

Transport and Environment Committee

10.00, Tuesday, 12 January 2016

Chalara ash dieback, Dutch elm disease and new disease threats to city trees

Item number	8.3
Report number	
Executive/routine	
Wards All	All

Executive summary

Chalara ash dieback was discovered in the UK in 2012, and since then has rapidly spread. It has now been found on trees in Edinburgh on the Council estate. The number of other pest and disease threats affecting the UK has also increased substantially in recent years. Some of these are now present in Edinburgh too.

The Council has been operating a control programme to limit the impact of Dutch elm disease since 1977. Historically, elms were the most important tree in the city, and many old and rare elms remain alive to this day. It is recommended that the programme to control Dutch elm disease should remain in place, that the Council should make full use of the statutory powers available to it to control further spread, and that measures to deal with Chalara ash dieback and other tree diseases should also be put in place.

Links

Coalition pledges	P48, P50
Council outcomes	CO19
Single Outcome Agreement	SO2

Chalara ash dieback, Dutch elm disease and new threats to city trees

Recommendations

It is recommended that Committee;

- 1.1 notes the threats posed by tree diseases and pests in Edinburgh and that a further report on tree disease threats will be prepared in 12 months, or sooner, should this be required;
- 1.2 notes the response to the confirmation and outbreak of Chalara ash dieback disease in Edinburgh;
- 1.3 notes the continuing response to Dutch elm disease in Edinburgh; and
- 1.4 notes the intention to use powers under the Dutch elm disease (Local Authorities) Order 1984, as amended 1988, to ensure that disease control measures are enforceable.

Background

- 2.1 Chalara dieback of ash, also known simply as *Chalara* or ash dieback, is a disease of ash trees caused by the fungus *Hymenoscyphus fraxineus*. It is often known by its former scientific name *Chalara fraxinea*. Chalara causes leaf loss, crown dieback and bark lesions in affected trees. Once a tree is infected the disease is usually fatal, either directly or indirectly, by weakening the tree to the point where it succumbs more readily to attacks by other pests or pathogens. The first signs of Chalara in Britain were found in a nursery in Buckinghamshire in 2012 and it is now widespread across the UK.
- 2.2 The disease is spread by spores released into the air. The spores are produced by fruiting bodies which form on the stalks of the previous year's fallen leaves. This means that leaf collection will help to slow down the rate of progress of the disease. When a spore lands on a healthy ash leaf it attacks and invades the leaf, spreading quickly to other parts of the tree. In a young recently planted ash tree this can result in death within a year or two. Mature trees die more slowly, but eventually the disease is usually fatal, and there is no treatment available.
- 2.3 Ash is a very important tree in Edinburgh. It is a native tree to Scotland, is the third most numerous forest tree in the city, and is a very significant component of woodlands and parks. Many ash trees were planted as a part of the Millennium Forest project in the late 1990s, and until the current disease outbreak was one of the most frequently planted species.

- 2.4 The management response recommended by the Forestry Commission is that in low-density situations, such as parks and gardens, the situation may be helped by removing infected plants, and collecting up and burning or composting the fallen leaves. However, the advice also notes that the identification of individual trees with a genetic resistance to the disease is a priority, and therefore it is inadvisable to remove all infected trees before the progress of disease can be assessed. Instead they might be left in place until such time as they die and become dangerous and then have to be removed.
- 2.5 Dutch elm disease (*Ophiostoma novo-ulmi*) was first discovered in Edinburgh in 1976 and control of the disease has been managed by the Council continuously since 1977. As a consequence, whereas elms have virtually disappeared from the British landscape, it is still the seventh most numerous forest tree in Edinburgh and the city retains many old individual and some very rare varieties.
- 2.6 Dutch elm disease is spread by beetles which breed in dead or dying elms. When the adults emerge in early summer they carry the disease with them to infect healthy trees. The disease control strategy therefore relies on finding infected trees and destroying them before the adult beetles emerge to spread the disease. The infected elms die and in most cases would have to be removed.
- 2.7 In 2005, the Council Executive approved a move towards a voluntary approach to the removal of diseased elms where they were owned privately. This was in the light of a Cabinet Office intention to revoke the Order by which the Council has powers to deal with Dutch elm disease. However, the Order was not revoked and the Council retains the powers. Voluntary compliance has been largely successful until the last few years, but there are now a small number of private owners who are putting at risk the achievements of the control strategy. Where appropriate, it would be reasonable for the Council to use these powers to ensure that diseased trees are removed and that infection is contained.
- 2.8 Unfortunately there are other emerging threats to Edinburgh's trees, some of which have already been recorded in the city, others which are likely to arrive and others where vigilance may prevent potentially catastrophic damage. Bleeding Canker of Horse Chestnut (caused by the bacterium *Pseudomonas syringae*), Phytophthora disease of alder (*Phytophthora alni*) and Horse Chestnut Leaf Miner (*Cameraria ohridella*), have all been confirmed as having migrated to Edinburgh in the past few years. Other serious pests and diseases may arrive in years to come. Often there is little that can be done to save infected trees, but the resources required to monitor and fell them, before they become a danger to the public, as well as replace them with alternative species, are substantial.

