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

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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

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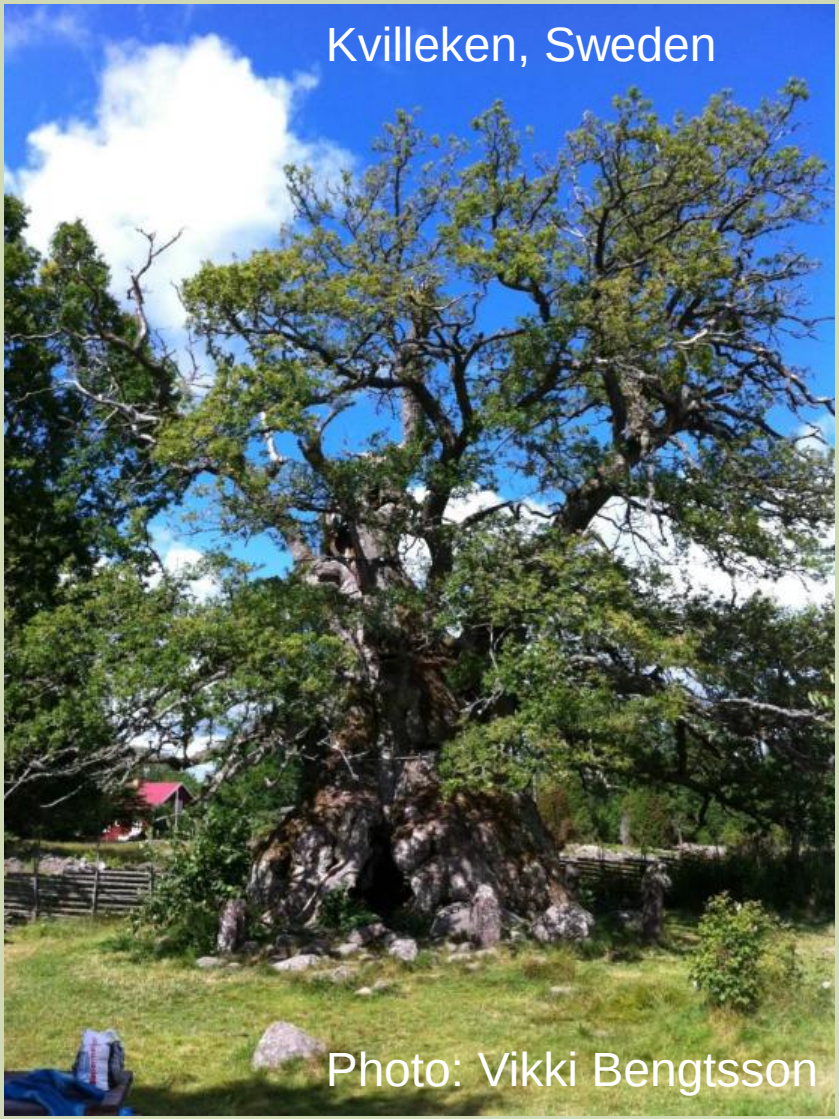
Old trees are among the things that bind us to one another and to our past

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



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Exercise 1: Make a list of veteran tree characteristics

Photo: Helen Read, Urkiola, Spain

Some pictures to help

Photo: Brian Cleckner, Ashtead 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

