

Veteran Tree Network  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 project



Bertiz, Spain Photo: Ola Bengtsson

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

Introductions

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



Photo: Helen Read, Romania

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

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



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: Helen Read, Spain

Photo: Vikki Bengtsson, Fontainebleau, France

Why can trees live so long?

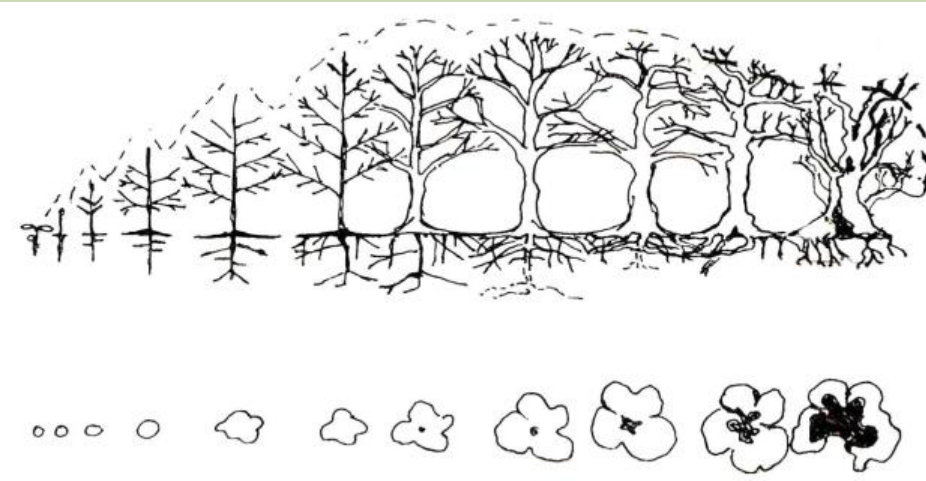


Illustration by Neville Fay (2002) after Raimbault (1995) and Lonsdale, (1999)

Loss of apical dominance

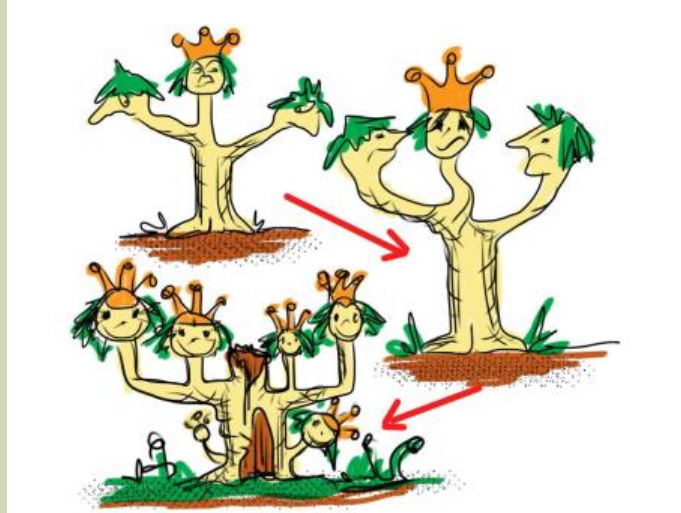


Illustration: Claus Mattheck



The King has lost his head

Photo: Vikki Bengtsson,
Romania




Photo: Vikki Bengtsson,
Bodfach Park, Wales





Trees over time?

