

Veteran Tree Network VETREE Lifelong Learning Programme

Valuing and managing veteran trees

A training day delivered by the VETree project

Biskops Arnö, Sweden Photo: Vikki Bengtsson

Veteran Tree Network VETREE Lifelong Learning Programme

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Bertiz, Spain Photo: Ola Bengtsson

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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

Defining a veteran tree

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

Kvilleken, Sweden




Photo: Vikki Bengtsson

Exercise 1: Make a list of veteran tree characteristics



Photo: Helen Read, Urkiola, Spain

Some pictures to help



Photo: Brian Cleckner, Ashted Common, UK

Photo: Vikki Bengtsson, Fontainebleau, France

Photo: Helen Read, Spain

Why can trees live so long?

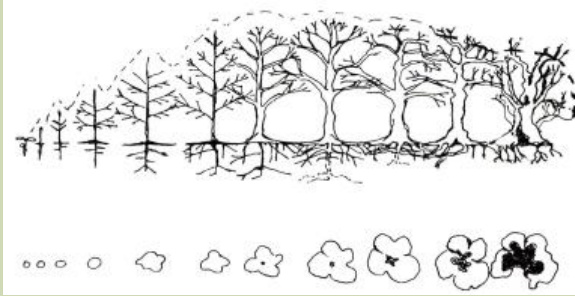


Illustration by Neville Fay (2002) after Raimbault (1995) and Lonsdale, (1999)

Loss of apical dominance

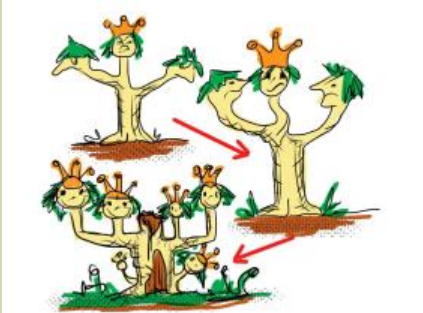


Illustration: Claus Mattheck

The King has lost his head

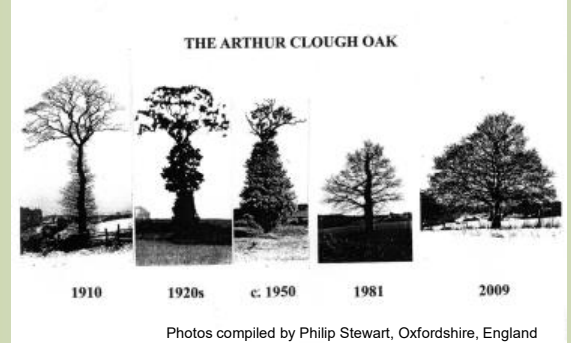


Photo: Vikki Bengtsson, Romania

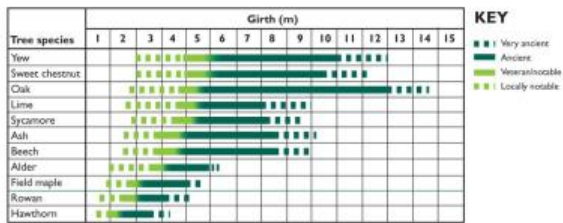
Photo: Vikki Bengtsson, Bodfach Park, Wales



Trees over time?



How different species vary in girth: handout



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)

Veteran trees are living ecosystems



Tree form/history is important

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



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

Nutrient cycling



Photo: Vikki Bengtsson, *Laetiporus sulphureus*.



Photo: Vikki Bengtsson, Ashted Common, England

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

Why is decay important?