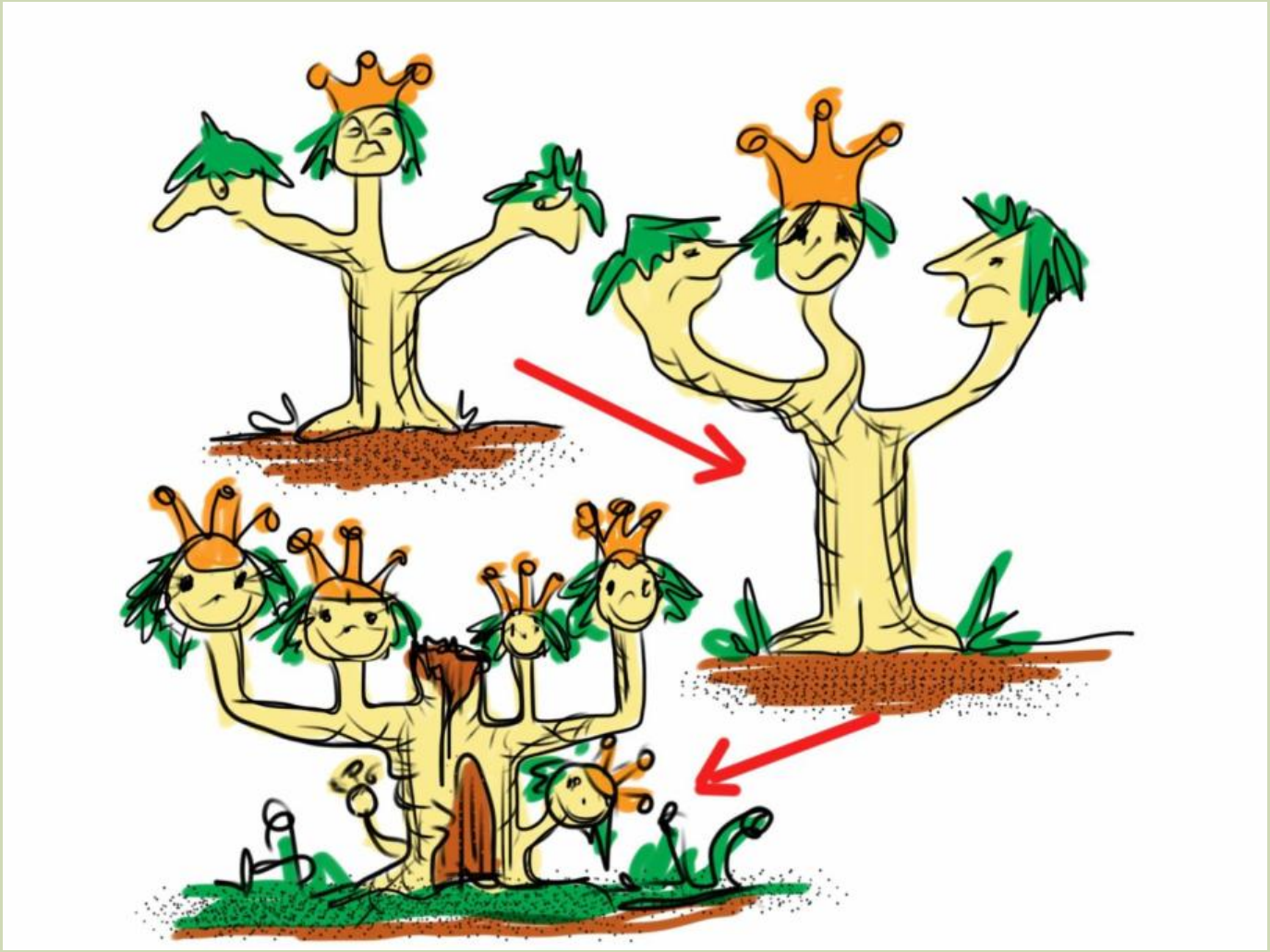


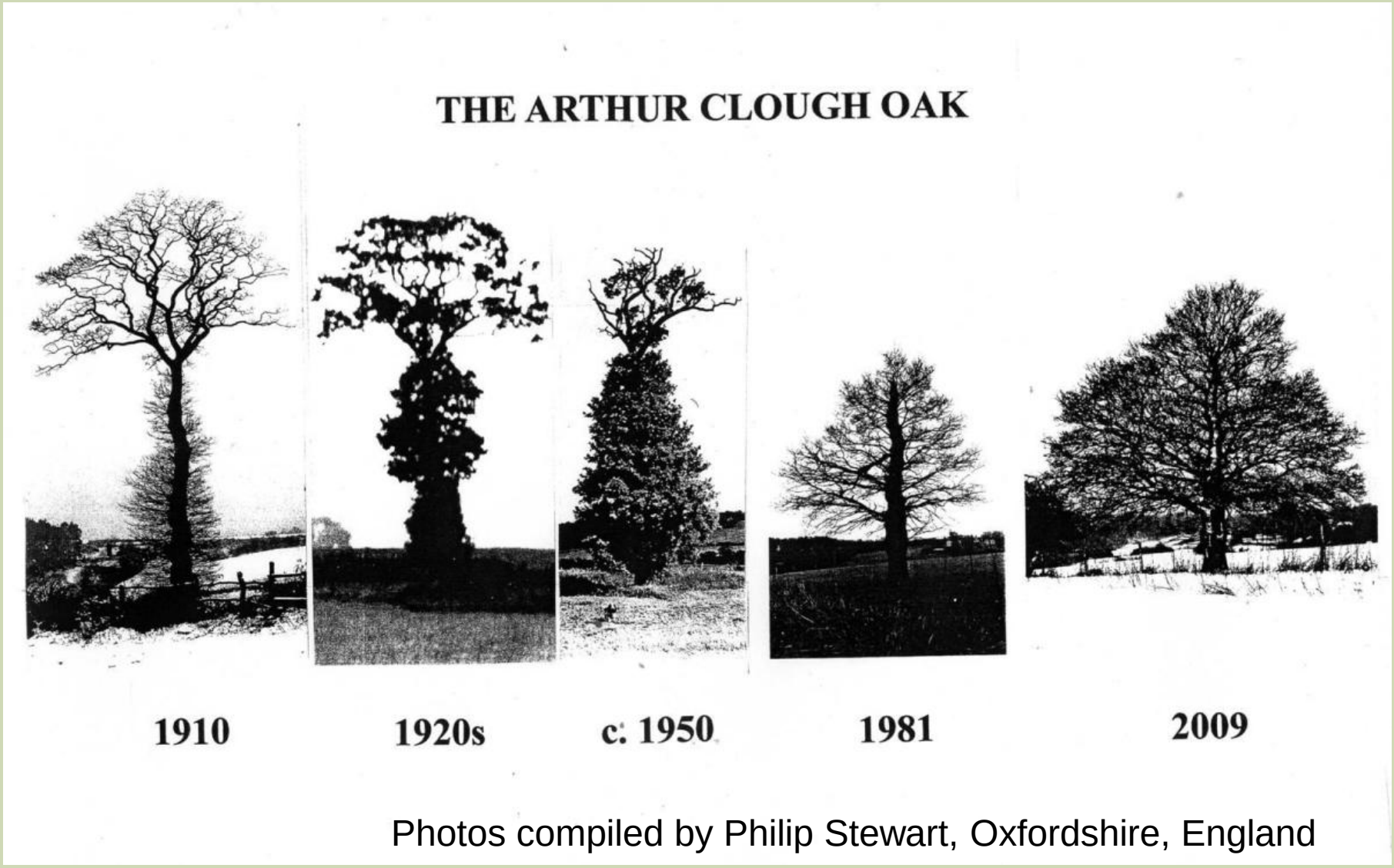
Illustration: Claus Mattheck

The King has lost his head

Photo: Vikki Bengtsson, Romania

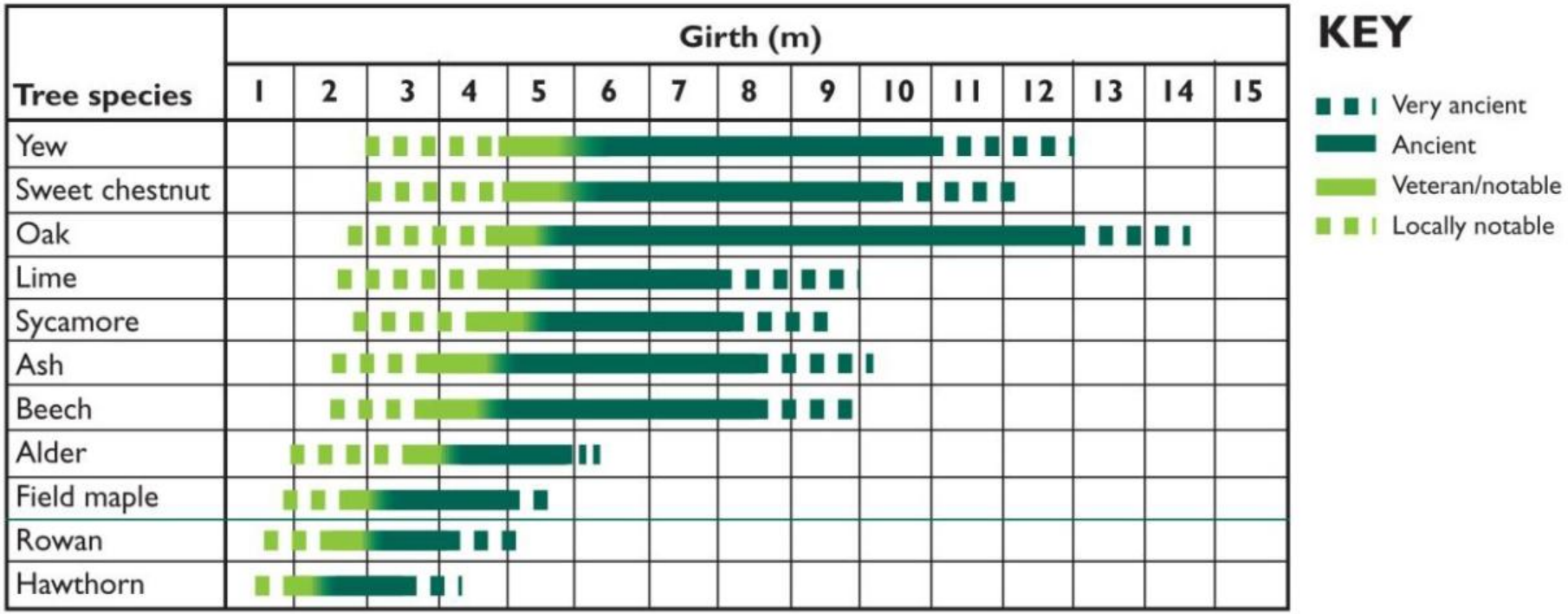

Photo: Vikki Bengtsson,
Bodfach Park, Wales

Trees over time?



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)

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Veteran trees are living ecosystems

