of the pupal nests, but the Statutory Notice specified incineration.

Site: Woodbridge Park Education Service

Borough: Hounslow

Date OPM confirmed by inspection: 13/07/09
Date occupier notified: 13/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 07/08/09
Inspector in attendance: Yes
Disposal of material: nests incinerated at RBGK

Summary: first found to be infested in 2009, when one pupal nest was found and removed.

Brief Description of Site: semi-mature *Q. robur* in school grounds adjacent to the northwest corner of Syon Park, southeast of the London Road / Twickenham Road crossroads. Several large *Q. ilex* on the site were not found to be infested.

Further details: site manager suspected that there was an OPM nest in the tree, and contacted Forest Research. Inspector confirmed the presence of OPM.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 28/05/09
Date occupier notified: 28/05/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final total of nests/larval clusters found: 14
Date(s) and type(s) of treatment: larvae removed with weed burner
Inspector in attendance: Yes
Disposal of material: larvae incinerated at safe location on site

Summary: first found to be infested on 08/08/08. However, this nest was not removed until 2009. In 2009, inspectors found two trees infested with a total of 14 clusters of larvae, which were burnt off in situ.

Brief Description of Site: The first infested tree was the semi-mature *Q. robur* on the north side of the infants' playground that contained last year's nest. The other tree was a taller semi-mature *Q. robur* on the northern boundary of the site, overhanging the railway. There are other, smaller trees planted in the hedge around the school site.

Further details: in the knowledge that there was still an old nest on site (confirmed from site visit), an inspector made arrangements to access and survey during the school holiday on 28/05/09. On meeting with the site manager, the inspector was informed that LB Hounslow's contractor had already visited the site and removed three "nests" from the playground tree. However, this tree was found to contain another eight clusters of larvae together with an old nest. The following day, an inspector had a site meeting with a contractor, who had indeed removed three clusters of larvae from the playground tree a few days earlier. Unfortunately, the contractor was not

available until the following week to remove the remaining larvae, therefore the inspector advised the school to close this playground until the tree had been made safe.

Given the proximity of this tree to the playground, it was the inspector's opinion that the risk assessment precluded the use of Deltamethrin. The larvae were therefore burnt off with a weed burner into a strong plastic bag.

Site: Street tree, Syon Lane

Borough: Hounslow

Date OPM confirmed by inspection: 05/07/09
Date occupier notified: 05/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 14/07/09
Inspector in attendance: No
Disposal of material: nests incinerated at RBGK

Summary: first found infested in 2009, when one nest found and removed.

Brief Description of Site: over-mature *Q. robur* situated between the road and the pavement very close to the Tesco superstore roundabout.

Further details: first inspected in 2008, when no infestation was found. An outlier and the furthest northwest infestation found in Hounslow.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 27/05/09
Date occupier notified: 27/05/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 12
Date(s) and type(s) of treatment: Spot treatment with Deltamethrin on 27/05/09 and manual nest removal 06/07/09
Inspector in attendance: Yes
Disposal of material: nests incinerated at RBGK

Summary: first inspected in 2007 and again in 2008, when three inspectors did not find any nests. First found to be infested in 2009, when eight clusters of larvae were treated with Deltamethrin and four pupal nests were removed.

Brief Description of Site: semi-mature *Q. robur* in the front garden.

Further details: an old nest was found on 27/05/09. On 27/05/09 a total of seven larval clusters were found, one at about 1 metre above ground level. It was the inspector's opinion that these larvae posed an imminent danger to the tenant's family and to the public, therefore he treated the larvae immediately, acting on his own initiative. The tree was inspected one week later and dead larvae were still attached to the tree. The inspector burnt these off using a butane/propane "weed burner". It was also noted that there was a group of larvae on the ground at the base of the tree, which had lost motor control, one of the first symptoms of Deltamethrin poisoning. It was concluded that these larvae had processed across the Deltamethrin residue from the treatment a week earlier and had had sufficient contact with the pesticide to kill them. On subsequent re-inspection, four pupal nests were found. These were removed by a contractor.

Site:
Borough: Hounslow

Date OPM confirmed by inspection: 22/06/09
Date occupier notified: 22/06/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 23/06/09
Inspector in attendance: Yes
Disposal of material: nest incinerated on site with a MAPP gas burner

Summary: the park was first inspected in 2007 by MT (0 nests). In 2008, inspectors found one nest in a mature *Q. cerris* near to the southwest boundary of the site. In 2009 one nest was found and removed.

Brief Description of Site: Parkland consisting of sports fields with a variety and succession of tree species from veteran to new plantings. The infested tree was a semi-mature *Q. robur* in the children's play area.

Further details: This is the most northerly infested tree in Hounslow and is a further 500 metres north-northeast of last year's tree. The tree is about 790 metres northeast of the Crowther Avenue tree, where a nest escaped detection in 2008.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 21/07/09
Date occupier notified: 21/07/09
Date / No. of Notice under Plant Health Order: UK/PH/RP21072009/07
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 31/07/2009
Inspector in attendance: Yes
Disposal of material: nests incinerated at RBGK

Summary: first found to be infested in 2009, when one pupal nest was found and removed.

Brief Description of Site: a mature *Q. robur* growing in the walled garden.

