


**VETREE**


 Lifelong Learning Programme

# Valuing and managing veteran trees

A training day delivered by the VETree project

Biskops Arnö, Sweden Photo: Vikki Bengtsson

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**VETREE**


 Lifelong Learning Programme

# VETree project



Bertiz, Spain Photo: Ola Bengtsson

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**VETREE**


 Lifelong Learning Programme

# Introduction

- Plan for today
- Comfort information
- Health and Safety
- Questions?

Introduction and definitions of veteran trees

**Coffee break**

Field visit

**Lunch**

Management of veteran trees

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## Introductions

- Who am I?
- Who are you?
- Expectations?

Photo: Helen Read, Romania

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## Objectives

- Describe and recognise a veteran tree of importance for its biological or heritage value
- Explain why trees can live so long
- Describe how and where roots grow and why they are important
- Undertake a simple survey of a veteran tree in the field
- Assess where management is appropriate for old trees or their surroundings

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Old trees are among the things that bind us to one another and to our past

Windsor Great Park, England      Photo: Vikki Bengtsson

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## Defining a veteran tree

- What are veteran trees?
- How can you recognise them?
- Age, size, species and condition

Kvilleken, Sweden

Photo: Vikki Bengtsson

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## Exercise 1: Make a list of veteran tree characteristics

Photo: Helen Read, Urkiola, Spain

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## Some pictures to help

Photo: Brian Cleckner, Ashted Common, UK

Photo: Helen Read, Spain

Photo: Vikki Bengtsson, Fontainebleau, France

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## Why can trees live so long?

Illustration by Neville Fay (2002) after Raimbault (1995) and Lonsdale, (1999)

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## Loss of apical dominance

Illustration: Claus Mattheck

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## The King has lost his head

Photo: Vikki Bengtsson, Romania

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Photo: Vikki Bengtsson,  
Bodfach Park, Wales




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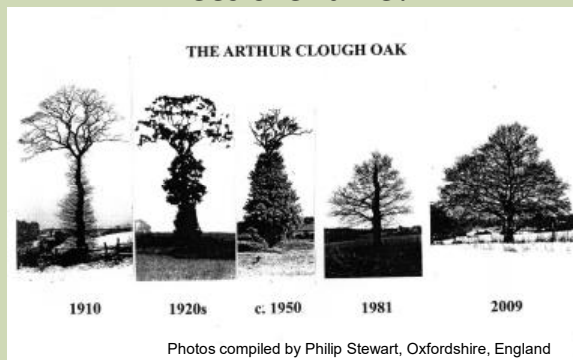
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## Trees over time?




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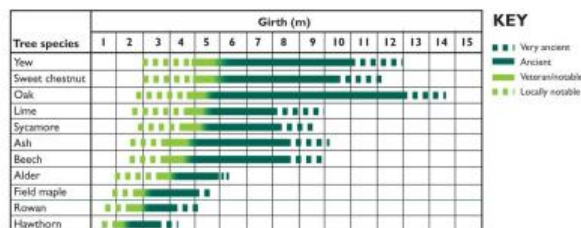
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## How different species vary in girth: handout




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## Veteran trees and wildlife

- Why are veteran trees important for wildlife?
- Fungi and their fundamental role
- Examples of wildlife associated with veteran trees
- Importance/status of the wildlife
- Wildlife habitat requirements (and what we can do to help)

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## Veteran trees are living ecosystems




Photo: Helen Read, Spain

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## Tree form/history is important

- Open grown
- Pollards
- Damaged trees
- Age
- Hollowing
- Cultural landscapes



Photo: Vikki Bengtsson, ash pollards, Sweden

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## Decay process and fungi

- Decay = decomposition
- Nutrient cycling
- Natural process
- Complex process
  - Fungi, microbes and invertebrates
- Wood = energy source
- Wood transformed




Photo: Vikki Bengtsson, Gripsholm, Sweden

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## Nutrient cycling



Photo: Vikki Bengtsson, *Laetiporus sulphureus*.



Photo: Vikki Bengtsson, Ashted Common, England

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## Not all decay is the same

- Different fungi, different trees, different conditions
- Brown-rot
  - cellulose first, lignin intact
- White-rot
  - Lignin broken down preferentially
  - or
  - Lignin and cellulose broken down simultaneously




Photo: Brian Cleckner, England

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## Why is decay important?