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

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Nutrient cycling

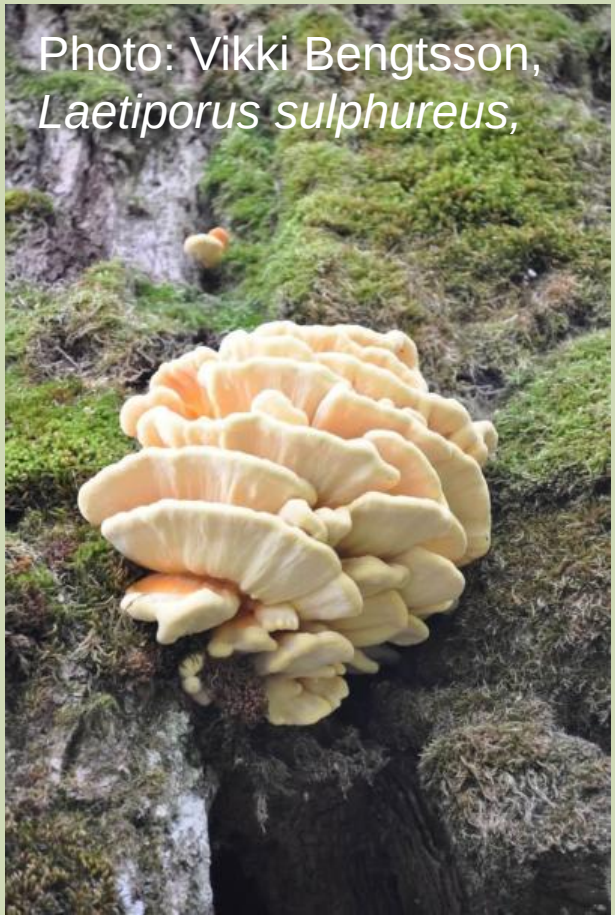

Photo: Vikki Bengtsson, *Laetiporus sulphureus,*

Photo: Vikki Bengtsson, Ashtead 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

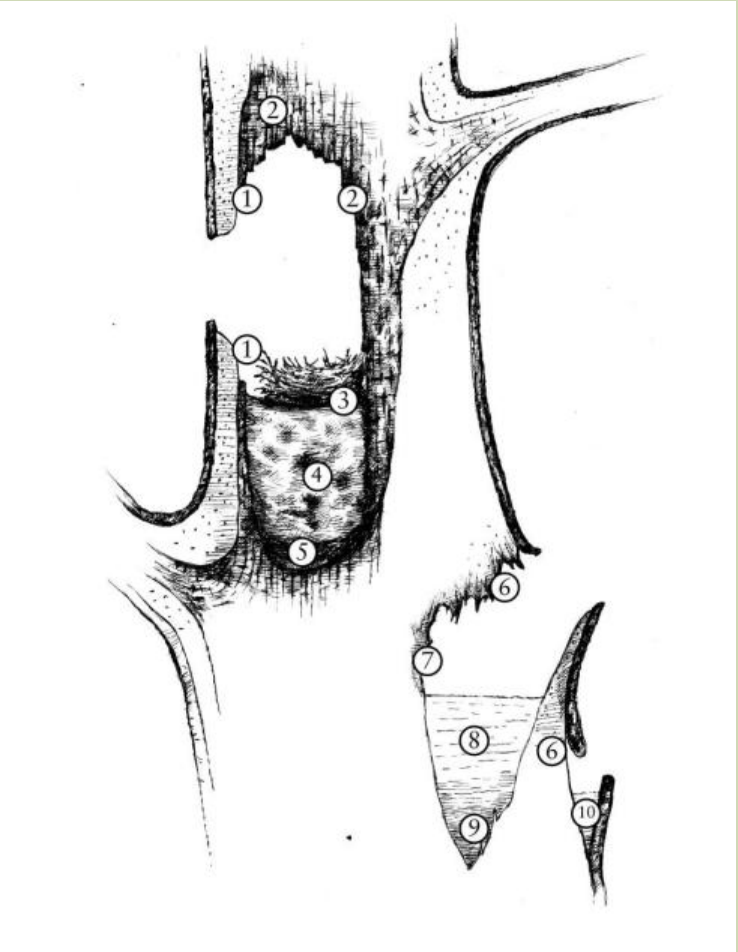

Illustration by Per Axell after Stokland et al. (2012)

