Impact of Ash Dieback on Veteran and Pollarded Trees in SW Sweden

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COST is supported by the EU Framework Programme
ESF provides the COST Office through a European Commission contract

Veteran trees in Sweden

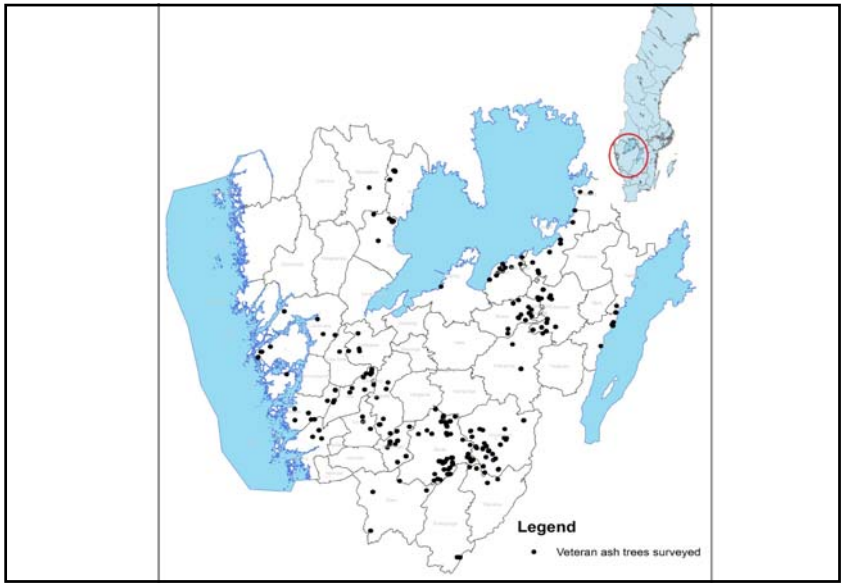
- Action plan for trees worthy of protection
- 350,000 deciduous trees surveyed
  - Hollow > 40cm diamter
  - Over 1m in diameter
  - Old (>200 years)
  - Threatened species
- Västra Götaland – 25000 trees (17% ash)

Background

- Veteran ash trees
  - High biodiversity value
  - Lots of species associated
  - Culturally significant
- Subsidies for tree management and pollarding
- Limited information regarding veteran trees
- Limited information regarding pollarding
- Most veteran ash trees outside of woodlands

Background

- Monitoring programme set up 2009 by local authority
- Low level of funding
- Simple method
- No laboratory analysis – field symptoms only
- Not intended to be a research project!



Method

- Random sample of 330 veteran trees
- Maidens & Pollards (in cycle and lapsed)
- Surveyed in August 2009, 2011, 2013

- Simple scale
  - 0 – completely healthy
  - 1 – (c.< 10 % crown affected)
  - 2 – (c.10-30 % crown affected)
  - 3 – (c.> 30 % crown affected)
  - 4 – dead

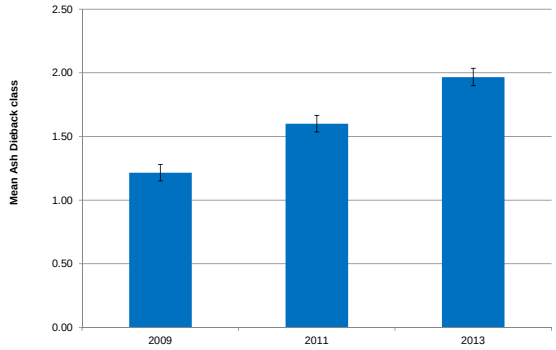
Results

- Whole county affected
  - 2009 – 62% affected
  - 2011 – 77% affected
  - 2013 – 84% affected

- Mortality rates
  - 2009 – 2011: 1.4% p.a.
  - 2011 – 2013: 2.1% p.a.

Results

Trees have become more affected over the 4 years (p= 0.001)



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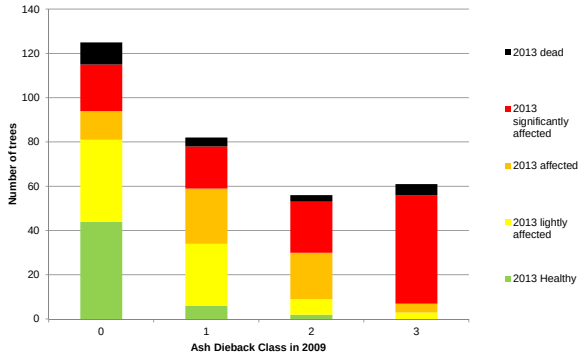
Results

- Movement between classes between 2009 and 2013 (10 from 0-4; 21 from 0-3, 37 from 0-1)



Results 2013

- Significant relationship between health and girth in 2013
  - Larger girth = less affected
  - No tree under 140cm girth was healthy
- Geographical gradient
  - In 2011 trees further west had fewer symptoms than trees further east
  - Gradient disappeared in 2013

Results 2013

- Data on shade and grazing collected in 2013
- No significant differences were found
  - Grazed/ungrazed
  - Open/semi-open/shade

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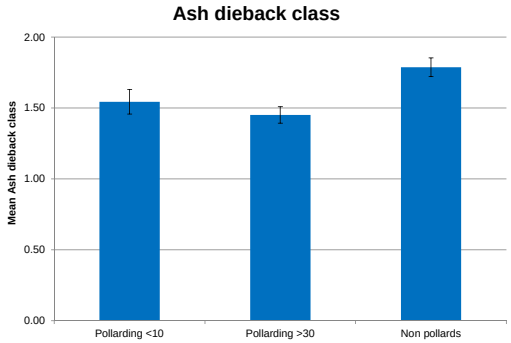
Pollarding and Ash Dieback

- Pollards were less affected than non-pollards
- Pollard group includes
  - Lapsed pollards (>30 years)
  - Recent pollards (>10 years)

Pollarding and ash dieback

- There is a significant difference between both groups of pollards and non-pollards (p=0.02).
- There was no difference between the two groups of pollards



Discussion

- Can old trees hold the key?
  - Age? Endophytes? Time?
- Why are pollards showing less symptoms?
- Biodiversity impact?
- Mortality rates?
  - Comparison?
  - Expectations?
- Geographical gradient
  - Disease has come from the east?
  - Environmental factors ?

Discussion

- Pollarding?
  - Date of pollarding variable
  - Condition of tree before pollarding unknown
  - Pollarding may temporarily remove the symptoms?
  - Complex functional units in pollards?
  - More work to be done!

Recommendations

- Aim to avoid loss of biodiversity
- Aim to ensure equivalent replacement trees
- Aim to reassure landowners

Recommendations for the veteran ash trees in the UK

- Avoid all restoration work on old pollards
- Pollards in cycle and healthy – continue with cutting
- Avoid cutting all trees in the same year
- Do not fell as a preventative measure
- Replace with native deciduous trees
- Monitor the veteran tree population in the UK
- Invest in research on our veteran trees

Thank you!