Plant Biosecurity: The role of local councils in delivering a healthier future for the UK's plants and trees

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What do we mean by ‘Biosecurity’?

Originally, “biosecurity” was mainly used in defence terms, in particular, regarding the control of biological weapons.

Defra defines biosecurity *as:*

‘the prevention of disease-causing agents entering or leaving any place where they can pose a risk to farm animals, other animals and humans’

The **primary goal** of biosecurity is to protect against risks posed by diseases and organisms.

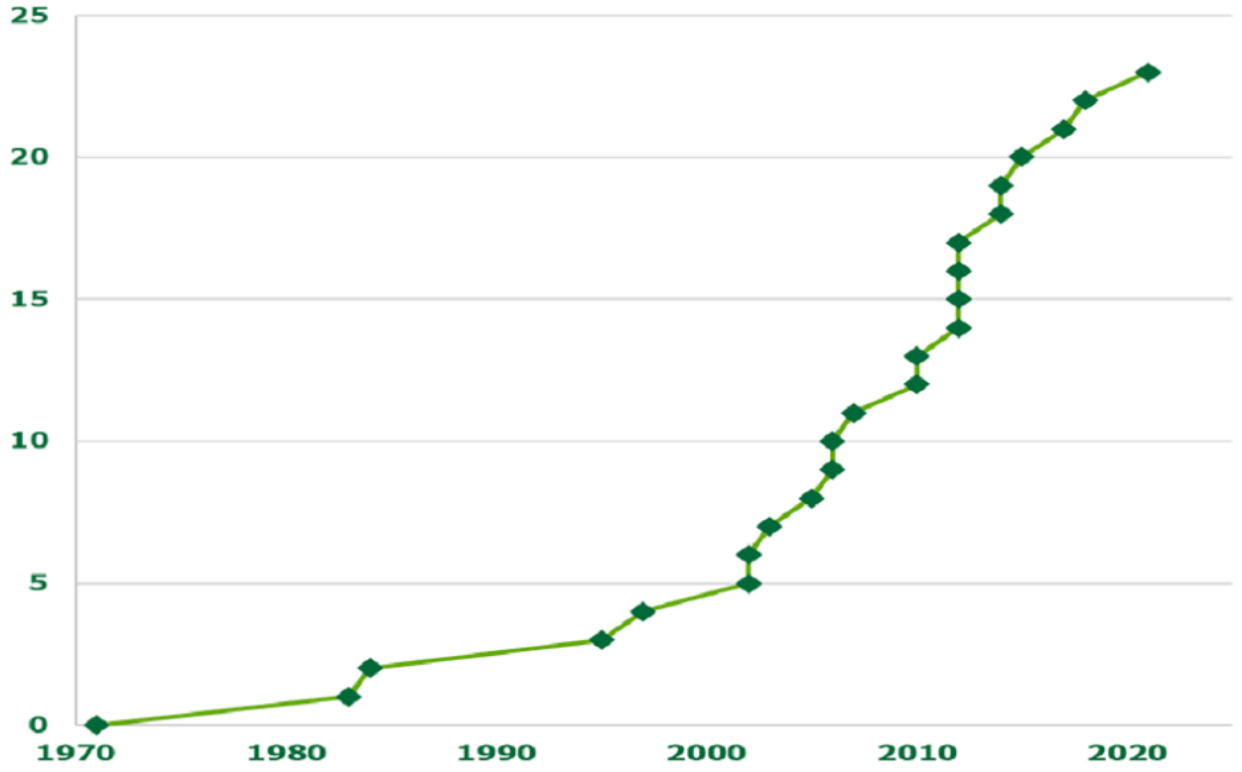
The **primary tools** of biosecurity are exclusion, eradication and control, supported by expert system management, practical protocols, and the rapid and efficient securing and sharing of vital information.

What do we mean by ‘plant’ biosecurity?

Plant Biosecurity refers to a set of precautions that aim to prevent the introduction and spread of harmful organisms. These include non-native tree and plant pests, such as insects, and disease-causing organisms, called pathogens, such as some bacteria and fungi.

Within this definition many include **non-native invasive species (NNIS)**

The spread of pests of cultivated and wild plants globally, including forest pests, pose potentially high impacts for natural capital, food security, livelihoods, medicines, and trade.



The increase in the number of new pests and disease outbreaks affecting trees since 1971 (Source Forestry Commission)

Year (since 1971)	New pest and disease outbreak
1971	**Dutch elm disease**
1983	Great spruce bark beetle
1984	Phytophthora alni
1995	Gypsy moth
1997	Dothistroma needle blight
2002	Phytophthora ramorum
2002	Horse chestnut leaf miner
2003	Phytophthora kernoviae
2005	Bleeding canker of horse chestnut
2006	**Oak processionary moth**
2006	Phytophthora pseudosyringae
2007	Pine tree lappet moth
2010	**Acute oak decline**
2010	Phytophthora lateralis
2012	**Ash dieback**
2012	**Asian longhorn beetle**
2012	Sweet chestnut blight
2012	Phytophthora austrocedri
2014	Phytophthora sikiyouensis
2014	Sirococcus tsugae
2015	Oriental chestnut gall wasp
2017	Elm zigzag sawfly
2018	Eight toothed spruce bark beetle
2021	Phytophthora pluvialis

Where does APSE fit into this?