Exercise 2: Recognising habitats

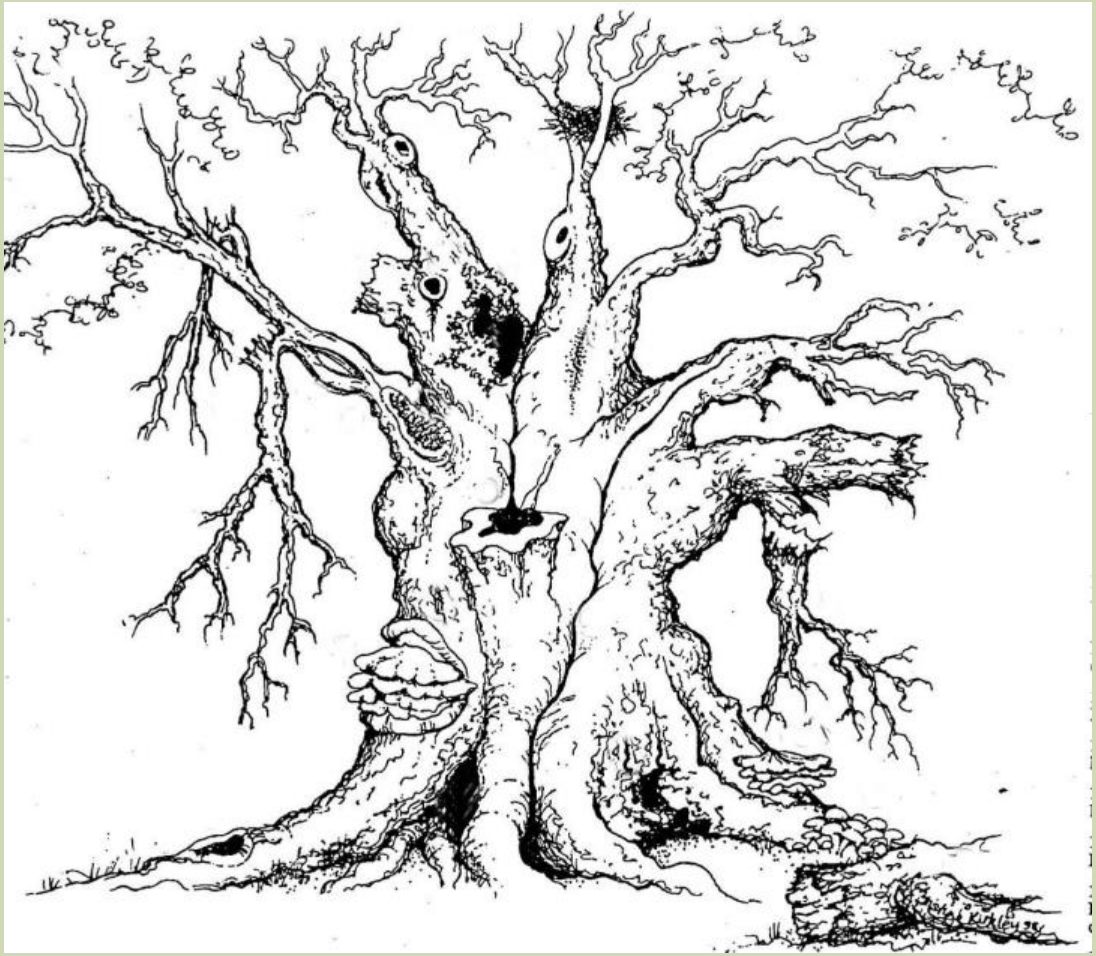

Illustration: Neville Fay

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Photo: Vildaphoto, Myotis bechsteinii

Photo: Eliomys quercinus, Vildaphoto

Photo: Vikki Bengtsson, *Lucanus cervus*

Photo: Leen Herrewyn, *Athene noctua*

Photo: Vikki Bengtsson, *Fistulina hepatica*

Photo: Vikki Bengtsson, *Lobaria pulmonaria*

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*

Invertebrates

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

Photo: Roger Key,
Helophilus pendulus

Photo: Henk-Jan de Jong,
Ctesias serra (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