Further details: there was no answer when the inspector tried to make contact with the owner, therefore Statutory Notice was served on the occupier and hand delivered to the property's letterbox. The inspector supplied a list of contractors to the executors of the estate.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 21/07/09
Date occupier notified: 21/07/09
Date and number of Notice under Plant Health Order: UK/PH/RP21072009/06
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 4
Date(s) and type(s) of treatment: Manual pupal nest removal 31/07/09
Inspector in attendance: Yes
Disposal of material: nests incinerated

Summary: first found to be infested in 2009, when 4 pupal nests were removed. This tree was not inspected in previous years, and was found to contain one old nest.

Brief Description of Site: a semi-mature *Q. robur* in the front garden of the property. The site was being developed when the inspection was undertaken, with a new building nearing completion.

Further details: the presence of an old nest with a relatively low number of nests in 2009 indicates that this tree was first infested in 2008. Had infestation occurred in 2007, nest numbers would have been higher.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 21/07/09
Date occupier notified: 21/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 31/07/09

Summary: first found to be infested in 2009, when one pupal nest was found and removed.

Brief Description of Site: the infested tree is a mature *Q. ilex* in the front garden of a terrace.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 30/07/09
Date occupier notified: 01/08/09
Date and number of Notice under Plant Health Order: UK/PH/RP/31072009/10
Final total of trees found to be infested: 3
Final total of nests/larval clusters found: 3
Date(s) and type(s) of treatment: Manual pupal nest removal 01/08/09
Inspector in attendance: N/A
Disposal of material: nests incinerated on site with a MAPP gas burner

Summary: first found to be infested in 2009. In 2009, 3 pupal nests were found and removed.

Brief Description of Site: The trees are located in a conservation planting between the hockey pitch, the neighbouring pitch-and-putt course and the rugby playing fields. A mixture of native species, including *Q. robur*, and the trees are still early-mature, stake and ties being still present.

Further details: inspected in 2008 and found no evidence of OPM. Inspected the site on 30/07/09 and found three small nests, one of which was no more than 60cm above ground level. Statutory Notice was served on 01/08/09. As there was no-one present to receive the Notice, it was left attached to the clubhouse door.

Due to the proximity of the nests to the ground and the constant public access to the site, the inspector decided that the nests were an imminent danger to the public and therefore removed them personally, acting in a private capacity. Several weeks later, the inspector was contacted by the club secretary to discuss the Statutory Notice. He stated that the that the trees were probably

owned by the local authority. In future, clarification that responsibility for complying with Notices rests with the “occupier or other person in charge of premises” will be given: ownership is not an issue.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 02/06/09
Date occupier notified: 02/06/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 35
Final total of nests/larval clusters found: 116
Date(s) and type(s) of treatment: Spot spraying with Deltamethrin 12/06/09 and manual nest removal to 27/07/09
Inspector in attendance: Yes, various dates from 02/06/09 to 27/07/09
Disposal of material: nests incinerated

Summary: first found to be infested in 2008 (6 nests). The site was inspected in 2007, but the inspector did not find any nests. It was postulated in the 2008 report that nests may have been overlooked in 2007, given the large number of large mature trees, many *Q. robur* with dense canopy. In 2009, a total of 116 larval clusters/nests were found and 112 pupal nests were removed.

Brief Description of Site: The House is situated within formal gardens, currently being restored to their original landscaping. The site holds a variety and succession of Oaks, including veteran trees and new plantings. The gardens are open to the public during the day and the resource is in great demand, particularly with dog walkers.

Further details: in 2009, a further 7 nests from last year were located in six trees. Two of these trees were infested in 2008, and it is possible that the nests were missed by the removal contractors. In three trees, the old nests had been concealed by Ivy. All of the trees with last year’s nests had multiple infestations this year, ranging from 2 to 21 nests with a mean of 8.8 nests. Several larval clusters were found on 12/06/09, which posed an imminent hazard to the public. These were spot treated with Deltamethrin, and the larvae were subsequently burnt off in situ. One of these clusters was seen in a

bark crevice at a height of 1.5m. It appeared to consist of no more than about 10 larvae. However, following treatment with Deltamethrin and the application of a flame, both of which disturbed the larvae, the cluster was found to number 65, most of which were concealed within the bark crevice.

Site:

Borough: Hounslow

Date OPM confirmed by inspection:	04/06/09
Date occupier notified:	04/06/09
Date and number of Notice under Plant Health Order:	N/A
Final total of trees found to be infested:	1
Final total of nests/larval clusters found:	2
Date(s) and type(s) of treatment:	Spot treatment with Deltamethrin 04/06/09
Inspector in attendance:	N/A
Disposal of material:	larvae burnt off in situ

Summary: first found to be infested in 2009, when two clusters of larvae were found and destroyed.

Brief Description of Site: an early-mature *Q. cerris*.

Further details: an inspector noted feeding damage in this small tree on 04/06/09. The tree is growing in a Hebe hedge of less than one metre in height between the pavement and the road. Two clusters of larvae were found to be forming temporary nests low on the trunk and concealed by the Hebe. Due to the proximity to the school gate, these larvae posed an imminent danger, therefore the inspector treated them with Deltamethrin, acting in a private capacity, and then burnt the nests off in situ.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 28/07/09
Date occupier notified: 28/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 4
Final total of nests/larval clusters found: 49
Date(s) and type(s) of treatment: Manual pupal nest removal 29/07/09 and 30/07/09
Inspector in attendance: Yes
Disposal of material: nests incinerated

Summary: first surveyed and found to be infested in 2009, four trees with 49 nests.

Brief Description of Site: There are four tall, mature *Q. robur* present, two on the boundary with Market Drive, the other two in the grassy area adjacent to the infants' playground.