- Increasing numbers of network queries and general interest in how other local authorities were dealing with issues such as Japanese knotweed prevention, managing Ash Dieback and its implications, eradicating Himalayan balsam, operational approaches to reduced chemical usage etc.
- In response, presentations on these concerns were included in Advisory Groups, online seminars and briefing notes.
- More recently in partnership with a wide range of stakeholders including APHA, Defra, The Tree Council etc, an online seminar which dealt specifically with plant biosecurity was held.
- However, it was felt that it would be useful to gauge the level of understanding of the importance plant biosecurity was being given amongst APSE local authority members.

The APSE Plant Biosecurity Survey 2023

- Sent out to all members
- Questions included:

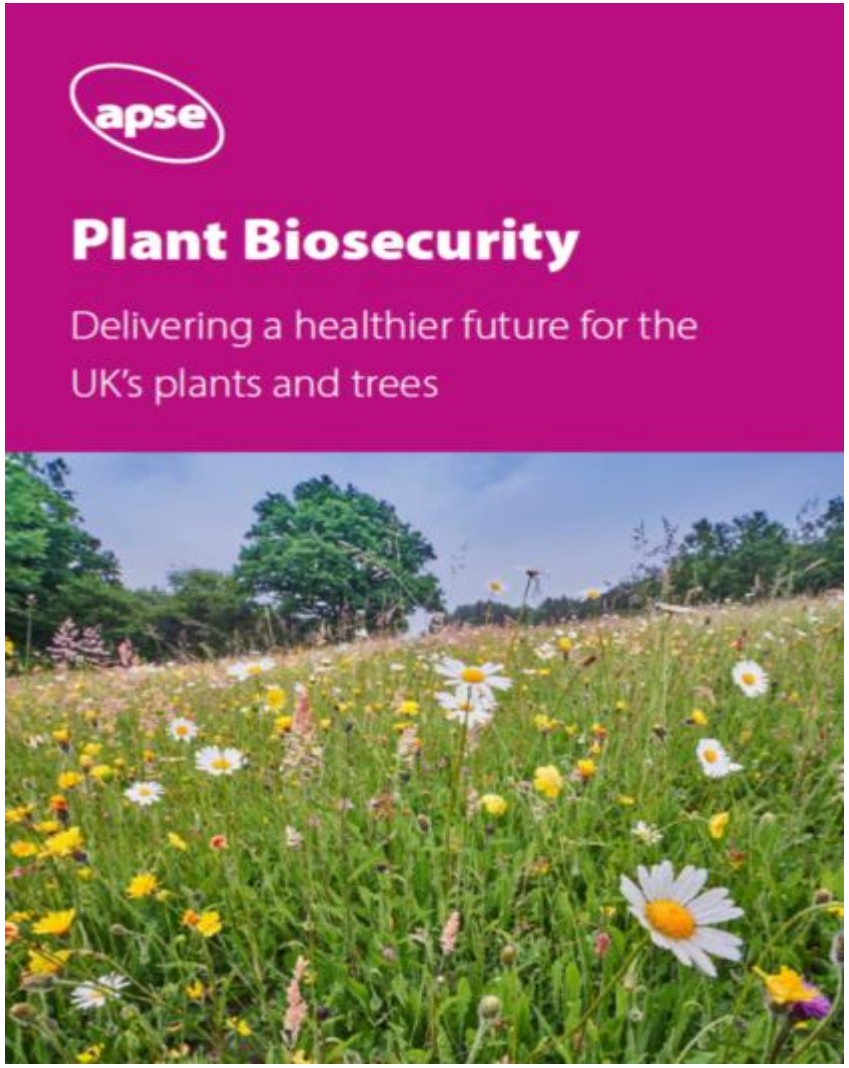
- Awareness of national strategies on plant biosecurity
- Whether plant biosecurity was considered in operational practices
- Personal level of understanding on the subject.
- What pests, pathogens and NNIS species were a cause for concern
- What actions had been taken to address NNIS and pests and pathogens relating to plants
- Whether the use of chemicals had been reduced and what had been the effects
- Does the council have a specific plant biosecurity plan or policy.
- Is training provided to raise awareness/improve plant biosecurity actions.