Limoniscus violaceus adult and larva

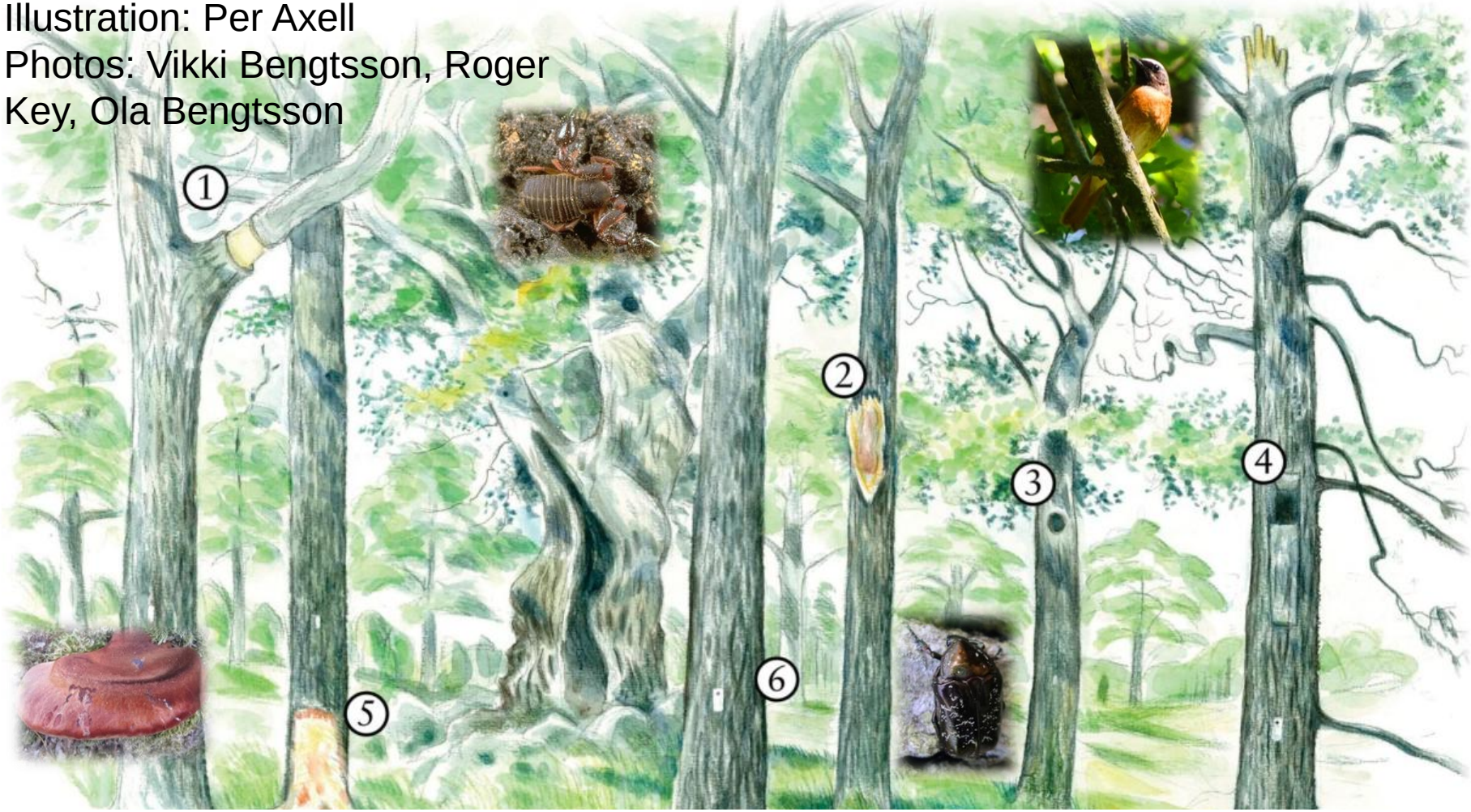
Conservation - problems

- 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

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

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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 Ängar, 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.

Tick the boxes ☐

TREE AND HABITAT DETAILS

4 WHERE IS THE TREE LOCATED?

☐ Arable ☐ Church ☐ Common land ☐ Deer park ☐ Garden
☐ Hedgerow ☐ Orchard ☐ Park ☐ Plantation ☐ Pasture
☐ Urban ☐ Avenue ☐ Woodland Other

5 TREE SPECIES

☐ Ash ☐ Beech ☐ Hawthorn ☐ Holly ☐ Horse Chestnut
☐ Hornbeam ☐ Lime ☐ Oak ☐ Poplar ☐ Sweet Chestnut
☐ Sycamore ☐ Willow ☐ Pine
☐ Yew ☐ Spruce Other species

6 TRUNK GIRTH AT 1.3m ABOVE GROUND LEVEL

☐ under 250 cm ☐ 251 - 300 cm ☐ 301 - 350 cm
☐ 351 - 420 cm ☐ 421 - 600 cm ☐ over 601 cm

7 TREE FORM

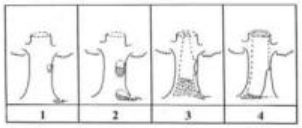
☐ Maiden ☐ Pollard in cycle ☐ Lapsed pollard ☐ Coppice ☐ Stump

8 STANDING/FALLEN

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

9 LIVE/DEAD ☐ 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 ☐ Yes ☐ No
Are there any tears, scars, lightning strikes, sap runs or water pockets on the tree?

15 DECAY/ROT
Is there any white rot on/in the tree? ☐ Yes ☐ No
Is there any brown rot on/in the tree? ☐ Yes ☐ No
Is there any wood mould in the tree? ☐ Yes ☐ No

16 WHAT ELSE IS GROWING ON THE TREE?

☐ Toadstool fungi ☐ Bracket fungi ☐ Lichens ☐ Mosses
☐ Other plants (e.g. Ferns, Mistletoe, Ivy) ☐ Nothing

17 WHAT SIGNS OF ANIMAL LIFE ARE THERE?

☐ Insect boring/exit holes ☐ Birds 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 ☐ Moderate ☐ 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 ☐ Moderate ☐ Low ☐ None

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

How would you class these threats?
☐ Very high ☐ High ☐ Moderate ☐ Low ☐ None

Amended from an original produced by Neville Fay of Treework Environmental Consultancy in connection with the Veteran Trees Initiative Project. Illustration of hollows kindly provided by Nicklas Jansson.