Further details: the oaks at this site were not found during previous surveys of the area, and all four had nests from previous years, 9 in total. Since all had multiple infestations in 2008, first colonisation was probably in 2007. This previously undetected site could be the source of the increased infestation. The nests were found during the school holiday, but a play group were using the part of the facilities adjacent to the infested trees. As a result of the timings of the discovery and the nest removal, the head teacher was unaware of the infestation until the contractor's invoice arrived.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 28/07/09
Date occupier notified: 28/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 12
Date(s) and type(s) of treatment: Manual pupal nest removal 30/07/09
Inspector in attendance: yes
Disposal of material: nests incinerated

Summary: first found to be infested in 2009, one tree containing 12 nests.

Brief Description of Site: early to semi-mature *Q. cerris*.

Further details: first surveyed in 2009, and contained three nests from previous years. It is within 75 metres of an infested tree. Given the proximity to the school playground and a netball goal, it is likely that hairs will have been dislodged during play activities.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 28/07/09
Date occupier notified: 28/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 30/07/09
Inspector in attendance: yes
Disposal of material: nests incinerated

Summary: first found to be infested in 2009, when 1 pupal nest was found and removed.

Brief Description of Site: An isolated, stunted, semi mature *Q. robur*.

Further details: This tree had not been surveyed previously. Of interest, there are two semi-mature *Q. rubra* nearby that are 19 and 28 metres respectively from a heavily infested tree. Evidence of OPM was not seen on either of these trees.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 29/07/09
Date occupier notified: 29/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 3
Final total of nests/larval clusters found: 6
Date(s) and type(s) of treatment: Manual pupal nest removal 01/08/09 and 03/08/09
Inspector in attendance: yes
Disposal of material: nests incinerated

Summary: first found to be infested in 2009, with 3 trees infested and six nests removed.

Brief Description of Site: an old cemetery adjacent to a church with scattered trees, some of which have been recently planted. A mature *Q. ilex* near to the church contained four nests. The other two nests were in an early-mature *Q. ilex* and an early-mature *Q. cerris*.

Further details: the nests in the two early-mature trees were at about head height. The inspector considered that they posed an imminent hazard to the public, so he removed them personally, acting in a private capacity.

Photographs were taken of the feeding damage in the *Q. ilex*, which was at about 1.5 metres above ground level. The nests removed from the two *Q. ilex* did not appear to contain viable pupae.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 28/07/09
Date occupier notified: 01/08/2009
Date and number of Notice under Plant Health Order: UK/PH/RP31072009/11
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 05/08/09
Inspector in attendance: Yes
Disposal of material: nests incinerated on site with a MAPP gas burner

Summary: first found to be infested in 2009. In 2009, 1 pupal nest was found and removed.

Brief Description of Site: a semi-mature *Q. robur* growing in a riverside garden.

Further details: originally, the ownership of the garden was unclear. Therefore, the Statutory Notice was addressed to the "occupier" and was affixed to the tree. The owner of the tree saw this and identified herself to the inspector.

Site:

Borough: Hounslow

Date OPM confirmed by inspection: 28/07/09
Date occupier notified: 28/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final total of nests/larval clusters found: 3
Date(s) and type(s) of treatment: Manual pupal nest removal 03/08/09
Inspector in attendance: Yes
Disposal of material: nests incinerated

Summary: first found to be infested in 2009. In 2009, 3 pupal nests were found and removed.

Brief Description of Site: a public park in two sections separated by the A4. There are trees on the edges of the parks, which are mainly open grass. There was one infested tree in each section of the park, both being mature *Q. robur*.
Further details: very close to the borough boundary with Hammersmith.

3.2.3 Ealing

Site: Piccadilly Line trackside embankments

Borough: Ealing

Date OPM confirmed by inspection: 3 rd June
Date occupier notified: 4 th June
Date and number of Notice under Plant Health Order: FC 071 2008/01 as amended 21 st May 2009 and 19 th June
Final total of trees found to be infested: 76
Final approximate total of nests/larval clusters: c.100
Date(s) and type(s) of treatment: manual removal of nests
Inspector(s) in attendance: none
Disposal of material: at registered incinerator in North London

Summary: first found infested in 2007 (117 nests, 16+ trees). 10 were recorded in 2008. In 2009, 76 trees affected with approximately 100 nests.

Brief Description of Site: wooded section of sunken railway embankment dominated by mature *Q. robur* with smaller numbers of *Q. cerris*.

Further details: the site was inspected on 3rd June, and 81 nests were recorded in 46 trees. The nests were stabilised using hair spray, injected with a solution of insecticide DiPel before being scraped into plastic sacks. On reaching ground level these were double bagged and sent for off site incineration at the North London Incinerator.

Site: Network Rail trackside embankments

Borough: Ealing

Date OPM confirmed by inspection: 16 th May (4 th June on-site)
Date occupier notified: 20 th May
Date and number of Notice under Plant Health Order: UK/PH/MT/180620091 18 th June 2009 amended 22 nd June 2009
Final total of trees found to be infested: 22
Final approximate total of nests/larval clusters: 34
Date(s) and type(s) of treatment: manual nest removal/Decis (subject to confirmation)
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2007 (83 nests). 9 in 2008. 20 trees and 31 nests in 2009.

Brief Description of Site: 1.5km long extensively wooded section of rail embankment with abundant oak of all sizes, lower than surrounding land. 50m or more wide in some areas. On the north side of a multiple track section, having the Central Line on the south side.