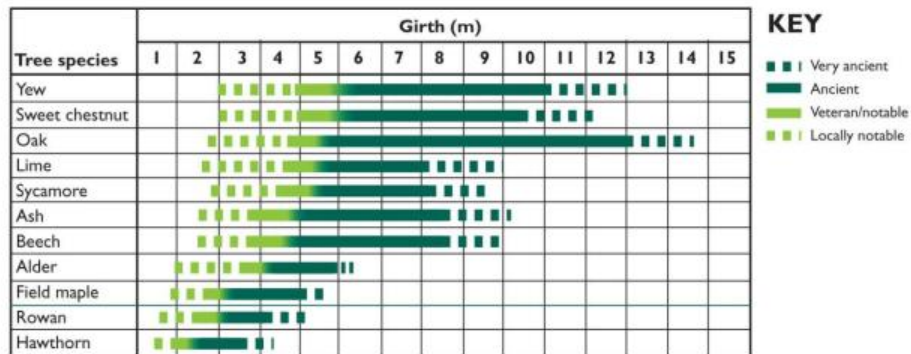
THE ARTHUR CLOUGH OAK



1910 1920s c. 1950 1981 2009


Photos compiled by Philip Stewart, Oxfordshire, England

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 Tree Network

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

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

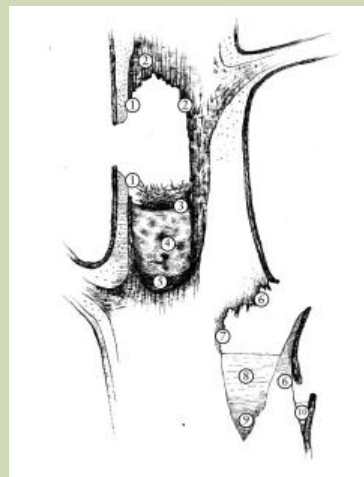


Illustration by Per Axell after Stokland et al. (2012)

Exercise 2: Recognising habitats

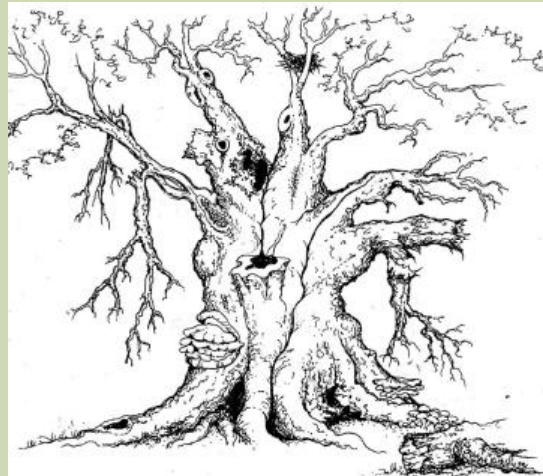
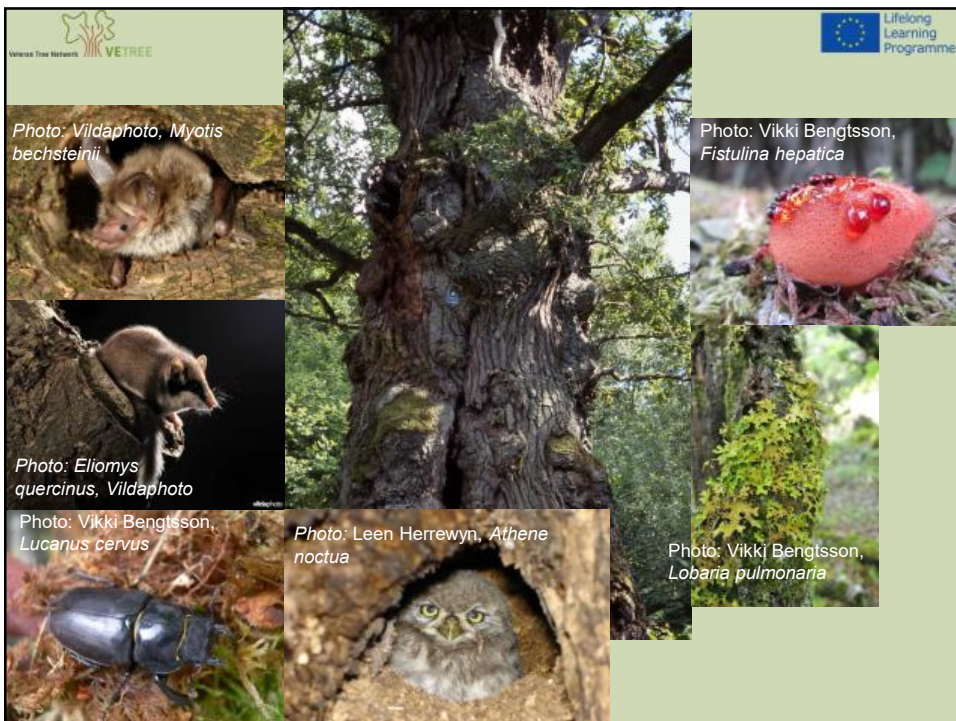




