INTRODUCTION

1. The City of London Corporation is the governing body for the ‘Square Mile’. While known for both its heritage and contemporary urban character, the Square Mile is perhaps less well known for its open spaces and plant life. With approximately 200 small park and garden areas, churchyards and landscaped sites, the City’s plant life enhances the environment in which to live and work.

2. The City Corporation also protects and manages, by charitable trust, almost 11,000 acres of highly-valued open space across London. These open spaces are of international importance and renown, including Epping Forest Special Area of Conservation (SAC) and Burnham Beeches SAC, and of considerable historical and cultural significance in the case of Hampstead Heath and other areas. Epping Forest, for example, protects more ancient trees than any other site in the UK. In this role, the City Corporation has a central objective of protecting and conserving the ecology, biodiversity and heritage of its open spaces.

3. Additionally, in its capacity as the Port Health Authority for the tidal Thames, the City Corporation undertakes border controls at all of London’s ports, docks and wharves. As the animal health authority for Greater London, the City Corporation is also responsible for animals that enter the UK through Heathrow Animal Reception Centre (dealing with 80% of the live animals imported by air into the UK).

EXISTING RISKS

4. Invasive non-native species (INNS) are foreign plants and animals that have been introduced to the UK - either deliberately or accidentally - by humans. They can pose significant risks to human, animal and plant health and biodiversity.

5. INNS can be spread in a number of ways. These include the deliberate release or introduction of unwanted pets into the wild, fly-tipping and the dumping of garden waste, the spread of garden species from residential gardens and the unlawful dumping of nursery-grown aquatic plants and fish. Lack of public awareness of the risks of well-intentioned releases is also a problem.

6. For the City Corporation’s Open Spaces department, the number of INNS that now need managing is having significant cost implications. In addition, some of the INNS are a potential threat to the existing ecology of sites. For example, the increasing number of tree diseases and tree pests including Ash Dieback, Sudden Oak Death, London Plane Massaria, Chestnut Blight, Oak Processionary Moth (OPM) and Asian Longhorn Beetle have the potential to affect large numbers of trees and even whole tree populations. The City Corporation’s open spaces, largely through their geographical location, have recorded or are now managing many of these diseases and pests.

Human Health
7. In the City Corporation’s open spaces, the greatest risk posed to human health by INNS is caused by OPM. OPM was accidentally introduced to the UK from Europe through the importation of oak trees for a development site in Richmond, West London in 2006.

8. OPM numbers are already high, and increasing, in public open spaces and the small hairs of the caterpillars can cause unpleasant skin rashes. In individual cases the harm caused is generally low-level and elsewhere, particularly the Netherlands, OPM has become a management rather than eradication issue. However, the number of people that could come into contact with it makes it a significant public health risk.

9. The City Corporation has been working closely with the Forestry Commission, Natural England, National Trust, the Royal Parks, local authorities and other landowners to share scientific data and research, practical experience and good practice. Public Health England has also been involved in advising on health issues and the Forestry Commission’s communications including a ‘Spot it, avoid it, report it’ public awareness campaign. Information has been sent to GPs across London and veterinary surgeries have also been contacted to make vets aware of the symptoms and risk primarily to dogs.

10. The City Corporation also chairs the National OPM Strategic Group which helps the Forestry Commission engage with landowners, shape the strategic direction being taken by the Department for the Environment, Food and Rural Affairs and promote best practice.

11. Control methods have primarily focused on two approaches, nest removal and pesticide spraying with *Bacillus thuringiensis var kurstaki* (known as Bt), a bio-pesticide. The bio-pesticide is applied in early spring as soon as the eggs hatch and the first instars (developmental stages) of the caterpillars emerge. Neither approach is entirely effective and the aim of both techniques is primarily to protect public health and reduce the rate of the pest’s spread.

12. The City Corporation has taken a zone-based risk approach targeting OPM in areas where the public would be most at risk of being exposed to the caterpillars or nests. This includes removal of nests close to busy locations such as car parks, key paths and buildings, catering facilities, children’s play and sporting facilities. Tackling OPM uses significant financial resources, with expenditure in the financial year 2018/19 approaching £100,000 across the City Corporation’s open spaces. It is anticipated that the resource demands for the control of OPM in future years will be in excess of £250,000.

13. Tree diseases may also mean that the hazards from falling limbs or tree failure, to which the public may be exposed, are likely to increase. For example, monitoring of Ash Die-back (*Chalara*) in the ash trees across the City Corporation’s open spaces - which have full public access and border highways - will be an additional issue to contend with in annual tree safety surveys and arboricultural interventions.
**Animal health**

14. The most significant potential issues for animal health have concerned diseases that affect amphibians such as *Chytridiomycosis* or *Chytrid* fungus. This is not yet an issue for the City Corporation’s open spaces but is one that could adversely affect nationally significant amphibian populations (Epping Forest’s status as a Site of Special Scientific Interest includes its amphibian species numbers).

15. The accidental and deliberate releases of red-eared terrapins and crayfish species into freshwater habitats also have the potential to cause significant damage to native wildlife. Non-native crayfish are present and being regularly managed at Hampstead Heath. The impact of terrapins on native species, including frogs and toads, has not been quantified but may suppress their populations.