Further details: nests were spotted using binoculars while working on the Central Line on 16th/17th May. An inspector carried out a further survey from Greenford station east to Hangar Lane and found no signs of OPM. The section of embankment contains many oak trees, mainly *Q. robur*. Total includes 3 nests on branches overhanging to development land at Hangar Lane on two trees, removed on 12th August, also by NCS for a different client.

Site: London Underground Central Line, North Acton to Hangar Lane

Borough: Ealing

Date OPM confirmed by inspection: 10/05/09
Date occupier notified: 10/05/09
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 22
Final total of nests/larval clusters found: 33
Date(s) and type(s) of treatment: Spot treatment with Deltamethrin 23/05/09, manual pupal nest removal 02/07/09
Inspector in attendance: Yes
Disposal of material: nests incinerated with a MAPP gas burner

Summary: first found to be infested in 2007. In 2009, 30 clusters of larvae and 3 nests were found and destroyed.

Brief Description of Site: a railway cutting running adjacent to the A40 to the east of Hanger Lane London Underground station, roughly 1km in length with 120 early to semi-mature Oaks in 2007, of which 17 were felled in winter 2007/08 to improve access for inspection.

Further details: the site was inspected on five occasions between May and July 2009, with reports submitted to London Underground, as part of contract work for this client. Following each report, LU staff arranged for contractors to attend site within a few days and undertake the necessary spot treatment or nest removal.

In 2008, one cluster of larvae was seen that could not be re-located when the treatment team went to site. These larvae appeared slightly different in colour to others, and were darker and browner with less contrast between the dorsal and lateral areas. They were judged to be well-fed and in 6th instar. The colours of many lepidopteran larvae fade shortly before pupation, and this group may have been at that stage. However, their pupation site is not known and no nest was observed. In 2009, two trees were found with shed skins, but pupal nests were not located by an aerial search. It is possible that these had moved to adjacent trees, or had been predated.

Site: London Underground Central Line, West Acton to North Acton

Borough: Ealing

Date OPM confirmed by inspection:	09/07/09
Date occupier notified:	09/07/09
Date and number of Notice under Plant Health Order:	
Final total of trees found to be infested:	1
Final total of nests found:	1
Date(s) and type(s) of treatment:	Manual pupal nest removal 10/07/09
Inspector in attendance:	Yes
Disposal of material:	nest incinerated with a MAPP gas burner

Summary: first found to be infested in 2009, when one pupal nest was found and removed.

Brief Description of Site: a railway cutting running adjacent to the A40 to the east of Hanger Lane and West Acton London Underground stations. The infested tree is a semi-mature *Q. robur* within 50 metres of the A40 and 660 metres ESE of the easternmost infested tree on the Hanger Lane section of the Central Line. The section of the Central Line between Ealing Broadway and North Acton has 79 early and semi-mature Oaks.

Further details: this section of track was first inspected on 09/07/09, and the only tree found to be infested was very close to the A40, a well lit road. London Underground was informed immediately the nest was discovered and contractors removed it the following day.

Site: London Underground District Line, Ealing Broadway to Ealing Common

Borough: Ealing

Date OPM confirmed by inspection: 30/07/09
Date occupier notified: 30/07/09
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final total of nests found: 1
Date(s) and type(s) of treatment: Manual pupal nest removal 04/08/09
Inspector in attendance: Yes
Disposal of material: nest incinerated

Summary: first found to be infested in 2009, when one pupal nest was found and removed.

Brief Description of Site: the site is a railway cutting running between Hanger Lane junction (where the Piccadilly and District Lines diverge) and Ealing Common station. The track from Hanger Lane Junction travels north to Park Royal station and the infestation on the Piccadilly Line.

The infested tree is a tall, mature *Q. cerris* on the crest of the cutting, next to Ealing Tennis Club.

Further details: this section of track was first inspected on 30/07/09, and this was the only tree found to be infested. As with several outliers discovered in 2008, the tree is a tall Turkey Oak.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 3 rd June, 11 th June
Date occupier notified: June
Date and number of Notice under Plant Health Order: UK/PH/MT/180620093
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 2
Date(s) and type(s) of treatment: manual removal of nests
Company/personnel used:
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2007 by Ealing BC Tree Service. Five nests, including one 25-30cm across, were removed. Eight in 2008, including one old one. Two in 2009.

Brief Description of Site: Two mature *Q. robur* beside a rest area at the rear of a block of flats behind a locked gate.

Further details: The inspector observed two nests from the street on 3rd June. Further inspection from within the site on 11th June also revealed two nests, presumably the same two. The site was inspected from the street on 12th August and no sign of OPM was observed.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 29 th July
Date occupier notified: 29 th July
Date and number of Notice under Plant Health Order: UK/PH/MT03082009
Final total of trees found to be infested: 10
Final approximate total of nests/larval clusters: 17
Date(s) and type(s) of treatment: 12 th August manual removal of nests
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2007 (3 nests). One nest in 2008, 17 in 2009.

Brief Description of Site: small (c.1ha) fenced-off piece of land adjacent to and north of infested Network Rail embankment.

Further details: inspected on 29th July, who made contact with owners on-site. Notice was served.

Site: Twyford Abbey Road

Borough: Ealing

Date OPM confirmed by inspection: 4 th June 2009
Date occupier notified: June
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 3
Final approximate total of nests/larval clusters: 3
Date(s) and type(s) of treatment: manual removal of nests (one small nest remained on 12 th August outside flats)
Inspector(s) in attendance: none
Disposal of material:

Summary: first found infested in 2007 (4 nests). Two in 2008. Three in 2009.