Illustration: Neville Fay





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Invertebrates

Photo: Paul Richards,
millipede *Cylindroiulus punctatus*




Photo: Roger Key
False scorpion *Dendrochernes cyrneus*




Photo: Roger Key
Wasp *Pemphredon lugubris*







Photo: Roger Key
Moth, *Moraphaga choragella*





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Invertebrates

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





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

Photo: Roger Key,
Helophilus pendulus



- 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

Limoniscus violaceus
adult and larva



Photo: Roger Key

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



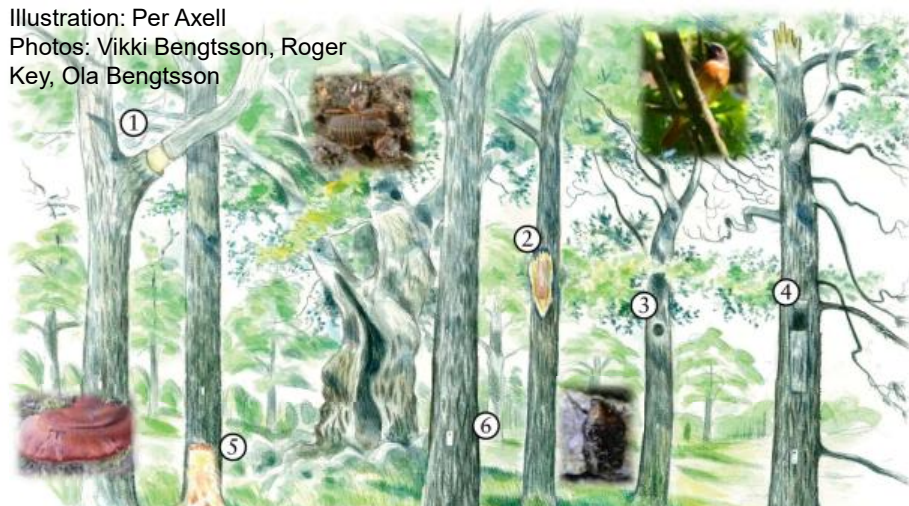
Photo: Helen Read, Spain

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



Photo: Vikki Bengtsson, Sweden

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



Photo: Vikki Bengtsson, England

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 Ångar, 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 Habitat Assessment Practical Exercise Field Form

