

## Oak Processionary Moth Programme: Operational Report 2016

### Purpose of paper:

- To provide a summary of OPM operational activity in 2016 – including communication – in terms of output and outcomes. The paper has been updated in light of Dec OPM PB comments

### Introduction

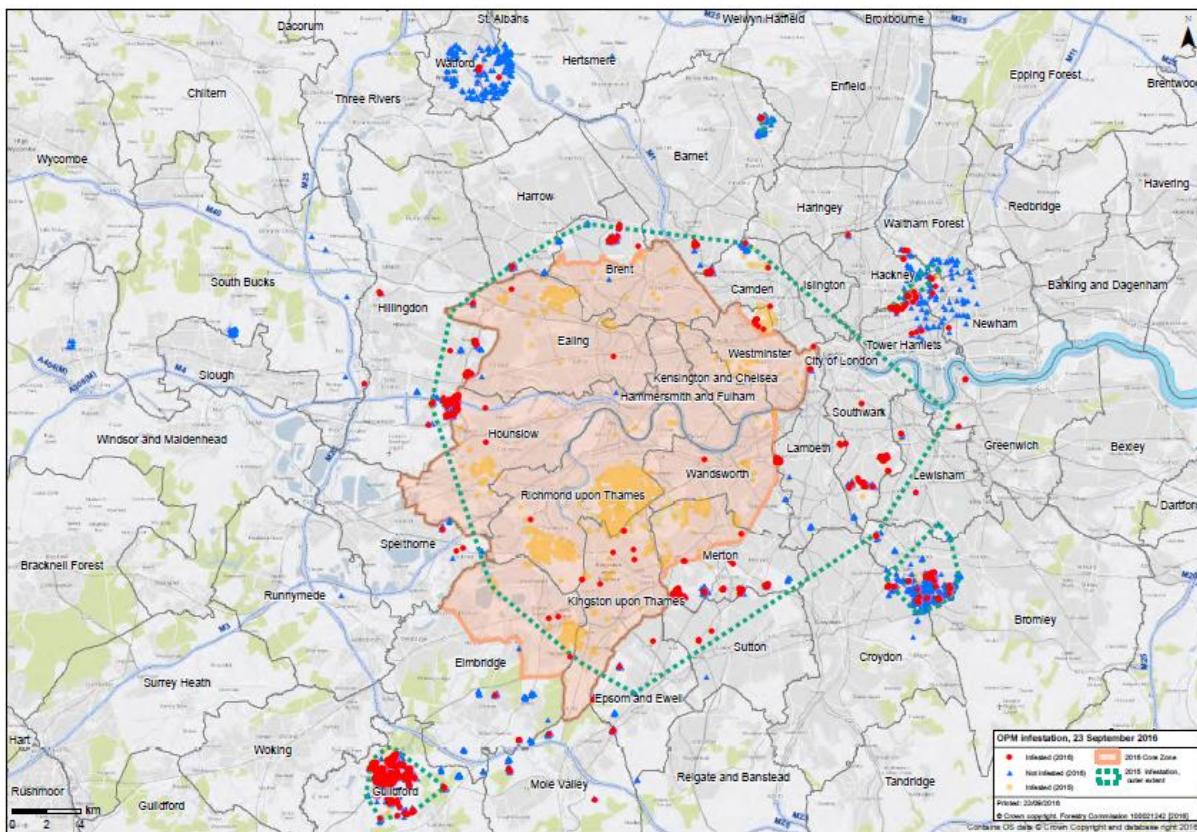
The OPM operational activity was conducted in line with the 2016 operational and communications plan that was agreed with the OPM Project Board in early 2016.

### Defra funded Operational Outputs

- 437 Statutory Plant Health Notices issued from Feb-August, to all areas outside the ‘core’ area
- 29 of the 437 SPHNs, the landowner funded the control activity themselves
- 17 SPHNs involved the landowner taking nest removal action
- 1597 pheromone traps deployed
- 336 sites, 17,496 trees sprayed [nearly all twice] outside the core zone
- 908 trees found with nests (likely to be underestimate and includes sites in the core)
- 691 nests removed from 143 sites (11,154 nests including Royal Parks)
- 4,703 sites / 35,823 trees visually surveyed during summer 2016
- 60 surveyors submitted records using the OPM reporting app
- 3,372 records submitted via the OPM app (note that 1 record could include many trees)

### Operational Results

Figure 1 – Map showing distribution of OPM infestation found during visual survey 2016.