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

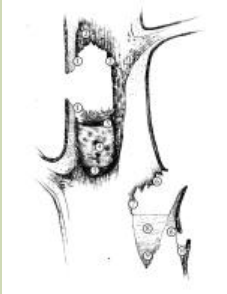


Illustration by Per Axell after Stokland et al. (2012)

Exercise 2: Recognising habitats




Illustration: Neville Fay

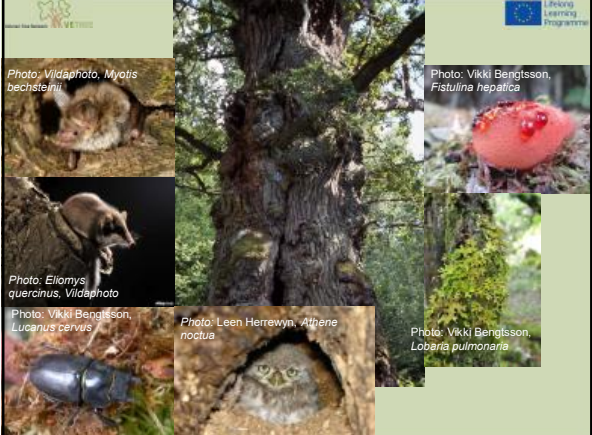


Photo: Vildaphoto, *Myotis bechsteinii*

Photo: Vikki Bengtsson, *Fistulina hepatica*

Photo: Eliornys quercinus, Vildaphoto

Photo: Vikki Bengtsson, *Lucanus cervus*

Photo: Leen Herrewyn, *Athene noctua*

Photo: Vikki Bengtsson, *Lobaria pulmonaria*

Invertebrates

Photo: Paul Richards,
millipede *Cymatopilus punctatus*




Photo: Roger Key
False scorpion *Dendrochernes cyrneus*




Photo: Roger Key
Wasp *Pemphredon lugubris*





Photo: Roger Key
Moth, *Moraphaga choragella*



Invertebrates

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

Photo: Roger Key,
Helophilus pendulus





Photo: Henk-Jan de Jong,
Cleasius serris (cobweb beetle) larva



- Larva and adult - different requirements
- Many rare!

Rare & threatened species

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

Photo: Roger Key



Photo: Roger Key



Limoniscus violaceus adult and larva

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



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!

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



Heritage & cultural value of veteran trees




Photo: Helen Read



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



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

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

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

Conclusion

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





Photo: Vikki Bengtsson, Romania

Exercise 3: Outdoors

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

Field form



Veteran tree management

Objectives:

- Decide where and when management is appropriate for old trees and their surroundings
- Give simple guidelines for the appropriate management of old trees
- Describe three natural strategies by which trees respond to damage

Exercise 4: Roots

- True/false session

Trees need space!

Photo: Vikki Bengtsson, Suffolk, England

Root protection area

Photo: Vikki Bengtsson, Suffolk, England

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

Where have ancient trees come from?

Photo: Vikki Bengtsson, Windsor, England

Browsers or Natural Disasters?

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

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?

Natural strategies

Photo: Vikki Bengtsson, Sweden

Photo: Vikki Bengtsson, England






Natural processes

Photo: Tom Joye



Photo: Helen Read



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 Clackner
Hampstead Heath, England



Photo: Tom Joye



Overall aim: No avoidable loss of veteran trees




Where are they today?

Photo: Vikki Bengtsson, Ekolsund avenue, Sweden



What are the problems for veteran trees?




Photo: Vikki Bengtsson, England

Consequences of past management




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

Things to consider: Tree issues




Photo: Vikki Bengtsson, Sweden

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

Management Planning

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



Photo: Vikki Bengtsson, hazel pollards in shade, Sweden

Clearance of competition - film



Photo: Helen Read



Photo: Vikki Bengtsson, ringbarking, Sweden

Managing the land around the tree - film



Photo: Vikki Bengtsson, trees damaged by sheep, England



Photo: Vikki Bengtsson, Hatfield Forest, England

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



Photo: Vikki Bengtsson, Västra Götaland, Sweden



Photo: Vikki Bengtsson, Östergötland, Sweden

Pruning techniques - film





Photo: Vikki Bengtsson, Östergötland, Sweden



Second cut
Third cut
Fourth cut

Photo: Vikki Bengtsson, Hatfield Forest, England

Remember future generations of trees are crucial for long term viability

Photo: Chris Knapman, Scotland



Photo: Vikki Bengtsson, Windsor, England



Questions?

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



Legislation & grants

- See Handout
- Common sense guide to risk - film



Photo: BrianCleckner, UK

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

Further information

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




Veteran Tree Network **VETREE**

- www.vetree.eu
- www.ancienttreeforum.co.uk
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Small text in top right: Learning Programme