NAME

1 DATE

2 SITE

3 GRID REF

4 WHERE IS THE TREE LOCATED?

☐ Roadside ☐ Church ☐ Cemetery (road) ☐ Bear park ☐ Garden

☐ Hedge/line ☐ Orchard ☐ Park ☐ Plantation ☐ Pasture

☐ Urban ☐ Avenue ☐ Woodland ☐ Other

5 TREE SPECIES

☐ Ash ☐ Birch ☐ Hawthorn ☐ Holly ☐ Horse Chestnut

☐ Hornbeam ☐ Juniper ☐ Oak ☐ Holly ☐ Sweet Chestnut

☐ Sycamore ☐ Willow ☐ Yew ☐ Other species

☐ Elm ☐ Lignum ☐ Other species

6 YOUNG GROWTH AT 1.3m ABOVE GROUND LEVEL

☐ Under 200 cm ☐ 200 - 400 cm ☐ 400 - 600 cm ☐ Over 600 cm

7 TREE FORM

☐ Mature ☐ Pollard in cycle ☐ Lopped pollard ☐ Coppice ☐ Shrub

8 STANDING/FALLEN


☐ Upright ☐ Leaning ☐ Root plate lifting ☐ Lying/fallen ☐ Other

9 WOUND/BIAS

☐ Alive ☐ Dead ☐ Unsure

10 HOLLOW TRUNK

Does the trunk have holes? ☐ Yes (1 2 3 4) ☐ No ☐ Unsure



11 HOLES Are there any holes over 5 cm in the main branches? ☐ Yes ☐ No

12 HEAVY DEAD WOOD Is there a lot of deadwood in the crown? ☐ Yes ☐ No

13 FALLEN DEAD WOOD Is there a lot of fallen deadwood on the ground? ☐ Yes ☐ No

14 TEARS/SCARS/LIGHTNING STRIKES/SAP RUNS/WATER POCKETS Are there any tears, scars, lightning strikes, sap runs or water pockets on the tree? ☐ Yes ☐ No

15 DISCOVERY/NOT Is there any white rot on the tree? ☐ Yes ☐ No

Is there any brown rot on the tree? ☐ Yes ☐ No

Is there any wood rot in the tree? ☐ Yes ☐ No

16 WHAT ELSE IS GROWING ON THE TREE?

☐ Traditional fungi ☐ Bracket fungi ☐ Lichens ☐ Mosses

☐ Other plants (e.g. Violets, Violas, etc.) ☐ Nothing

17 WHAT SIGNS OF ANIMAL LIFE ARE THERE?

☐ insect boring/exit holes ☐ Bird nesting (in holes) ☐ Bat roosts ☐ None

GENERAL SECTION

18 How would you describe the quality of the habitat in the tree?

How would you classify the quality of the habitat?

☐ Very high ☐ High ☐ Medium ☐ Low ☐ None

19 Are there any important landscape issues associated with the tree? If so, please list them.

What landscape value would you give this tree?



☐ Very high ☐ High ☐ Medium ☐ Low ☐ None

20 What factors, if any, pose a current threat to the tree?

How would you class these threats?

☐ Very high ☐ High ☐ Medium ☐ Low ☐ None

Assessed form an original produced by the Royal Forestry Department (Forestry Commission) for the Veteran Tree Network project. Revisions of this form are made available to the public.

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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

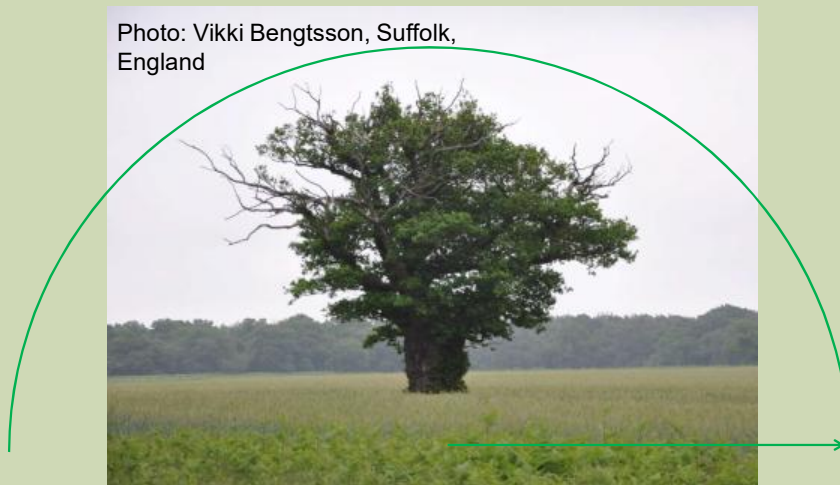
Trees need space!