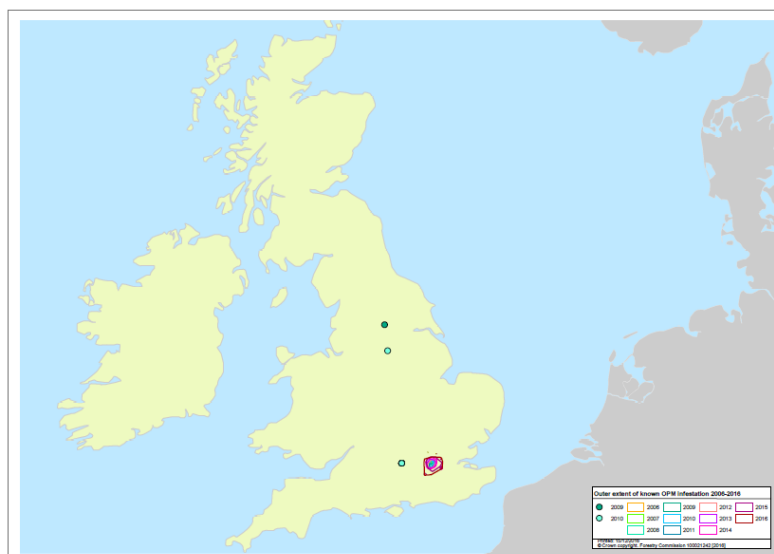
**Important Note:** One red dot on the map refers to one infested tree but one blue triangle can represent one or more non-infested trees. The dotted line indicates the outer extent of infestation in 2015.

69 of the 336 sites that had been sprayed spring 2016 were subsequently found to be infested in summer 2016 (19%); this reflects results found at Richmond Park in 2015 (14%) and 2015 (20%).

Observations on OPM distribution & density:

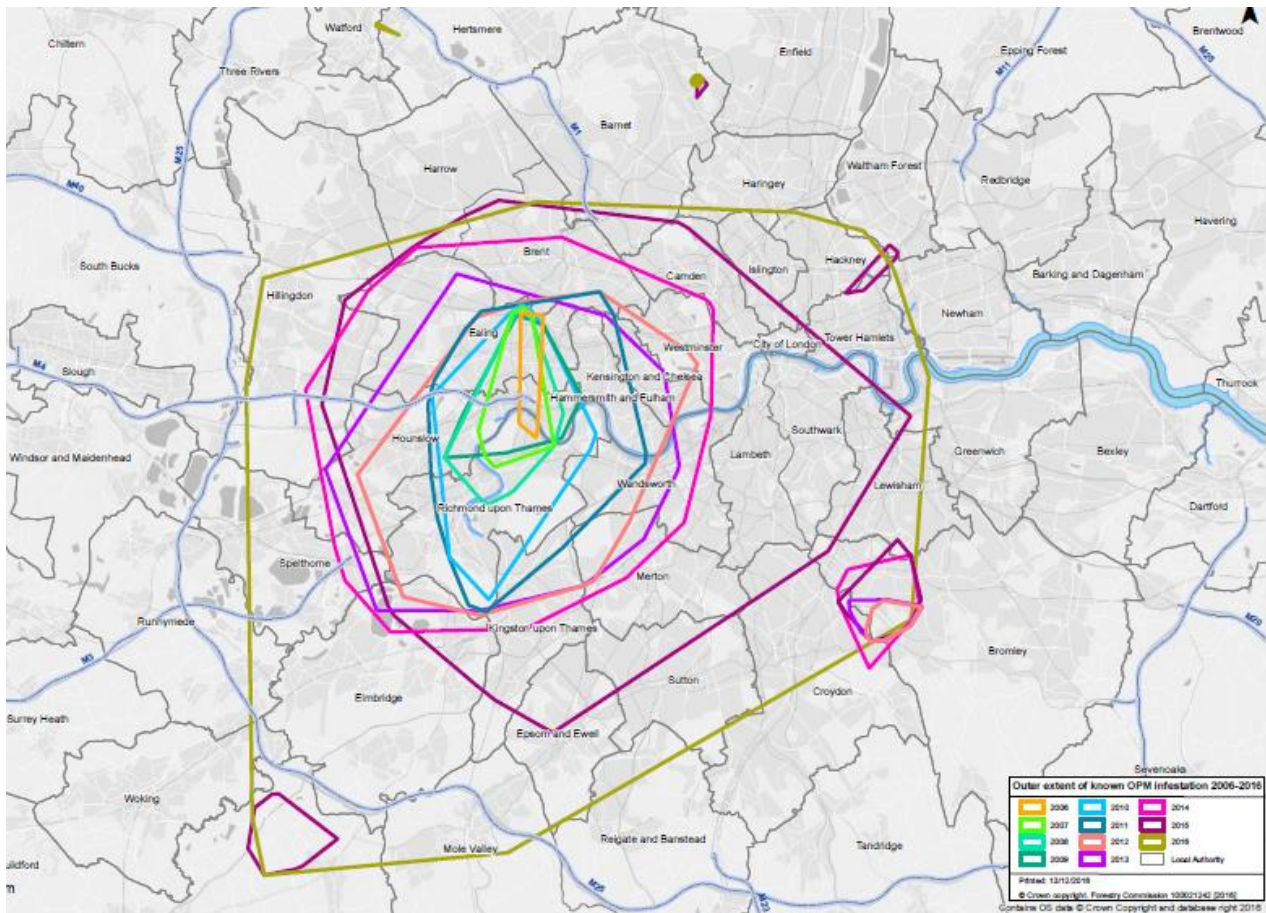
- Guildford – survey results this year indicate a link between Guildford and the main London outbreak, increasing the probability that the findings in 2015 were a result of natural spread rather than introduction.
- Croydon / Bromley – after consistent and extensive control effort over the past 4 years, there has been a significant reduction in nest findings overall. The Bethlem NHS hospital site is a case in point; in 2012 this site was heavily infested with over 4000 nests, whereas in 2016 only four trees were found to be infested.
- Greenwich, Tower Hamlets / Hackney – the distribution of oak host species is relatively low and there has been little further spread.
- Barnet – following this year’s spray treatment, only one infestation was found compared with four in 2015.
- North East London / Olympic Park –OPM is still present in this area and spreading, but in a south westerly direction towards the core. There has been no observed spread in a northerly direction.
- Watford – This is a new finding 11km from the Barnet outbreak. The finding was reported by one of the Defra funded OPM contractors – Glendale - who were working on a tree in the area. As a result of the finding, we conducted a large visual survey to a radius of 2km. Nests were found on one other semi mature oak tree and nests removed within 24 hours. The extensive survey suggests low levels of OPM population. The site is close to Watford Junction train station and M1, so there is a possibility that OPM has been carried as a result of transport corridors
- Beaverbrook - Golf Club, Mole Valley. Infestation found on new planting which appeared to be an old nest. This was an ‘instant’ tree raising concerns whether the tree was infested before it was planted. The exact age of the nest is unclear; however, the experienced OPM surveyor was of the opinion that it was not formed this year. As the tree was planted in March it is probable that the tree was imported with the nest present. APHA have been doing further investigations on the batch of trees from this consignment and we are awaiting their observations
- Pangbourne - No nests have been found but there are continued pheromone trap captures in the area suggesting a potential low density population (see pheromone programme notes below for more information)

*Figure 2 – Map showing outer known extent of OPM since 2006, in a UK context*



(note – the dots indicating infestation in Leeds, Sheffield & Pangbourne are no longer there; no infestation found for at least 3 years)

Figure 3 – Map showing OPM outer extent since 2006 in the London / SE England area



### Tree and Human/Animal Health impacts identified during 2016

**Tree Health Impacts** - There has been no formal survey of tree health impact to date. Feedback from OPM surveyors, research activity and stakeholders suggests that most defoliation is fairly light, with evidence of localised leaf loss on the outer most parts of host trees. More severe defoliation is occasionally observed, usually where major OPM infestation exists, but summer lammas growth has seen the oak canopy restored. There have been no observations of sustained severe OPM defoliation or tree decline/death as a result of such threats.

**Human health impacts** – There have been 12 reports of people being affected by OPM, nearly all the cases related to rash from OPM. In one case three construction workers in Hounslow were sent home for the day affecting suffering from the effects of the rash. There are a mixture of public and occupational based reports, nearly all associated with direct or close contact with OPM infestation. In all cases the FC sent advisory information on OPM.