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

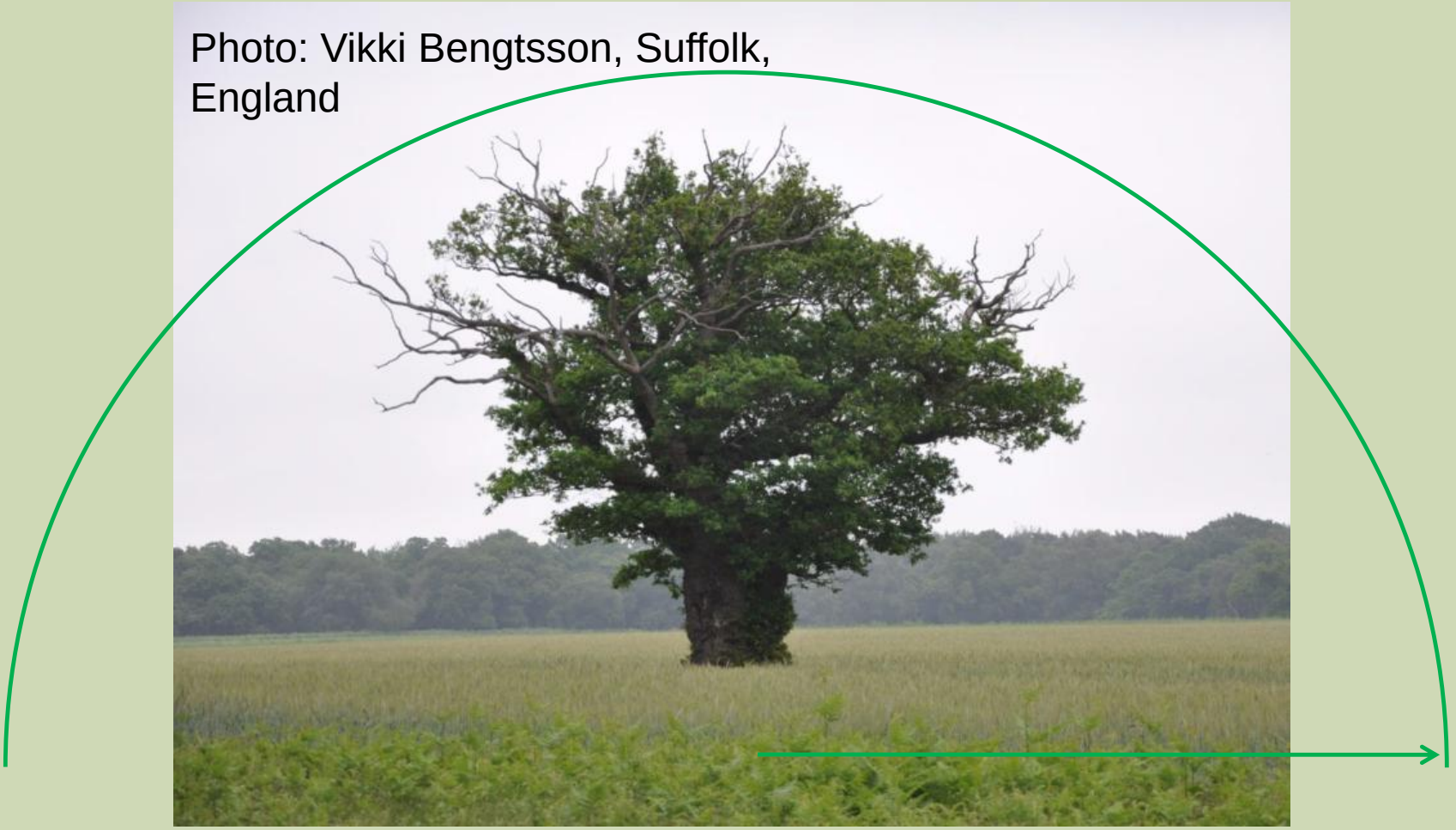
Exercise 4: Roots

- True/false session

Trees need space!