Brief Description of Site: several mature, planted *Q. robur* and *Q. cerris* along main thoroughfare.

Further details: Ealing BC carried out early treatment of some trees with DiPel.

Site: Twyford Abbey Road

Borough: Ealing

Date OPM confirmed by inspection: 4 th June
Date occupier notified: June
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 7
Date(s) and type(s) of treatment:
Inspector(s) in attendance: none
Disposal of material:

Summary: first found infested in 2009, 7 nests in 1 tree.

Brief Description of Site: large *Q. robur* in centre of playing field. Several other oaks on site.

Site: Twyford Abbey

Borough: Ealing

Date OPM confirmed by inspection: 16 th June
Date occupier notified: June
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment: manual removal of nests
Inspector(s) in attendance: none
Disposal of material:

Summary: first found infested in 2009.

Brief Description of Site: large house and grounds, now overgrown and subject to plans to develop it. A number of mature and semi-mature oaks, mainly *Q. robur*.

Further details: one nest on semi-mature *Q. cerris* on eastern boundary. All other oaks on site inspected.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 4 th June
Date occupier notified: June
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment: manual removal of nests
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2009. One nest.

Brief Description of Site: very large, roadside *Q. robur*.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 11 th June
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 4
Final approximate total of nests/larval clusters: 5
Date(s) and type(s) of treatment: manual removal of nests 25/07/09
Inspector(s) in attendance: Yes
Disposal of material: incinerated on site using a MAPP gas burner

Summary: first found to be infested in 2009. Four trees, five nests.

Brief Description of Site: The grounds contain a succession of oaks from early mature to veteran. Those found to be infested are semi-mature or mature *Q. robur* in the wooded strip to the south of the school buildings adjacent to the A406.

Further details: surveyed on 11/06/09 from the A406. At this point the larval clusters were not forming nests, therefore only one cluster was seen. On 25th July the inspector met the contractor on site and carried out a further full survey of the site, finding a further three infested trees, all in the same area as the first one. It might be significant that the trees are all adjacent to the A406, which has street lighting. Adult OPM are known to come to light, and it is possible that emergent females are following the street lighting.

Since both the inspector and the contractor were travelling out of the outbreak zone following nest removal, and the facility at RBGK was not available, the inspector elected to destroy the nests on site with a MAPP gas burner. Under no circumstances should material containing viable eggs, larvae or pupae be transported out of the outbreak zone.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 11 th June
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment: nests present at 12 th August (SG)
Inspector(s) in attendance:
Disposal of material:

Summary: first found to be infested in 2009. Two trees, two nests.

Brief Description of Site: sports ground with few scattered oaks. mainly around site boundary.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 11 th June
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 4
Date(s) and type(s) of treatment: nests present at 12 th August (SG)
Inspector(s) in attendance:
Disposal of material:

Summary: first found to be infested in 2007 (1 nest). None seen in 2008. Four nests in 2009.

Brief Description of Site: mature *Q. robur* outside block of flats.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 11 th June
Date occupier notified: June
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 8
Date(s) and type(s) of treatment: manual removal of nests
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2009. None seen in 2008. Total of 8 nests in 2009.

Brief Description of Site: two mature *Q. robur* either side of railway bridge.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 29 th July
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment: nests present at 12 th August (SG)
Inspector(s) in attendance:
Disposal of material:

Summary: first found to be infested in 2009. One tree, one nest.

Brief Description of Site: two mature *Q. robur* outside office of caretaker.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 16 th June
Date occupier notified:
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 2
Date(s) and type(s) of treatment: manual removal of nests
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2009. Two trees, two nests.

Brief Description of Site: numerous mature and semi-mature oaks, mainly *Q. robur*.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 16 th June
Date occupier notified:
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 2
Date(s) and type(s) of treatment: manual removal of nests
Inspector(s) in attendance: none
Disposal of material:

Summary: first found to be infested in 2009. One tree, 8+ nests.

Brief Description of Site: mature *Q. cerris* in back yard to block of flats.

Further details: tree heavily infested. On date of inspection larvae were in clusters on limbs. Most of these were at least 25-30cm long, and one was 75cm long.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 22 nd July
Date occupier notified:
Date and number of Notice under Plant Health Order: TBA
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 5
Date(s) and type(s) of treatment: manual nest removal 11/08/09
Inspector(s) in attendance: No
Disposal of material: incinerated on site using a MAPP gas burner

Summary: first found to be infested in 2009. One tree, 5 nests.

Brief Description of Site: mature *Q. robur* in front garden.

Further details: contractor removed five nests on 11/08/09.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 23 rd July
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 2
Date(s) and type(s) of treatment: nests present at 12 th August
Inspector(s) in attendance:
Disposal of material:

Summary: first found to be infested in 2009. Two trees, 2 nests.

Brief Description of Site: mature *Q. robur* on grass verge.

Further details: one nest not located, but silk trails evident. Trunk cloaked with Russian Vine.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 23 rd July
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment: nests present at 12 th August
Inspector(s) in attendance:
Disposal of material:

Summary: first found to be infested in 2009. One tree, 1 nest.

Brief Description of Site: mature *Q. robur* in corner of communal garden.