- Different types and stages of decay attract different species
- Succession of species
- Competition between species
- Very many species

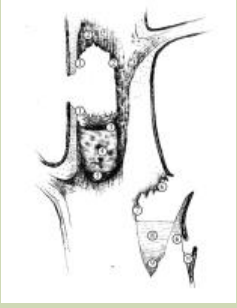


Illustration by Per Axell after Stokland et al. (2012)

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## Exercise 2: Recognising habitats




Illustration: Neville Fay

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Photo: Vildaphoto, *Myotis bechsteinii*




Photo: Eliamys quercinus, Vildaphoto




Photo: Vikki Bengtsson, *Lucanus cervus*




Photo: Leen Herrewyn, *Athene noctua*



Photo: Vikki Bengtsson, *Fistulina hepatica*



Photo: Vikki Bengtsson, *Lobaria pulmonaria*

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## Invertebrates

Photo: Paul Richards  
millipede *Cyrtodrilus punctatus*

Photo: Roger Key  
False scorpion *Dendrochernes cyrneus*

Photo: Roger Key  
Wasp *Pemphredon lugubris*

Photo: Roger Key  
Moth, *Morophaga choragella*

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## Invertebrates

- HUGE number and variety!
- Annual life cycle
- Many specialists

Photo: Roger Key,  
*Helophilus pendulus*

Photo: Henk-Jan de Jong,  
*Otias serra* (cobweb beetle) larva

- Larva and adult - different requirements
- Many rare!

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## Rare & threatened species

- 11% of European saproxylic beetles are threatened (IUCN)
- Most threatened species community in Europe

Photo: Roger Key

*Limoniscus violaceus* adult and larva

Photo: Roger Key

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## Conservation - problems

- Species cannot survive indefinitely in a single tree
- Large populations of old trees required
- Variety of niches required
- Tree population may have an age gap

**Think about future generations of veteran trees**



Photo: Helen Read, Spain

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## Creating habitat!

Illustration: Per Axell  
Photos: Vikki Bengtsson, Roger Key, Ola Bengtsson



Where there are no 'future' veteran trees to close the generation gap it may be desirable to create some!

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## Ideal scenario

- Plenty of veteran trees, relatively close together
- Good age structure in tree population
- Flowering bushes and plants
- Sunny, sheltered open spaces
- Decaying wood in all shapes, sizes and locations!




Photo: Vikki Bengtsson, Sweden

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## Heritage & cultural value of veteran trees

Photo: Helen Read

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Photo: Vikki Bengtsson, Sweden

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## Cultural importance of veteran trees

- Historic link to person or event
- Illustrate past land use
- Part of a designed landscape
- Tree rings - historical records of past events
- Education/research resource

Photo: Vikki Bengtsson

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### Aesthetic importance of veteran trees

- Inspire people
- Encourage creativity
- Provide an air of stability
- Incorporated into formal designed landscapes to give an air of antiquity
- Some people think they are ugly – encourages debate!



Photo: Helen Read

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### Other values

- Landscape values
- Ecosystem services such as shade...
- Important gene pool (e.g. more variation, helpful for disease resistance, climate change etc)



Photo: Vikki Bengtsson, Epping Forest

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## Examples of definitions

- A tree that is very old, more than 1m dbh or hollow
- A tree that is of interest biologically, culturally or aesthetically because of its age, size or condition.




Photo: Vikki Bengtsson, Hallstad Angar, Sweden

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## Conclusion

- Diverse and species-rich communities
- Rare and specialised
- Fungi crucial
- Sustainable populations of trees essential
- Wide range of values




Photo: Vikki Bengtsson, Romania

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## Exercise 3: Outdoors

- Clipboards
- Pens
- Field forms
- Boots/waterproofs
- Water

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## Trees need space!



Photo: Vikki Bengtsson, Suffolk, England

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## Root protection area

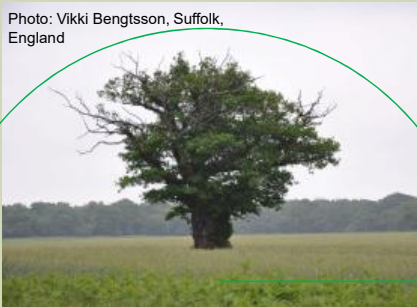


Photo: Vikki Bengtsson, Suffolk, England

15 x diameter of the trunk or 5m beyond the crown-spread - whichever is the greater!

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## Where have ancient trees come from?




Photo: Vikki Bengtsson, Windsor, England

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## Browsers or Natural Disasters?