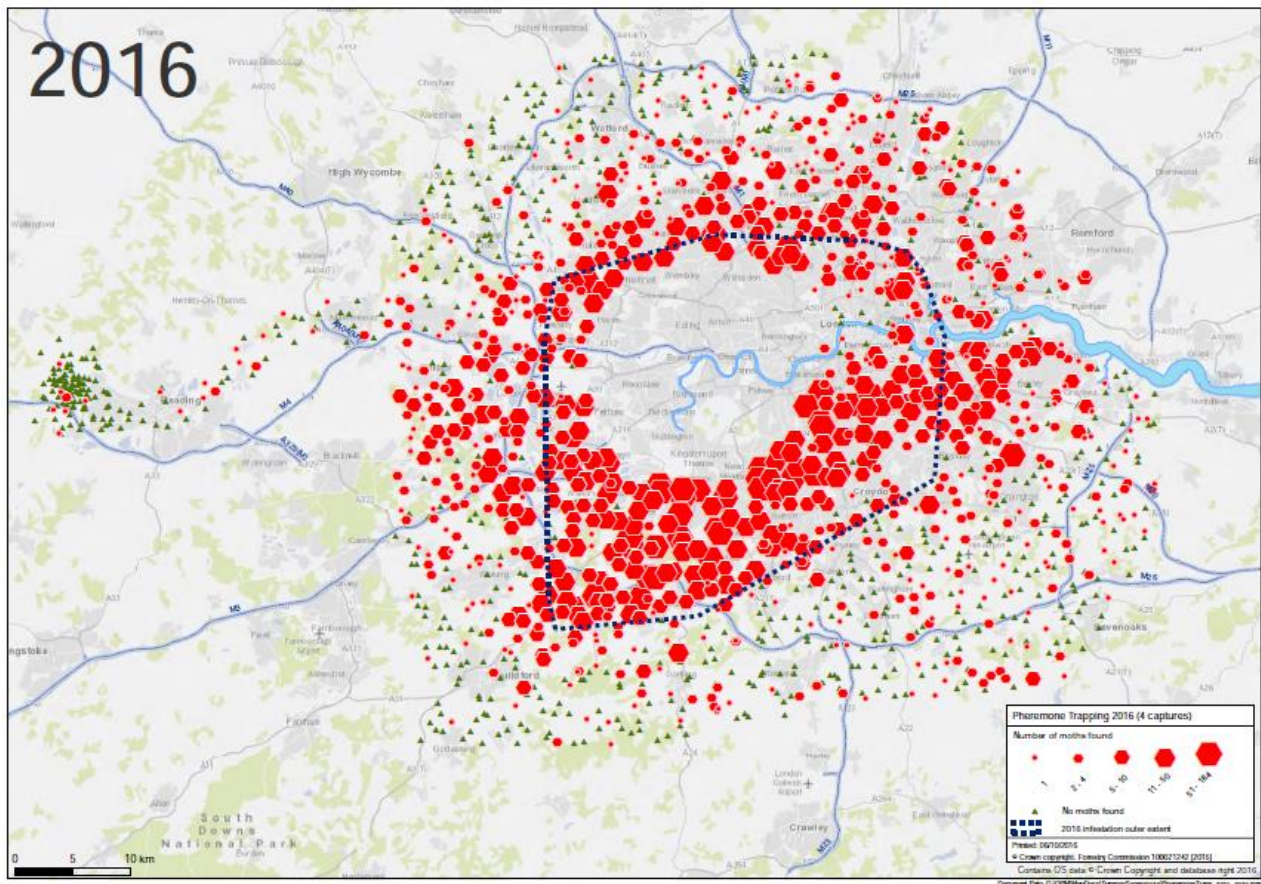
**Animal health Impacts** – There were two cases reported of dogs being affected by OPM, one case was disturbing. The dog had to have part of its mouth removed due to the severity of the contact with OPM

### Biological & Climatic Observations in 2016

- OPM egg plaques were monitored in Richmond Park for emergence of the caterpillars which occurred on 9th April. This was similar to the Netherlands where emergence was 7th April.
- An interesting feature of this year was the extended bud burst of oak leaves, this was reflected in the development of OPM caterpillars. There were frequently two or three different instars at one site making control by spraying more problematical.
- Continued trend for OPM nests found lower down the tree.
- The early season was quite poor for caterpillars, but the flight period was very good.

## Pheromone Trap Results

Figure 4 – Map showing distribution of traps and no. of OPM male moths captured in each trap.



**Note:** the dotted line indicates the outer extent of infestation in 2016.

- 1597 traps in total, each visited on 4 occasions with the lure changed twice.
- 908 traps with at least one moth
- the highest number in a trap was 184 (the highest number in 2015 was 65).
- 8482 moths in total (in comparison, over the same period, the national OPM pheromone trapping programme in the Netherlands caught 60,000 moths in 1720 traps).
- average of 5.3 moths per trap (in the Netherlands, an average of 34.8 moths per trap).

