Committee	Dated:
Open Spaces and City Gardens Committee	7 December 2015
Subject: Oak Processionary Moth impact on City of London Open Spaces in 2015 and future plans	**Public**
Report of: Director of Open Spaces	**For Information**

Summary

This report provides information on the Oak Processionary Moth (OPM) *Thaumetopoea processionea* population and management at Hampstead Heath, Queens Park & Highgate Woods. Caterpillars and nests were discovered at Queens Park and Hampstead Heath in June this year. The report also provides information on the impact of OPM across London and management considerations for 2016.

Figures 1 & 2. Forestry commission images of moth and caterpillars

Recommendation

Members are asked to:

- Note the report and consider the potential implications for 2016.

Background

1. OPM is a native of southern Europe, where predators and environmental factors usually keep its numbers in check and minimise its impact. However, aided by the movement of plants, its range has been expanding northwards over the past 20 years, and it has become established as far north as the Netherlands, Belgium and northern Germany. The caterpillars arrived to the UK in 2006 in west London near to Kew Gardens, as egg plaques on twigs of imported tree nursery stock from the Netherlands. A more recent outbreak discovered in 2014 at the Queen Elizabeth Olympic Park, had a similar source history.

Figure 3. FC image of egg plaques

Figure 4. NLOS Image of browsing

2. The caterpillars feed on the foliage of oak trees from April through to early August and have been known to cause significant defoliation and subsequent tree health issues, where there are large populations & nests.

Health concerns

3. Of concern are the human health problems OPM can potentially cause; the caterpillars in their later stages of development carry barbed (urticating) hairs that can cause severe skin irritation and breathing difficulties. Human contact with the hairs (setae) of OPM can be associated with a range of symptoms of varying severity, from urticarial rash and dermatitis to, very rarely, anaphylaxis. Occupational exposure is a concern, regularly reported across the Arboricultural industry, where repeated exposure for those who are sensitised, results in an increasingly severe response.

Figures 5 & 6. Gristwood & Toms images of rash symptoms on contractors exposed to OPM setae

London wide management

4. Attempts to eradicate this pest have been through the Forestry Commission's use of Plant Health Notices, which demand treatment by landowners. Despite best efforts, treatment of the pest in London has turned to containment. Effective control of this pest is difficult because of the risk of collateral damage to other flora and fauna. Kew Gardens for example has managed to limit the impact of OPM by the use of a chemical insecticide, but this treatment is not selective. Widespread use eradicates other species susceptible to the chemical, many of which are beneficial to the natural system. Although research has been undertaken at some sites, including The Royal Parks, at the Forestry

Commission's sites and at Pangbourne; it is too early to draw definitive conclusions.

5. In 2015, the management of OPM across London focussed on 4 elements:-
    a) Spraying
    b) Surveying
    c) Nest removal
    d) Pheromone trapping

In order to use the DEFRA funding £1.8m, to achieve the most effective outcomes it was determined that no treatment would be funded by DEFRA in the core zone, see Figure 7. Any management in this zone was dependent on private landowners or local authorities. The Forestry Commission (FC) organised spraying, surveying and nest removal beyond the core zone and in outlying outbreaks.

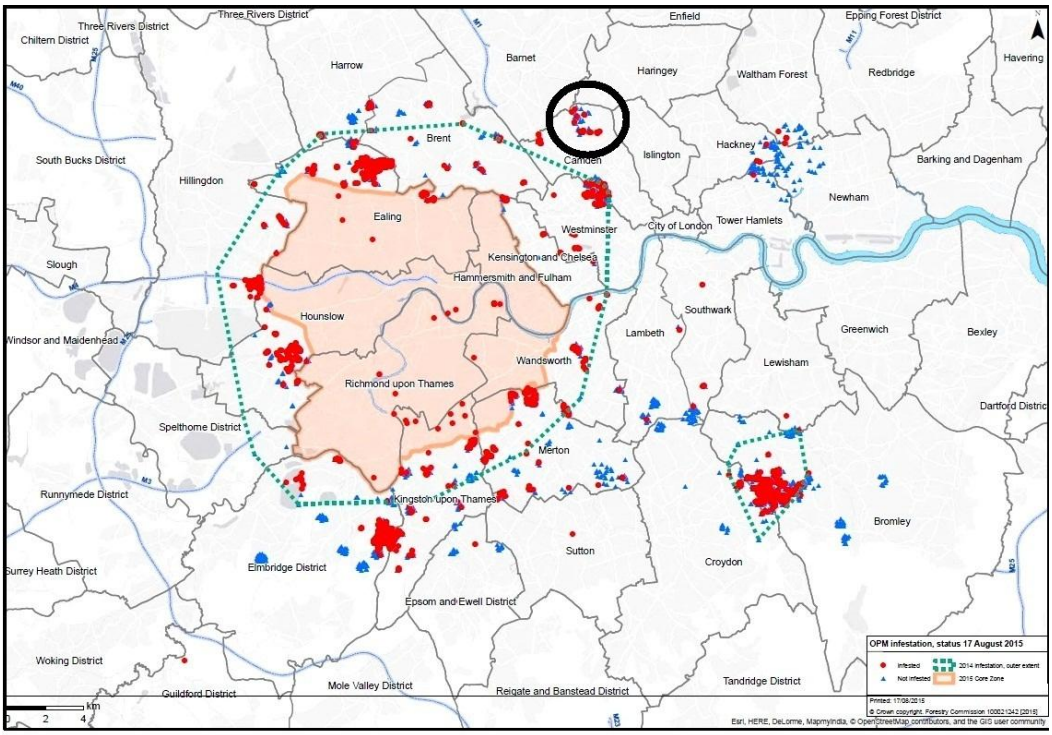

Figure 7. London spread (2015) FC map at August 2015

OPM management - Hampstead Heath and Queen's Park.