Photos: Vikki Bengtsson, Luminita Holban; Sweden, Spain, Romania

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## Exercise 5: Browsers or Natural Disasters?

- What strategies do trees have for coping with being eaten?
- What strategies do trees have for regenerating?
- What strategies do trees have for coping with losing limbs?

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## Natural strategies

Photo: Vikki Bengtsson, Sweden

Photo: Vikki Bengtsson, England

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## Natural processes



Photo: Tom Joye



Photo: Helen Read

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## Tree management

- What are the problems for our veteran trees?
- When is management appropriate?
- What management is appropriate?
- How do you decide what to do?




Photo: Brian Cleckner  
Hampstead Heath, England

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Photo: Tom Joye

Overall aim: No avoidable loss of veteran trees

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## Where are they today?

Photo: Vikki Bengtsson, Ekolsund avenue, Sweden

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## What are the problems for veteran trees?

Photo: Vikki Bengtsson, England

Consequences of past management

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## Felling or other inappropriate management

Photo: Vikki Bengtsson, Sweden

Photo: Szarpanyos Arpad, Romania

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Poor management in urban environments



Photo: Tom Joye, Belgium

Tree diseases, climate change & pollution



Photo: Vikki Bengtsson, ash with *Chalara fraxinea*, Sweden

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### Site problems

Age gaps e.g. lots of old trees but no young




Photo: Vikki Bengtsson, Sweden

Heavy shade by surrounding trees




Photo: Vikki Bengtsson, England

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### Why are veteran trees different?




Photo: Vikki Bengtsson, veteran oak, Sweden

- Reduced vigour
- Risk of failure
- Decay
- Retrenchment
- Sensitive to change
- Competitively weaker
- But.. may exhibit more natural survival strategies

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## Why do anything at all?

Photo: Brian Cleckner, Windsor

Natural processes may be enough?

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## Things to consider: Surroundings

Photo: Tom Joye, sweet chestnut in beech plantation, Belgium

Does the land around the tree need management?

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## Things to consider: Site issues

Photo: Vikki Bengtsson, Spain

Management history; Risk of loss of the trees

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## Things to consider: Tree issues




Photo: Vikki Bengtsson, Sweden

Tree species, location, weather conditions; Response to past management; Associated rare & threatened species

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## Management Planning

- What needs to be done?
- What techniques to use?
- Long term planning vital




Photo: Vikki Bengtsson, hazel pollards in shade, Sweden

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## Clearance of competition - film




Photo: Helen Read

Photo: Vikki Bengtsson, ringbarking, Sweden

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## Managing the land around the tree - film

Photo: Vikki Bengtsson, trees damaged by sheep, England





Photo: Vikki Bengtsson, Hatfield Forest, England

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## Exercise 6: What is the ideal management for these trees?



Photo: Vikki Bengtsson, Västra Götaland, Sweden



Photo: Vikki Bengtsson, Östergötland, Sweden

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## Pruning techniques - film





Photo: Vikki Bengtsson, Östergötland, Sweden



Second cut  
Third cut  
Fourth cut

Photo: Vikki Bengtsson, Hatfield Forest, England

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## Remember future generations of trees are crucial for long term viability

Photo:Chris Knapman, Scotland

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Photo: Vikki Bengtsson , Windsor, England

## Questions?

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## Protection for our old trees

- Old, oak wooden ship - sunk on its maiden voyage!
- Cherished today as a national monument & rightly so

BUT

- Living ancient trees – older than the ship should be equally cherished!

Photo: Peter Isotala

Photo: Vikki Bengtsson , Sweden

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## Legislation & grants

- See Handout
- Common sense guide to risk - film



Photo: BrianCleckner, UK

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## Veteran trees - conclusions

- Biodiversity
- Ageing process and natural processes very important
- Veteran trees need space
- Plan any management very carefully
- Plan for the future
- Protect for the future



Photo: Helen Read, Spain

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## Further information



- Other VETree films
  - Managing risk
  - Managing for decay
  - Managing orchards
  - Lectures by David Lonsdale
  - Cutting pollards in a cycle

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Veteran Tree Network **VETREE**

- [www.vetree.eu](http://www.vetree.eu)
- [www.ancienttreeforum.co.uk](http://www.ancienttreeforum.co.uk)
- Join us on Facebook and Twitter





ANCIENT  
TREE  
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Please fill in your evaluation forms!

Photo: Vikki Bengtsson, Olanleku, Spain

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