The distribution of moths in the pheromone traps matched the distribution of infestation on the ground (i.e. nests on trees, as determined by visual survey) quite closely. The large numbers of moths caught in traps to the south and south-east of the inner zone where traps were not deployed gives an impression of spread toward the S and SE, but these traps were in fact located in areas where infestation was known to be present in 2015 and 2016 and where relatively high captures of moths would be expected. Beyond the furthest extent of infestation in this direction, the numbers of moths caught in traps dropped off rapidly.

In contrast, to the E, NE, N and W relatively high numbers of moths (5-10 per trap) were caught in traps outside the known area of infestation, suggesting that surveys in these areas have not picked up the maximum extent of infestation.

Observations on particular pheromone trap locations:

Pangbourne – 100 traps deployed, a total of 8 moths captured compared to 5 last year. 1 trap had 2 male moths, the rest were single captures. This is not a statistically significant increase, but suggests a small population remains.

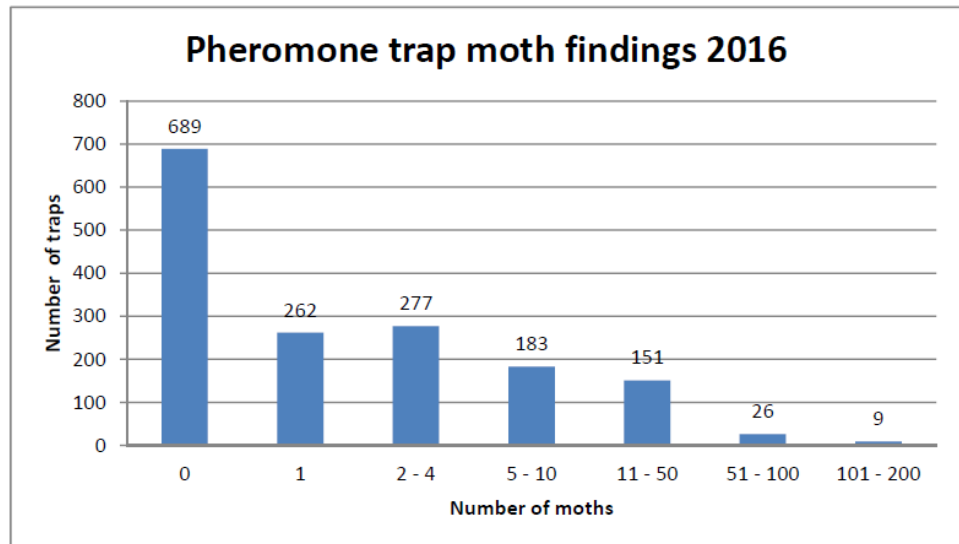
Reading/Maidenhead – continuing low levels of moth captures recorded, coupled with no visual findings, suggesting natural dispersal of the male moths or small infestation.

Croydon/Bromley – small amount of captures, reflecting the low infestation levels found this year.

Oakham/Guildford – a scatter of moth captures connected to the main London infestation, indicating small numbers of nests in the area.

689 traps had no moth captures out of 1597 deployed.

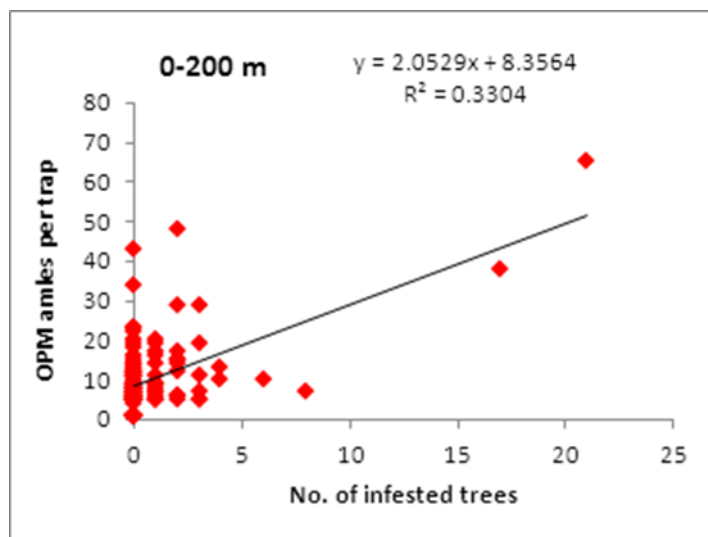
Figure 5 – Chart showing number of moths per trap vs number of traps