Management of Chalara

- 3.1 In late summer 2015, Chalara symptoms were found on young ash trees by Council tree survey staff at Cammo, Craigmillar Castle Park and Corstorphine Hill. The outbreak was reported to and confirmed by the Forestry Commission. Subsequently, suspected disease symptoms have been found on young ash trees at the Hermitage of Braid. Based on advice from the Forestry Commission it seems very unlikely that an outbreak of this particular disease can be contained once it has taken hold in a woodland area. It is questionable whether it is useful to divert scarce resources towards tree removals deep in woodlands where public safety is unlikely to be an issue.
- 3.2 Instead there is a need for a long term approach to the management of Chalara in woodlands, and there is a need to co-ordinate management of trees with the control of invasive species. Species such as Himalayan balsam and Salmonberry, which are pernicious and highly invasive, take advantage of gaps created in woodland by the removal of infected trees to cover more of the ground and prevent natural regeneration.
- 3.3 It does appear to be possible to limit the spread of the disease in parks and gardens. The key elements are leaf collection and disposal by burning or composting; and regular monitoring by suitably skilled staff. The pruning out of infected limbs might be usefully done, and dead or dying trees will need to be removed. The removal of infected parts of trees, and especially fallen leaves, will help to prevent levels of the disease spores from accumulating to the levels required for infection to take place. The city has many fine ash trees in parks and gardens, the weeping ashes in Princes Street Gardens being particularly fine examples, so efforts to contain the disease where possible should be made.
- 3.4 It would seem inevitable, however, that many ash trees will be lost to the disease. Ultimately, this could affect the vast majority of Edinburgh's ash population, which is cautiously estimated to be about 37,000 trees. Localised control will be possible to some extent as described above, but the control of the disease over the whole city is unlikely to be possible in the way that has been achieved with Dutch elm disease.

Management of Dutch elm disease

- 3.5 Dutch elm disease continues to have a highly significant impact on Edinburgh's trees. In 2015, 536 trees were recorded as being infected and requiring to be felled. This compares with 634 trees in 2014 and 570 trees in 2013. 299 (56%) of these are public trees, and the remaining 237 (44%) are privately owned. This is 46 more than in 2014, and represents a significant increase in the proportion of infections on private land. This is largely due to a number of individuals or businesses who have so far failed to take action, with 73 infected trees not felled and being allowed to spread infection further. In order to consolidate the good work that has been done by the Council, the vast majority of householders and private landowners, it is now deemed necessary to use the

enforcement action that is available to the Council. This is detailed further at 6.1 of this report.

- 3.6 In January 2014, Committee approved the report “Trees in the City”, which contained policies and actions intended to improve the management of city trees and to maximise the benefits that they provide. Trees in the City also contained a summary of a study carried out in 2012-13, which measured the ecosystem service benefits provided by trees in Edinburgh, and monetarised their value. Ecosystem services are the tree functions which provide benefits for citizens, and include the storage of carbon and the removal of harmful pollutants from the air. The study also estimated the structural value of the city’s tree stock.
- 3.7 With the emergence of so many pest and disease threats, plant health has rapidly risen to be the major issue facing trees and woodlands in the UK. There is a need for qualified survey staff, capable of recognising and reacting appropriately to pests and diseases which may well appear in the city in the coming years.
- 3.8 Tree planting plays a pivotal role as part of our strategy in managing these diseases. There needs to be diversification of the species planted to ensure that the next generation of trees are more resilient to pests and diseases and also climate change.