Photo: Vikki Bengtsson, Suffolk, England

Root protection area



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

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

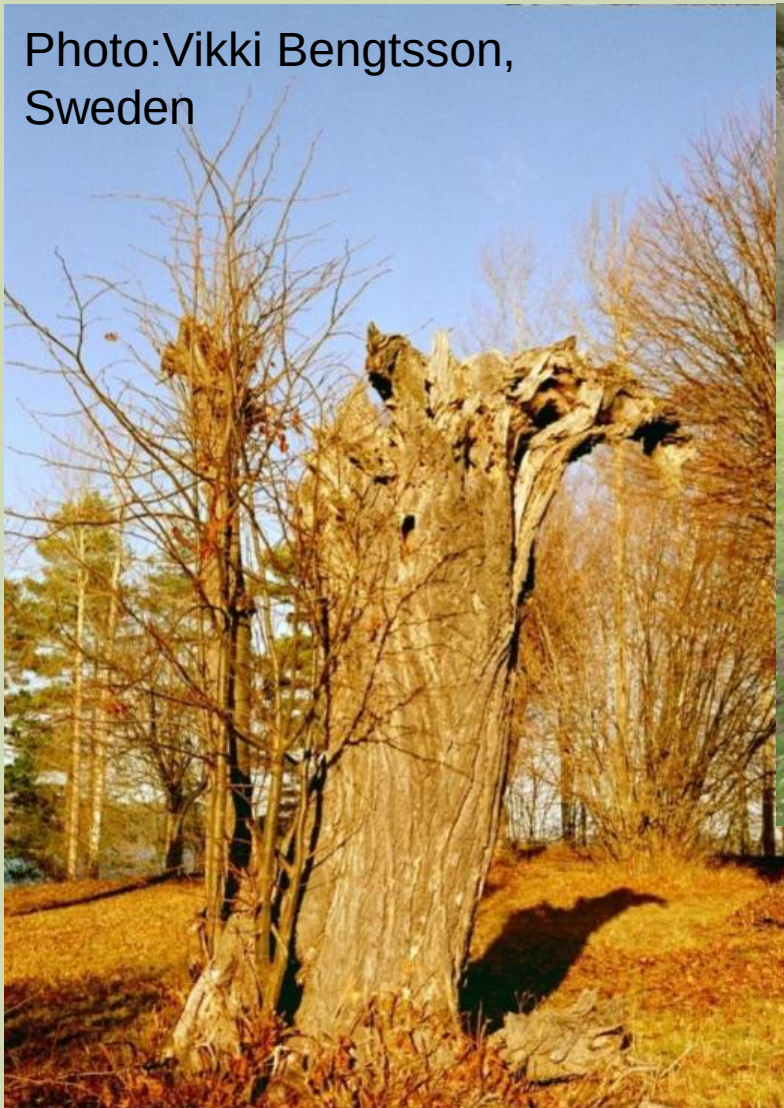
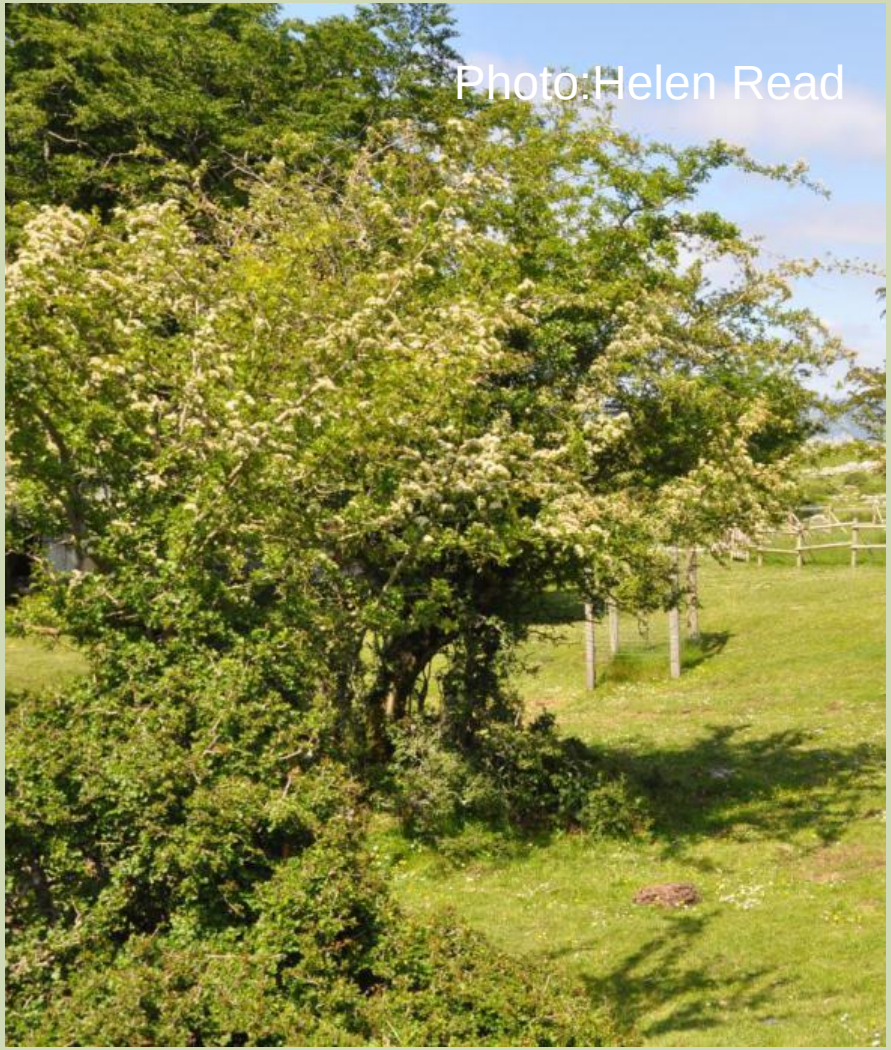


Photo: Vikki Bengtsson,
England

Natural processes



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

Overall aim: No avoidable loss of veteran trees

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Where are they today?

What are the problems for veteran trees?

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

Site problems

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

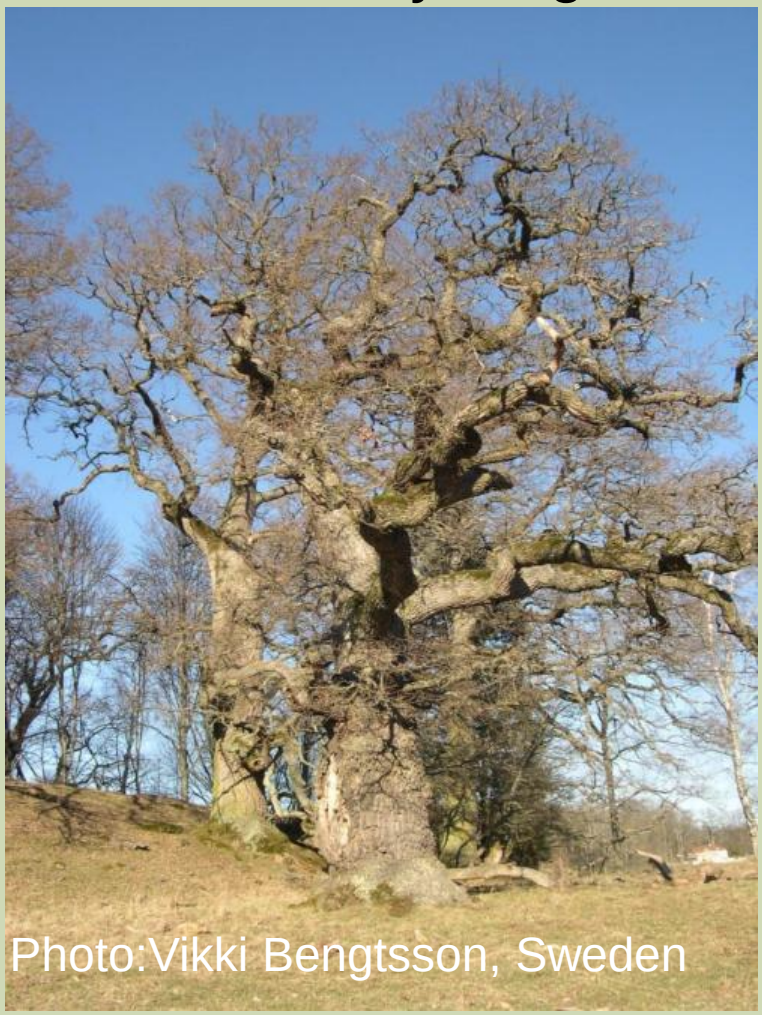

Photo:Vikki Bengtsson, Sweden

Heavy shade by surrounding trees

Photo:Vikki Bengtsson, England

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?