### Relationship between infestation and pheromone trap catch

Data from previous years (2014, 2015) indicates a significant relationship ( $P < 0.001$ ), but this is very dependent on 2 points where high moth catches were associated with 17 and 21 infested trees:

Figure 6 – Graph showing relationship between OPM male moth captures per trap and the number of infested trees within 200m of the trap



This graph is based on the accumulated number of infested trees out to a distance of 200 m. Graphs based on other distances are similar. The survey of 96 traps locations during the winter 2017 survey will provide more data and should strengthen the relationship; this report will be updated when the winter survey analysis is concluded.

## Operational Budget Spend FY 2016-17

Activity	Total Spend (£'000s)
Spraying	143
Nest Removal	48
Summer Survey	364
Pheromone Traps	272
Database and system management	70
Communications	15
Miscellaneous	20
Research	88
Winter 2017 Survey	180
<b>TOTAL SPEND</b>	<b>£1,200</b>

## Operational Costs

Activity	Min	Ave	Max
Spray cost per tree	£0.34	£8.16	£584.00
Spray cost per site	£12.50	£426.28	£19,856.00
Nest removal per nest	£12.90	£52.25	£255.00
Nest removal per site	£42.50	£445.26	£4,590.00

Total and average operational costs:

Activity	Number	Total Cost	Average
Pheromone Traps	1597 traps	£271,707	£170.14 per trap
Spraying	17,496 trees	£143,406	£ 8.16 per tree
Visual Survey	-	£364,029	-
Nest removal	691 nests	£36,107	£ 52.25 per nest

Most expensive sites:

Activity	Details
Spraying	£19,856; Cranford Park, 136 hours of spray rig, 700 trees, two treatments £7,008; Brookside Park (Hillingdon), 48 hours of spray rig, 65 trees, two treatments
Nest Removal	£4,590, Ryde Farm Estate, 90 nests removed £4,037, Ripley Green (Woodland), 62 nests removed £3,697, Ockham Park, 70 nests removed

## OPM Communications

- 3 press releases connected with key points in the OPM season (emergence, nest formation, Watford focussed). 58 media articles registered during the season.
- 13 OPM articles in specialist media e.g. vets, farming, golfing.
- Twitter messages throughout the summer from FC accounts and a lot of overall activity. Influential re-tweeters - Prof Nicola Spence, Chief Plant Health Officer, Defra; Adam Vaughan, Environment

Editor of The Guardian; London branch of the Landscape Institute; Clare Moriarty, Permanent Under-Secretary, Defra.

- Sponsored tweets targeted geographically during summer. £940 spent, average cost per click through to website £0.18. 543,000 Impressions; 527 Re-tweets; 5083 clicks through to website; 63% male audience, 30% female, 7% unknown. Overall considered by social media experts as good results.
- OPM website kept updated. 5961 page views, average time on page 2m 24s. Specific website URL link to identify website traffic emanating from our communications activity.
- 8 OPM newsletters issued.
- 10,000 leaflets distributed.
- OPM banners reused by e.g. Local Authorities.
- Stakeholder communications work e.g. [Woking Borough Council](#) , [Surrey County Council](#)
- You tube video viewed 3,595 times, average view duration 1m 59s. Audience 62% male, 38% female.
- Absence of critical voices in the media this year and very positive feedback from stakeholders at the workshop.

### **Stakeholder Liaison**

- OPM Advisory Group – meetings in March, June and October
- October stakeholder workshop – summary of results, research findings and latest thinking on future policy presented. Significant amount of intelligence collected on the work and findings of stakeholders, including core zone activity and human / occupational health reports.
- LTOA OPM Working Group – Andrew Hoppit presented latest news at 3 meetings.
- Training was provided in May on three separate occasions to raise OPM awareness as part of London tree week.
- Woodland Trust and Windsor Great Park enhanced the pheromone trapping programme and contributed to data collection.

### **Conclusions**

The OPM management and communications were implemented in 2016 as per agreed operational and communication plans and within agreed budget. Whilst there have been notable success in some areas where control has taken place – with reduction in infestation levels and slower rate of spread - but overall OPM is still spreading and new infestation areas discovered. The programme continues to refine systems & processes, build the experience of surveyors and control contractors – thus developing capacity and expertise to respond to future threats.

OPM Operational Working Group

January 2017