Site:

Borough: Ealing

Date OPM confirmed by inspection: 11 th June
Date occupier notified:
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 3
Date(s) and type(s) of treatment:
Inspector(s) in attendance:
Disposal of material:

Summary: first found to be infested in 2007 (2 nests). In 2008, 2. In 2009, 3.

Brief Description of Site: development site with newly planted f. *fastigiata* and larger specimens.

3.2.4 Brent

Site:

Borough: Brent

Date OPM confirmed by inspection: 23 rd July
Date occupier notified: 23 rd July
Date and number of Notice under Plant Health Order: UK/PH/MT23072009
Final total of trees found to be infested: 8
Final approximate total of nests/larval clusters: 12
Date(s) and type(s) of treatment: 3 rd August, manual removal of nests
Inspector(s) in attendance: none
Disposal of material: burned on site

Summary: first found to be infested in 2007 (39 nests). In 2008, 9. In 2009, 12.

Brief Description of Site: landscaped areas in grounds of large commercial building. 4-6m trees planted around a lake, other large specimens.

Further details: site visited on 22nd April and with the help of the site supervisor examined the small trees for egg plaques and early instar larvae. None were found. Site inspected on 4th June and found 5 nests. 12 nests were removed by contractors.

3.2.5 Hammersmith & Fulham

Site:

Borough: Hammersmith & Fulham

Date OPM confirmed by inspection: 21/07/09
Date occupier notified: 21/07/09
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 1
Final total of nests/larval clusters found: 2
Date(s) and type(s) of treatment: Manual pupal nest removal 22/07/09
Inspector in attendance: No
Disposal of material:

Summary: first found to be infested in 2009, when two nests were found and removed.

Brief Description of Site: the infested tree is a semi-mature *Q. robur* on the east side of a public park with trees around the boundary.

Further details: this is the first infested tree to be found in LB Hammersmith. The tree is 1.5 km to the northeast of the tall *Q. cerris* with multiple nests. As the prevailing wind comes from the southwest, the infestation is consistent with wind-assisted dispersal of mated females.

3.2.6 Royal Parks

Site: Richmond upon Thames Park

Date OPM confirmed by inspection: 25 th June
Date occupier notified: N/A
Date and number of Notice under Plant Health Order: N/A
Final total of trees found to be infested: 2
Final approximate total of nests/larval clusters: 5
Date(s) and type(s) of treatment: nest removal
Inspector(s) in attendance: none
Disposal of material:

Summary: inspected in 2007 along the northern edge, and in 2008 along the northern and western edges. First found to be infested in 2009 (3 trees, 5 nests).

Brief Description of Site: large area of parkland consisting of rough, grazed semi-natural grassland and woodland. Several thousand oak trees, with many mature and over-mature specimens, including veterans. A National Nature Reserve.

Further details: Royal Parks staff carried out surveys and found nests. In autumn 2009, a further 2 nests were found on a large, wind-thrown *Q. cerris* in the area between Pembroke Lodge and Richmond upon Thames Gate.

3.2.7 St. James University Hospital, Leeds

Site: St. James University Hospital

Local authority: Leeds City Council

Date OPM confirmed by inspection: 6 th October 2009
Date occupier notified: 6 th October 2009
Date and number of Notice under Plant Health Order:
Final total of trees found to be infested: 1
Final approximate total of nests/larval clusters: 1
Date(s) and type(s) of treatment:
Inspector(s) in attendance:
Disposal of material:

Summary: a single nest was found in 2009. At the time of writing it is unclear as to whether it originated from 2008 or 2009. Investigations are ongoing. No nests or other signs of OPM were found at the site or in the area.

Brief description of site: 4 Fastigate Oaks planted in mown grass area close to hospital buildings.

Further details: photographs of an OPM nest were taken at St. James's University Hospital in Leeds in 2009 by (Tree Officer, Ealing Borough Council). These were passed to (Tree Section Manager). A site visit was conducted on 6th October 2009. (Regional Manager South, Plant Health Service, Forestry Commission) also attended. investigations as to the origin and history of the planting of these trees are ongoing.

The nest was on one of a line of 4 Fastigate Oaks (*Q. robur* f. *fastigiata*) planted 5m from hospital buildings, and was tucked between a support fence and banding and the trunk at 1m from the ground (figures 5 and 6). Little evidence remained, but a single shed skin was hanging under the support fence and small amounts of frass were found between the trunk and the support. This suggests that the nest was removed since the photograph was taken (June 2009). The tree is not in good health, and evidence of feeding damage was seen among the dieback on the lower half, in the form of patches of twigs with only the midrib remaining (figure 6). The planting is evidently recent (Google Earth satellite view shows the area as a building site) and the

trees were probably planted in winter 2007-8. Until further evidence comes to light, it is not possible to say whether the nest originated in 2008 or 2009. The support fence is little weathered, the support band has not dug into the trunk and it is surprising to find shed skins remaining on a 1-year+ old nest, suggesting 2009. However, the feeding damage appears old, is on what appear to be long-dead twigs, and the extent of the dieback appears identical in photographs taken in June and October 2009. This may suggest an origin in 2008.

There are few oaks elsewhere in what is an extensive hospital grounds. All are *Q. robur*. Three further f. *fastigiata* are 30m away. There are two 8m, planted, normal *Q. robur* in a shrubbery, a single, large, semi-mature tree and a scrubby specimen on derelict land west of the hospital. A cemetery 0.5 km away has a number of trees, including a mature *Q. robur*.