Measures of success

- 4.1 Incidences of Dutch elm disease, Chalara ash dieback and other diseases are detected in timely fashion and appropriate action taken.
- 4.2 The annual loss of trees within the city will be slowed and ultimately reversed through a comprehensive replanting programme.

Financial impact

- 5.1 In the short to medium term Dutch elm disease and Chalara ash dieback disease can continue to be managed within existing revenue budgets provided that disease surveys continue and that the removal of diseased and dangerous trees can be completed promptly. However, the rate of progress of tree diseases cannot be accurately predicted. Should the incidence of tree diseases increase significantly, a further report will be made to committee outlining proposed actions and detailing likely financial impacts.
- 5.2 The funds available in the current year for tree planting amount to £7,000, and there is no budget available from 2016/17. Additional funding is therefore required to enable a replanting programme of appropriate scale.

Risk, policy, compliance and governance impact

- 6.1 The Council is empowered under the Dutch elm disease (Local Authorities) Order 1984 (as amended 1988) to undertake surveys and test trees for the purposes of identifying and controlling Dutch elm disease. The Council is also empowered by the same Order to enforce control measures such as the felling and burning of diseased trees. However, the Council has not used the enforcement measures for some years, favouring a voluntary approach.
- 6.2 Due to the unwillingness of certain private owners to undertake disease control and safety work voluntarily, it is recommended that appropriate use be made of enforcement measures to ensure compliance. Enforcement would be carried out by Council Forestry staff in consultation with Legal Services where appropriate.
- 6.3 The agent that causes Chalara ash dieback is treated as a quarantine organism under national emergency measures and any sighting must be reported. There is no statutory requirement to take action unless the Council is served with a Plant Health Notice. None have been served to date.
- 6.4 There are currently no policy, compliance or governance impacts associated with other tree diseases. However there is a significant risk that failure to address tree diseases adequately will lead to an escalation of disease across the city, and thus an increase in the rate of the death of trees, leading to the diversion of valuable resources away from priority areas. Once trees have died or become unsafe, the Council is likely to have to remove them as a duty of care requirement under the Occupier's Liability Act (Scotland) 1960.
- 6.5 The loss of trees is likely to impact significantly on the quality of Edinburgh's landscape, and reduce the benefits which trees deliver, such as carbon storage and air quality improvement. These risks can be mitigated by: retaining specialist staff capable of identifying pest and disease threats and taking appropriate action; retaining sufficient grounds maintenance capability to initiate disease containment actions, such as leaf collection in parks, streets and gardens, possible; and adequately resourcing tree replacement programmes.

Equalities impact

- 7.1 There are no equalities impacts as a result of this report.

Sustainability impact

- 8.1 Urban trees are vital components of the sustainable city as they remove atmospheric pollutants, lock up CO₂, mitigate localised flooding and provide both shelter and shade. The loss of mature trees from the city means that the benefits they provide will also be lost. Effort made in the management of pest and disease threats assists in delivering continued environmental benefits for the whole city.

Consultation and engagement

- 9.1 Council staff are in regular liaison with the Forestry Commission and Forest Research on issues such as the status of diseases, recommended actions, and recommendations for tree species replacements. The schedule for planned tree removals is published on the Council website. Tree policies are contained within the “Trees in the City” document, which was widely consulted on before revision and final adoption.

Background reading/external references

Trees in the City document:

http://www.edinburgh.gov.uk//download/downloads/id/1540/trees_in_the_city_action_plan

The Edinburgh i-Tree report:

https://www.itreetools.org/resources/reports/Edinburgh_iTree_Report.pdf

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Links

Coalition pledges	P48 - Use Green Flag and other strategies to preserve our green spaces P50 - Meet greenhouse gas targets, including the national target of 42% by 2020
Council outcomes	CO19 - Attractive Places and Well Maintained – Edinburgh remains an attractive city through the development of high quality buildings and places and the delivery of high standards and maintenance of infrastructure and public realm
Single Outcome Agreement	SO2 - Edinburgh's citizens experience improved health and wellbeing, with reduced inequalities in health
Appendices	None