The Findings of the survey

- Most local authorities were aware of various pests, diseases and non-native invasive species affecting their areas, those most frequently mentioned were Ash dieback, Japanese knotweed, Himalayan balsam, Oak processionary moth and Giant Hogweed.
- Only 36% knew about the UK Plant Biosecurity Strategy (2023-2028)
- 58% did consider biosecurity measures in their operational practices, despite only 10% recording that they had a specific biosecurity policy.
- Biosecurity measures were being included in staff training, albeit often as part of wider training areas such as health and safety.
- When asked as to the means of dealing with pests, diseases, and invasive non-native species there was clearly a mixture of approaches from manual removal to the limited use of chemical treatment. Worryingly a notable proportion stated they did not have the funds to address such issues, which does not bode well both for their own authority or neighbouring authorities, for as previously mentioned, pests, diseases and invasive non-native species do not respect administrative boundaries.
- Regarding specific actions local authorities were taking to practically address biosecurity issues procuring locally sourced plants was a clear favourite, but again there needs to be a confidence that the growers of these plants are following effective biosecurity measures.
- Over 20% of respondents stated that they regularly monitored the presence and spread of pests, diseases, and invasive non-native species, reporting any information to relevant bodies such as Defra.
- A small number were also developing localised action plans to deal with specific outbreaks rather than hoping these would be addressed as part of the normal grounds' maintenance frequencies.
- An interesting response was that biosecurity requirements were being built into their contract specifications.

APSE Plant Biosecurity Research Report - 2024

- As a result of the surveys responses APSE has produced a research report covering relevant plant biosecurity issues which it hopes local authority managers and front-line staff will find useful.
- It needs to be remembered that plant biosecurity is not just a parks and greenspace issue but has relevance across a wide range of services within a local authority.
- The report aims to not only provide a background as to the development of the reasoning behind and the importance of plant biosecurity, but also practical examples of how adopting bio-secure practices will help ensure the health and sustainability of local authority parks and greenspaces.



Contents of the report

- **Potted History of Plant Diseases and Pests and the growth of science in understanding plant pest and diseases**.
- **Plant Biosecurity Strategies for Great Britain.**

  Plant biosecurity strategy for Great Britain (2023-2028)

  The Great Britain Invasive Non-native Species strategy (2023-2028)
- **What do we know about Plant Biosecurity? – a local authority perspective. – APSE Survey 2023**
- **Identifying the major plant diseases, pests and invasive non-native species affecting the UK.**

  Tree pests and diseases **,** NNIS & dealing with invasive non-native species
- **Preventing the introduction and spread of tree pests and diseases.**

  The need for greater emphasis on biosecurity precautions and control.
- **Plant biosecurity measures in parks and green spaces.**

  Sourcing and procuring new plants. operational considerations, donations **st**aff training
- **Local Authority Plant Biosecurity Policies.**

Does plant biosecurity really matter?

Climate change as well as the increasing global trade in plants is altering the worlds plant distributions together with the potential to increase the range of diseases, pests and NNIS.

Ash Dieback has the potential to destroy up to 95% of the UK ash trees, not to mention the potential of the emerald ash borer beetle! - current estimates of £15 billion to deal with the impacts of the disease.

Dutch elm disease has been estimated to have killed between 25-30 million trees in the UK alone.

The cost of managing and eradicating NNIS in the UK is currently considered to be in the region of £4 billion a year.

Between 20% - 40% of global food crops are lost annually due to pests and diseases.

New UK threats include:

- the bacterium Xylella fastidiosa which has the potential to one of the biggest risks to the UK horticultural industry and wider landscape..
- Emerald Ash Borer Beetle and the Japanese beetle, (not currently in the UK but potential threats)
- Asian Longhorn beetle one appearance but eradicated but still a threat
- Pine Processionary moth

Conclusions

Plant diseases have been destructive since ancient times - Famines

The destructive power of pests, diseases and invasive non-native species can still have significant environmental, social, and economic impacts.

In the past early plant hunters looking for new and exotic species may have been responsible for the introduction of NNIS, but

More recent pest and diseases have largely been introduced through global trade in plants.

Negative impacts of climate change are trying to be addressed through initiatives such as large-scale tree planting schemes and climate tolerant species of plants.

The sourcing of our trees and plants is just one area where strict plant biosecurity measures can help prevent the accidental introduction of pathogens and pests.

Local authorities need to be at the forefront of ensuring the green spaces they manage are bio-secure, through their procurement policies and management of new and existing plants and trees.

By understanding the importance of plant biosecurity and having a network of correct operational practices and expertise about trees and plants, both internal and external, then hopefully we will be able to ensure a healthier future for our greenspaces.

Plant Biosecurity: The role of local councils in delivering a healthier future for the UK's plants and trees

A report which explains why local authorities must not only be aware of how their actions can influence and improve the way we look after the UK’s plants and trees, but also provides examples of best practice in meeting this responsibility

- https://www.apse.org.uk/index.cfm/apse/research/current-research-programme/plant-biosecurity- delivering-a-healthier-future-for-the-uks-plants-and-trees/plant-biosecurity/