3.3 Other occurrences and reports from inside and outside the infestation area

In 2009, Forest Research fielded more than 50 enquiries where the primary reason was concern over OPM, including possible sightings, from inside and outside the infestation area. The inspector received reports directly in some cases. With two exceptions (including Leeds, above) these proved to be negative. Selected examples followed up by inspectors are summarised.

3.3.1 Southwark Cathedral

An infestation in the grounds of Southwark Cathedral was reported by a member of the public by email on 4th May and forwarded to the inspector, who subsequently inspected on 8th May and found a heavy infestation of Brown-tail Moth *Euproctis chrysorrhoea*, feeding on small, planted *Q. robur fastigiata*.

3.3.2 Battersea

(Arboricultural Officer, Battersea London Borough of Wandsworth), received a report of OPM in a private site from contractors. The insects were photographed and identified as a black aphid, which had been seen during inspections on numerous occasions.

3.3.3 Barnes Common

On 12th May, Forest Research received a report from a member of the public of possible OPM on Barnes Common, including heavy defoliation, especially in the Mill Hill area, and white "galls". This was passed to the inspector. After several attempts to meet with the originator of the report, which failed due to other commitments, the inspector was shown the site by her on 18th June. The galls proved to be oak-apple galls, which are caused by the chalcid wasp *Biorhiza pallida*. The inspector inspected other oaks in the area, but found no evidence of OPM.

3.3.4 Drax Avenue, Wimbledon

FR took a call on 18th May from a resident in Wimbledon. OPM reported in the garden by a tree surgeon working there. The site was inspected on 19th May and several Pin Oak *Q. palustris* attacked by Winter Moth *Operophtera brumata* and Green Oak-roller *Tortix viridana* were found.

3.3.5 Park Road, Chiswick

A report was received by FR by email via (Head of Contingency Planning, Hounslow Borough), of possible OPM in a garden. Site was inspected on 5th June 2009. The report was one of a number reported to Forest Research as a result of leafletting by Hounslow Borough Council. No positive sightings resulted.

3.3.6 London Road, Hounslow

Reported through Hounslow leafleting. No oaks were present at the location. There was a line of Leyland Cypress.

3.3.7 Warnham, Sussex

The inspector was contacted by a tree surgeon with a possible sighting of OPM on *Q. robur* at Warnham, Sussex. The site was inspected within the hour and the inspector identified nests present as belonging to Lackey Moth *Malacosoma neustria*, from the shed skins on outside of nests. This was confirmed from photographs.

3.3.8 Portsmouth

On 10th June the inspector was contacted by Network Rail with a report of OPM on rail land in Portsmouth. From subsequent discussions and examination of a sample it was established that this referred to larvae of Brown-tail Moth on cherry.

3.3.9 Chorleywood, Hertfordshire

A photograph of a moth sent to a consultant entomologist, tentatively identified by the captor as OPM, was forwarded to an inspector, who identified it as a Nut-tree tussock *Colocasia coryli*.

3.3.10 Hornsey, north London

A single male OPM was caught in a mercury vapour light trap at Hornsey on 5th August 2009. A photograph was sent to the consultant entymologist, who confirmed the identity.

3.4 Monitoring

3.4.1 Pheromone trapping of male OPM

Thirteen pheromone traps were deployed as part of a student project from 17th July to 27th August. A total of 133 OPM were trapped. The first was found in a trap on 20th July, the last on 27th August (table 2). Locations of traps are shown in figure 4.

Table 2. Summary of pheromone trap results in 2009.

	17-Jul	20-Jul	23-Jul	26-Jul	29-Jul	01-Aug	04-Aug	07-Aug	10-Aug	13-Aug	20-Aug	27-Aug
B1												
B2							1	1				
B3												
B4												
B5		1						8	2	5		
B6				2	2	2	2	7	1			1
B7												
B8									1			
B9				3	1	1	2	8	7	4		
D10			1		2				7	4	4	2
D11					1				2	2	1	
D12				2	3	3	2	2	7	6	7	
D13						1	2	5	2	2	1	
TOTAL	0	1	1	7	9	7	9	31	29	23	13	3

The Forest Research pheromone trap programme across London caught 29 adult male OPM (2008: 13).

3.4.2 Light trapping

On 11th and 18th August, 3 Robinson-pattern mercury vapour light traps were run for Royal Parks, specifically to monitor for OPM. On 11th, 33 OPM were trapped, 32 males and 1 female. On 18th, none were trapped. Both nights were favourable for moth activity, and large catches were obtained. Figure 3 shows numbers trapped and locations.

4. DISCUSSION

4.1 Infestation pattern

The number of nests recorded increased approximately fourfold from 2008, and the known infestation area increased marginally in size. There are several causal factors likely to be involved in this. The number of inspectors was greater (6) than in previous years, and the inspection effort was therefore greater. In addition, Richmond upon Thames Borough Council employed surveyors to inspect trees under their jurisdiction and arrange removal, providing a further significant increase in the ground coverage.

In some cases in 2008, nests were either not discovered until during after the adult flight period, or discovered but not removed until during or after the adult flight period, resulting in heavier infestations in 2009. This includes heavily infested sites where in spite of intensive effort, it was evident that significant numbers remained in situ during the flight period. These tended to show the sharpest increases in infestation size. At a site in Hounslow, a single infested tree with 1 nest was reported in July, but not removed until October. Most likely as a consequence of this, 22 nests were found and removed. Here, as in other cases, it was evident that OPM had been undetected in previous years, going back to 2007, as evidenced by the presence of old nests in 2008 and much larger infestations in 2009.