6. During inspection in June 2015, the tree team discovered caterpillars in one oak and a suspected nest in an adjacent tree in Queens Park. Fences were erected to exclude the public from these trees and information signs were installed. No further nests were discovered.
7. Also in June, a report by a member of the public who was running across Hampstead Heath suggested that they had rash like symptoms that may have been associated with OPM caterpillars. A map of the runner's route was created and the tree team dispatched to inspect the trees along the route. A nest was discovered on one of the first trees inspected which then led to the FC inspectors being brought on to the Heath to confirm. After confirmation, a further 100m radius inspection was carried out which then led to further nests being discovered. Over the next month a total of 15 nests in 13 trees were discovered. (A further two trees with a nest each were discovered within the neighbouring English Heritage Kenwood property). These are circled in Figure 7. We were served with a Statutory Plant Health Notice to remove all nests across the sites.

Figure 8. Map showing chronological order of discovered nests on Hampstead Heath

8. Due to significant health implications around the setae, found on the caterpillars and in the nests, the decision was made to not expose the Tree Team to this hazard. Contractors were used who have specialist Personal Protective Equipment (PPE) including full respiratory helmets and disposable climbing kit.

Figures 9 & 10. Specialist protective clothing

The identified nests are removed and put in to sealed double skin plastic bags then placed into a container, then taken off site for incineration.

The below images show nests containing hairs, at different stages of pupation from trees no more than 50 metres apart.

Figures 11 & 12. Removed nests

9. Further management in 2015 will involve, the 13 identified trees being revisited this winter (out of leaf) by the FC inspectors to see if there are any additional nests that may have been missed. These target trees and a surrounding 50 metre radius will be sprayed by contractors with a biological pesticide named *Bacillus thuringiensis* (BT).This will help control next year's early stage caterpillars when they emerge from their egg plaques.

Figure13. OPM spraying at Kew gardens

Results of 2015 work on OPM across London

10. The infestations found in 2015 are shown in Figure 7 and Appendix One, of particular note are:-
    - no spread from the west London area westwards.
    - contraction of the Croydon/ Bromley infestation.

- No nests found at Pangbourne for the 2nd year, but a small number of male moths found, see appendix one.
- New findings to the east and south, including significant areas at Hampstead and Chessington.
- Further findings at the Olympic park.
- New outbreak in and around Wisley, extent unknown, still being surveyed.
- Pheromone traps have caught significant numbers in some areas, which need visual survey follow ups, see Appendix Three.
- Few pheromone findings between Lon**d**on and Pangbourne

Whilst findings are beyond previously known extent it is important to note this is due to increased surveying and raised awareness.

Future Plans

11. DEFRA are undertaking an evaluation of the current control programme (2012-15) to assess the impacts of the work, the report is expected in early 2016. To allow time for fuller consideration of the evaluation, it is planned to extend the current pilot programme for a further year, 2016. At this stage, when the budgetary settlement has not been finalised, it is too early to know whether this will be feasible and the extent of work that can be achieved.
12. Given that in 2015 the spread of OPM has been reduced but not stopped, a decision on whether current control measures should continue will follow from the evaluation. It would appear likely that we will need to take a risk based approach to OPM in future and accept that it will have to be managed appropriate to the level of risk.

Financial Implications

13. The costs of managing OPM at Hampstead Heath and Queens Park in 2015 were £9,480. We know from the Royal Parks that their first year costs were £30,000 and are now annually some £250,000. Your Chairman has sought and achieved from the Chamberlain, support in principle, for additional resources should they be needed in 2016 and beyond.

Corporate & Strategic Implications

14. Tree management contributes to producing a Clean, Pleasant and Attractive City (Objective CPAC4) and to Conserve and Protect Biodiversity (Goal 15) in the Community Strategy. It will also help fulfil the Department's Strategic Goals and Objectives: No. 2. To adopt sustainable and sensitive working practices, promote biodiversity and protect the Open Spaces for the enjoyment of future generations, and No. 5. To ensure that the profile of the Open Spaces is further recognised through working in partnership with others to promote our sites and through influencing policies at a local, regional and national level.

Conclusion

15. It is quite clear that attempts to eradicate this pest across the London area have not been successful, although the rate of spread has reduced. We will have to await a decision from DEFRA before determining our full response for 2016; we are likely to focus resources on the current known populations and likely areas of

spread. We will need to learn to live with this pest, until nature finds its own control measures.

Figure 14. Trees with nests fenced off, Parliament Hill Bandstand, Hampstead Heath

Appendices:-

Appendix 1. OPM Infestation London -wide by 1 September 2015, Forestry Commission report.

Appendix 2. Pheromone trap locations in 2015, Forestry Commission report.

Appendix 3. Male moths found in traps in 2015, Forestry Commission report.

Sue Ireland
Director of Open Spaces
T: 02073323033
E: sue.ireland@cityoflondon.gov.uk

David Humphries
Arboricultural Supervisor
Open Spaces
T: 07775703017
E: david.humphries@cityoflondon.gov.uk