Plant Health and Scotland's Biodiversity

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Scottish Natural Heritage
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What I'll cover

- Threats of novel plant pests and pathogens to biodiversity in Scotland
- Current impacts
- Future threats and concerns
- Ways to reduce plant health threats to biodiversity

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Impacts on species

- 955 species associated with ash
  45 species completely dependent
  62 species highly associated

- 2,300 species associated with oak
  326 species completely dependent
  229 species highly associated

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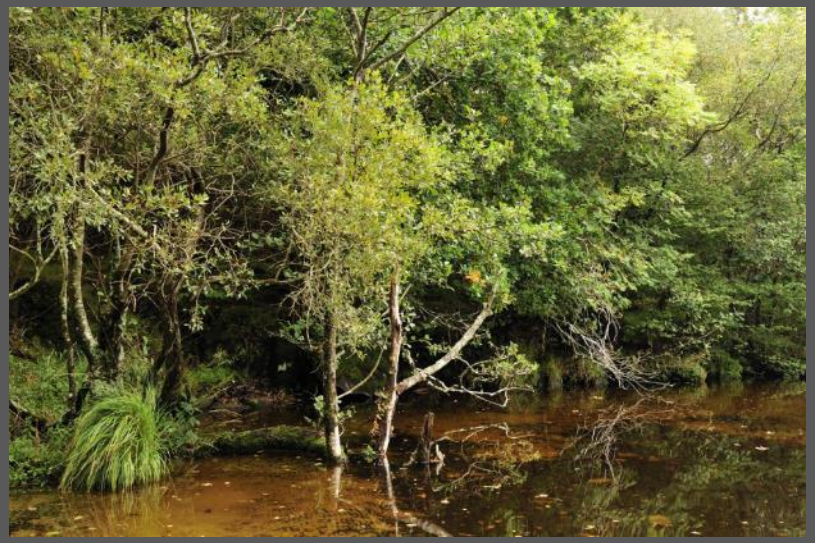
Impacts on ecosystems

Using example of riparian woodlands

- Filters water from land
- Protection of river banks
- Fallen leaves and invertebrates provide food for aquatic creatures
- Shading keeps water cool



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Plant health and climate change

- Nature can help mitigate the effects of climate change – e.g. new woodland creation
- SG aims to increase woodland cover from 18% to 21% land area by 2030
- More diverse woodlands lock up more carbon

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Current known threats

- Ash dieback 2012
- *Phytophthora austrocedri* 2011
- *Phytophthora ramorum* 2007
- Dothistroma needle blight 2002
- *Phytophthora alni* 1993
- Dutch elm disease 1970s

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Known future threats

Bronze birch borer

Emerald ash borer

Black timber bark beetle

Phytophthoras

Citrus longhorn beetle

European spruce bark beetle

Asian longhorn beetle

Acute oak decline

Xylella

Pinewood nematode

Elm zig-zag sawfly

Oak wilt

Canker of conifers

Pine processionary moth

Phytoplasmas

Oak processionary moth

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Known future threats - oak

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Emerald ash borer

Black timber bark beetle

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Known future threats – scots pine

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Emerald ash borer

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Concerns / Unknown threats

- Evolution, cross-breeding
- New strains of previously introduced pathogens
- Cryptic diseases – e.g. phytophthoras
- New trade partners present new risks
- Cumulative plant health impacts
- Climate change

Future direction

- More biodiverse, resilient ecosystems (more natural regeneration)
- Discourage prophylactic felling of native trees
- Support for local nurseries / home-grown plants
- Improve biosecurity of plant movements
- Strengthened surveillance in the natural environment
- Improved public awareness

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Summary

- Novel pests and diseases pose a significant threat to Scotland's biodiversity
- Plant health issues can impact natures ability to mitigate climate change
- Biodiversity (inc genetic diversity) is part of the solution
- We can take action to lessen plant health threats
- More research is needed – particularly on threats to non-commercial, non-tree hosts
- Opportunities with new Scottish Biodiversity Strategy


Thank you

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