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

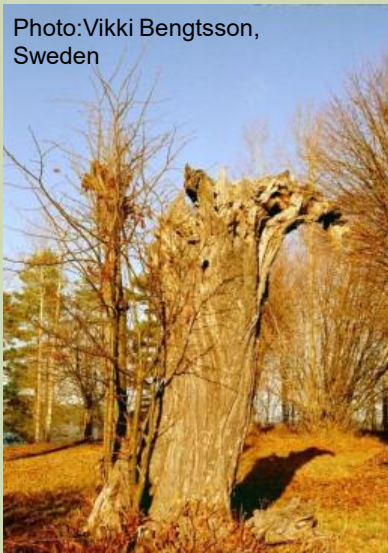


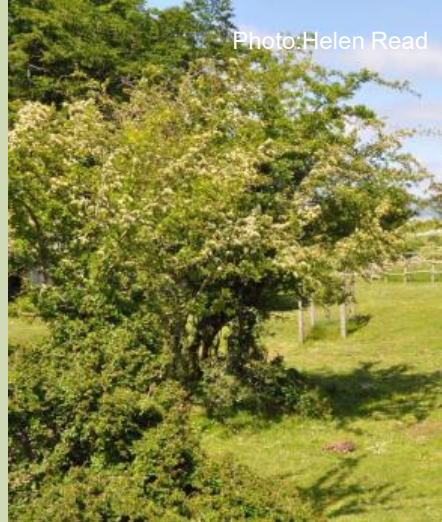
Photo: Vikki Bengtsson,
England

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 Cleckner
Hampstead Heath, England



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

A photograph of a row of tall, bare trees in a park. The trees are thin and have no leaves, standing against a blue sky with white clouds. The ground is covered with dry leaves.

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





Poor management in urban environments

Tree diseases, climate change & pollution








Photo: Tom Joye, Belgium

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






Site problems

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

Heavy shade by surrounding trees






Photo: Vikki Bengtsson, Sweden

Photo: Vikki Bengtsson, England

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

Why do anything at all?



Photo: Brian Cleckner, Windsor

Natural processes may be enough?

Things to consider: Surroundings



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

Does the land around the tree need management?

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



Managing the land around the tree - film






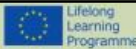

Exercise 6: What is the ideal management for these trees?



Photo: Vikki Bengtsson, Västra Götaland, Sweden



Photo: Vikki Bengtsson, Östergötland, Sweden

Pruning techniques - film




Photo: Vikki Bengtsson, Östergötland, Sweden

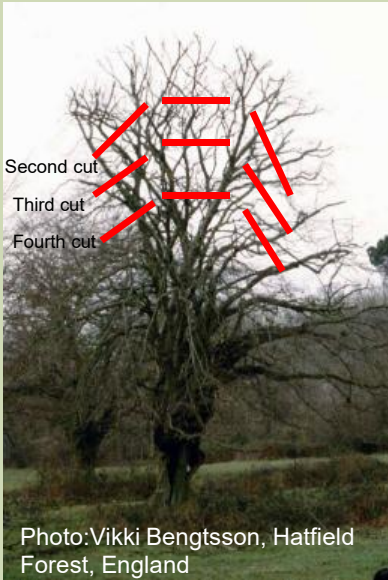


Photo: Vikki Bengtsson, Hatfield Forest, England

Remember future generations of trees are crucial for long term viability

Photo: Chris Knapman, Scotland



Photo: Vikki Bengtsson, Windsor, England



Protection for our old trees

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



Photo: Peter Isotala

BUT

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



Photo: Vikki Bengtsson, Sweden

Legislation & grants

- See Handout
- Common sense guide to risk - film



Photo: BrianCleckner, UK

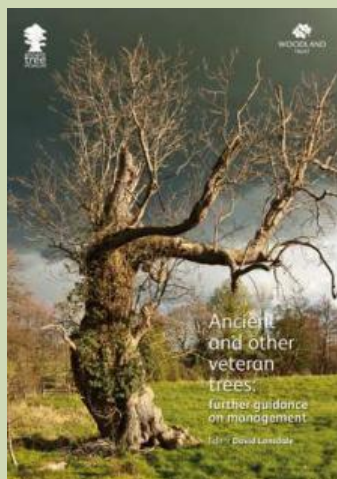
Veteran trees - conclusions

- 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

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Veteran Tree Network **VETREE**

- www.vetree.eu
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