16. Other animal health issues faced by the City Corporation largely centre around the potential to cause damage to livestock, such as grazing cattle that the City Corporation owns or manages for habitat conservation management purposes. There remains the possibility of new tick-borne or mosquito-borne diseases which climate change could exacerbate. Blue-tongue, a disease of cattle, was previously a significant threat, but currently the weather and other environmental conditions have not favoured its spread.

**Plant health**

17. In Epping Forest, *Ramorum* disease, commonly known as Sudden Oak Death, has been the greatest threat to plant health and biodiversity to date. It is a relatively newly-discovered species of *Phytophthora* or blight (related to potato blight). The disease was first found in Cornwall in 2002 and has since spread up the west coast of the UK affecting forestry plantations, particularly larch.

18. Despite its common name, in the UK this disease is greater threat to beech rather than oak. Epping Forest is one of the most important conservation sites for beech in the UK, with 80% of the UK’s ancient beech pollards. Forest staff began a comprehensive annual monitoring programme of its host plant species, *Rhododendron*, nearly 10 years ago. This monitoring takes several weeks of a skilled officer’s time. As a result of this careful monitoring, the disease was discovered at a very early stage on just two *Rhododendron* plants on the edge of the Forest.

19. With support from the Forestry Commission, through a grant from the Environmental Stewardship Programme, the City Corporation has been able to do a great deal to control this plant disease so far. The control work has led to the removal of hundreds of rhododendron to prevent its spread to these plants from the small number of infected plants. The City Corporation has also had to fell over 600 larch trees on the edge of Epping Forest to prevent any wider spread.

20. The costs of this work have been considerable but the threat to the SAC as an internationally important site was serious. Despite the control work the disease may reside in areas outside the City Corporation’s control and so it will continue to pose a significant threat to the beech tree health of the Forest. This requires the commitment of considerable resources for monitoring for the foreseeable future.
21. Other tree diseases have also had a significant budgetary impact, with *Massaria* disease of London planes being another. This disease affects plane trees in a way that can lead to the sudden loss of limbs. This is a cause for concern as many plane tree branches in the City’s gardens and in Epping Forest hang over highways or public open spaces. *Massaria* requires that three annual inspections are carried out on each plane tree and the follow up work of removal of infected branches can require lengthy arboricultural interventions.

22. There are many invasive plants that require management interventions and resources. Among the most long-running have been management work to reduce and control Japanese knotweed, giant hogweed and Himalayan balsam. The latter has an impact on biodiversity of freshwater habitats which are also discussed in more detail below. Japanese knotweed, which affects many of the City Corporation’s open spaces, requires the most specialist intervention. However, these species are under control, but still require annual interventions and commitment to such work will need to continue.

**Biodiversity**

23. One of the main habitats in the City Corporation’s open spaces that has been most affected by INNS has been freshwater habitats where the impact of plant INNS has been very significant. Several scarce native pond plant species have been lost over the last two decades because of invasive plants. For example, *Crassula helmsii* (New Zealand pigmyweed) can be found in 25% of Epping Forest’s ponds. *Crassula* is damaging to individual pond ecosystems, killing submerged plants, blocking sunlight and depleting oxygen.

24. Another major invasive plant problem has been caused by floating pennywort. At Wanstead Park, the eradication of floating pennywort has been successfully completed in the last year. However, the work required the lowering of water levels in the Park’s nationally important water bodies over several years, which has impacted on the management of the Park’s heritage and wildlife. As well as lowering water levels there has been extensive spraying required over a number of years and this has had significant financial implications.

25. Non-native fish are also a key problem for the freshwater biodiversity and the control of common carp has been a long-standing management issue which requires regular interventions. Common Carp cause problems owing to their growth potential, while their digging up of roots and disturbing of sediments can lead to high turbidity. Native plants and invertebrate species can be lost by direct damage and also due to the exclusion of light by the resulting cloudy water.

26. Long-standing impacts from Canada geese, grey squirrels, muntjac deer and ring-necked parakeets also add to the pressure on the biodiversity of the City Corporation’s open spaces. With biodiversity still in decline it will be increasingly important to site management that INNS are controlled as effectively as possible by national action.

27. Climate change will inevitably have an effect on the flora and fauna that can successfully live in the UK as well as those that already inhabit the UK. For example,
the impact of red-eared terrapins on UK biodiversity has so far been limited as the UK is too cold at present for them to breed successfully.

INVASIVE SPECIES POST-BREXIT

28. The City Corporation believes that any proposed changes to biosecurity regulatory controls following Brexit should maintain, or enhance, existing standards. Risks posed by INNS in future trading relationships could be mitigated with legislative provisions for relevant trading offences.

29. The existing EU regulatory framework covering invasive species, and its application to the UK is open to some criticism. The Invasive Alien Species Regulations treat the EU as a whole, so the list contains species that cannot become invasive in northern Europe.

30. This has had the effect of not getting necessary cooperation from various import trades. For example, water hyacinth cannot survive a northern European winter and consequently the aquatic plant trade initially ignored the import ban. It may have been better to have regionalised the list although this would have led to some enforcement issues. Consequently, there is now an opportunity to establish a more targeted and collaborative regulatory framework that can more effectively control INNS.

31. The UK will require a replacement for the European Commission’s scientific forum on this issue. Any replacement must include academics, but also industry representation from relevant import trades to ensure a collaborative approach.

32. Controlling INNS has often been difficult as they are often identified only long after they have become widespread. To ensure early identification it is essential to have effective early intelligence gathering. Therefore, maintaining close co-operation with the EU and member states on INNS will be vitally important.

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