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

Management history; Risk of loss of the trees

Things to consider: Tree issues

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

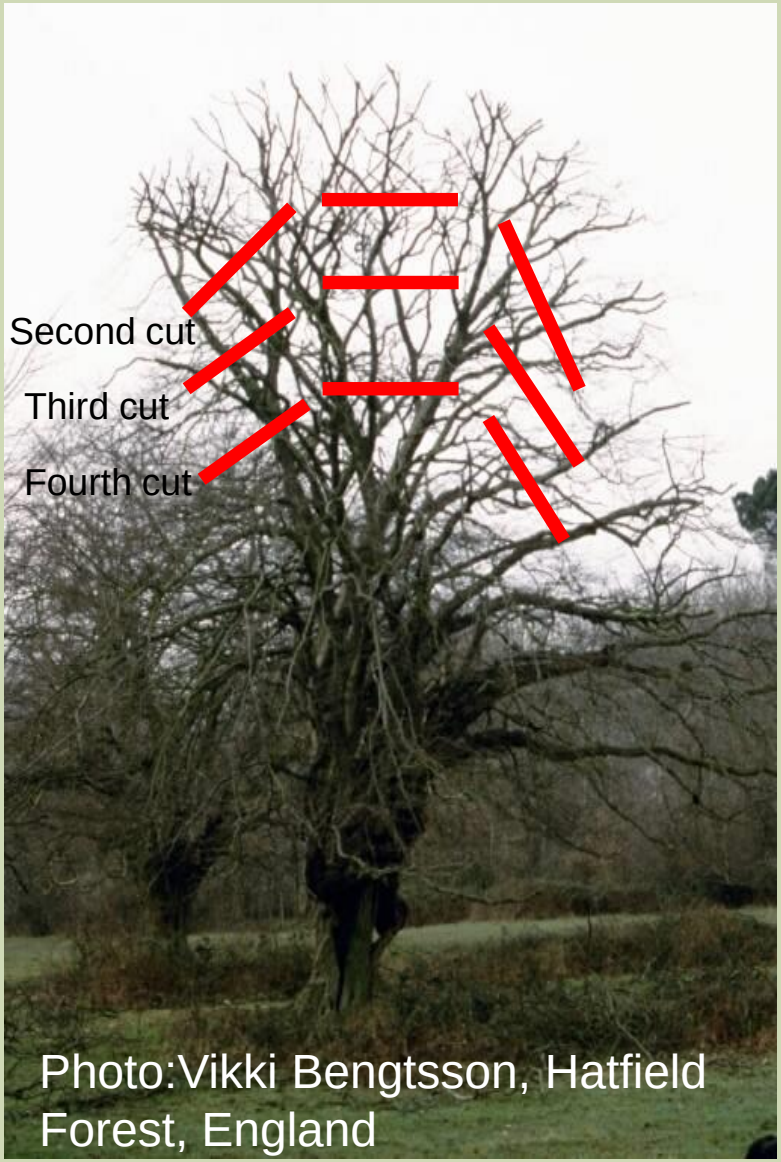

Photo:Vikki Bengtsson, Hatfield Forest, England

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Remember future generations of trees are crucial for long term viability

Photo:Chris Knapman, Scotland

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!

Legislation & grants

- See Handout
- Common sense guide to risk - film

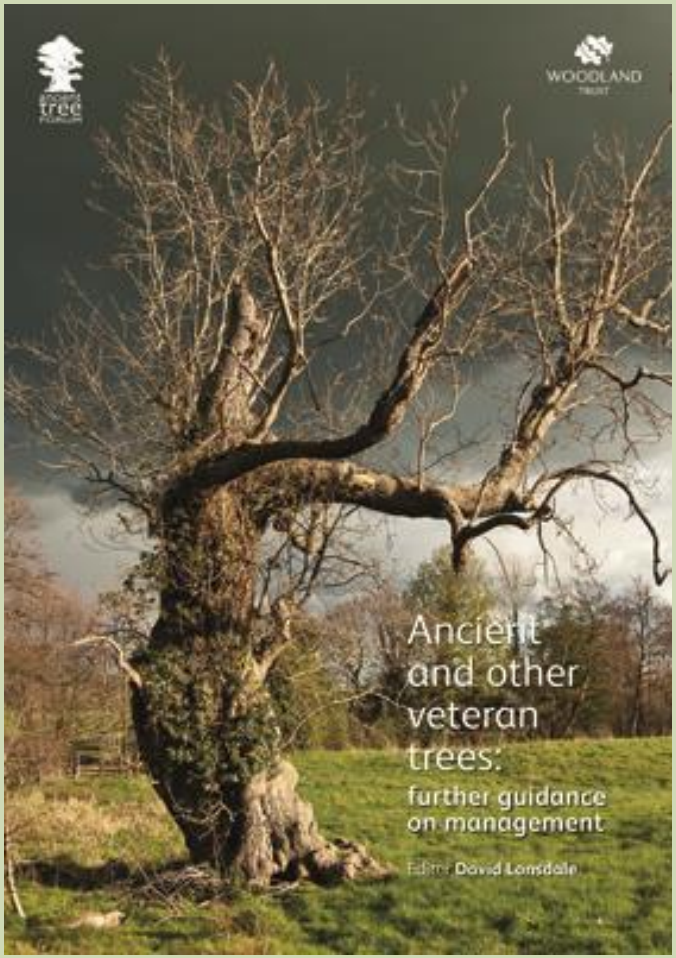
Photo: BrianCleckner, UK

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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- www.vetree.eu
- www.ancienttreeforum.co.uk
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Please fill in your evaluation forms!
Photo: Vikki Bengtsson , Oianleku, Spain