At several sites where inspection effort was similar to that of previous years, and control was generally undertaken prior to egg laying, large increases compared to previous years were nevertheless recorded (table 1). In addition, in Ealing, where control has generally appeared to be more effective, sites such as railway embankments where a reduction was seen in 2008, saw the numbers rise again, and here greater numbers were seen in the surrounding area.

Significant increases were seen in some outlying areas. Chiswick inspections were carried out in 2007 and 2008 with zero returns in 2007 and 6 nests in 2008. In contrast, in 2009 116 nests were found. It is possible that the infestation came from a site close by, which was only surveyed in 2009 and where there were 49 nests on only 4 trees. However, given the numbers present at both sites (and elsewhere in the surrounding area) and the distance from the main epicentre, colonisation must have occurred in 2007. Small numbers could easily be missed at this large site with many large oaks, many of them *Q. robur* with dense canopy.

Another example is Barnes Common, which was surveyed in 2007, but not in 2008. A total of 28 nests were found by Richmond upon Thames BC surveyors in 2009. This is a large area with very many oaks, and it is most likely to have been infested from 2008 or even 2007, but remained undetected in small numbers.

Large increases were observed also in Hounslow across quite a wide area, most notably closest to the epicentre across the river in Richmond upon Thames, and to the south in the Petersham area, with 5 in Richmond Park, the first records for this site.

These findings indicate spread in the local area, and further spread can be expected to have occurred, but in places either not yet surveyed or where the population is too small to be detectable. However, there is no evidence to suggest that OPM is showing rapid spread similar to that of other invasive species that have arrived recently in Great Britain. The most notable and conspicuous examples are Harlequin Ladybird *Harmonia axyridis* and Horse-chestnut Leaf-miner, *Cameraria ohridella*, which are both now widespread and numerous across much of the southern half of Britain less than a decade after their arrival.

4.2 Factors limiting effectiveness of inspection work

A number of factors, some related to the biology of the species, make control of OPM by nest removal difficult. The window of opportunity for removal of nests is short. The insect is in the larval stage from April to June or early July. However, in the early instars it is difficult or impossible to find them except on the smallest trees. They begin to form nests from mid or late May, on to the end of June in some cases, by which time a high percentage have settled into the pupation nest, which is usually situated on a trunk or bough where it can be relatively easily found and removed. However, there is some tentative evidence to suggest that some nests are better hidden or that in some cases a pupation nest is not formed at all.

Emergence in previous years was recorded (by pheromone trapping) from early August. In 2009, the first adult was trapped in the period 18th - 20th July (table 2) and males continued to be trapped regularly over the next 10 days or so, with the peak occurring in mid August. Many moths and other insects are proterandrous (i.e. male emergence peaks before that of the females). However, OPM adults are known to live for only 3-4 days in natural conditions. Therefore, since commencement of the emergence of females (not detected by pheromone trapping) can be expected a few days after the males, egg-laying can be considered to start only a few days after the emergence of the males. This foreshortened even more the period in which nest removal was an effective means of control of OPM in 2009.

Different groups of larvae are evidently at different stages on the same tree. This has meant that where inspection has occurred early, from about late May to mid June, some groups are not found until follow-up inspections are made. This means that although an early inspection may result in a large number being destroyed, one or more follow-ups are still necessary.

Even now, very few people in Britain appear to appreciate of the scale of the local disruption to ordinary life, and the ecological devastation that the spectacular population explosions of this species can and do cause in other parts of Europe. In this situation there is resistance to both private and corporate funding of OPM control under Statutory Notice. Consequently, some sites require more attention from inspectors than might be the case if more work were carried out willingly.

Another important factor is the effectiveness of nest removal, even by experienced contractors. Even though some nests are easily removed, it is nonetheless difficult work and sometimes requires operatives to climb tall trees in full PPE often in warm weather. Experience has shown that where an inspector is not present to supervise, nests are more likely to be missed, resulting in some cases in larger infestation in the following year. In other cases, work has been carried out without notification to the inspector.

The above factors together mean that in order to be effective, the work must be resource-intensive.

5. CONCLUSIONS and RECOMMENDATIONS

5.1 Conclusions

- It is unclear to what extent the fourfold increase seen in OPM recorded in 2009 is due to increased survey effort and to any real increase in population size.
- Whatever the constituent reasons for the current situation and their relative importance as causal factors, the main conclusion from the work in 2009 is that the scale of the OPM infestation problem is considerably worse than previously thought.
- Given the problems associated with the work, infestations are likely to be at similar levels in 2010. Further spread can be expected as undetected outlying populations increase in size and become evident, either through inspections, public health issues or publicity.

5.2 Recommendations

- Control should continue, but in order to be effective, given that it is resource intensive, greater resources are needed. Ways to improve efficiency and cost effectiveness should be examined. In this respect, the use of a vacuum technique at RBGK is encouraging. The feasibility of alternative methods, including early preventative treatment with DiPel, based on observations of numbers of trees infested and nests in the previous year, should be further investigated,

- The scale of the OPM problem indicates that eradication might no longer be feasible and future planning should shift to control. In the meantime, an increase in efforts to make the arboricultural industry, local and national government, health professionals and the public more aware of OPM should be made. The recent probable importation of a tree carrying OPM to a site in Leeds shows that this should be carried out countrywide.
- If control is to be effective, the limitations in our ability to reduce the numbers of OPM populations (given the factors listed in section 4) should be fully recognised and factored in.

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