Pixton Park Ancient and Veteran Tree Assessment 2015

First published: March 2022

Natural England Commissioned Report NECR379

www.gov.uk/natural-england

Natural England Commissioned Report NECR379

Pixton Park Ancient and Veteran Tree Assessment 2015

John Smith

Published March 2022

ISBN: 978-1-78354-799-9

Project details

This report should be cited as:
Smith, J. 2022. Pixton Park Ancient and Veteran Tree Assessment 2015. *Natural England Comissioned Reports, Report Number* 379

Natural England Project manager

Louise Riley

Contractor

Mosaic Mapping

Author

John Smith

Keywords

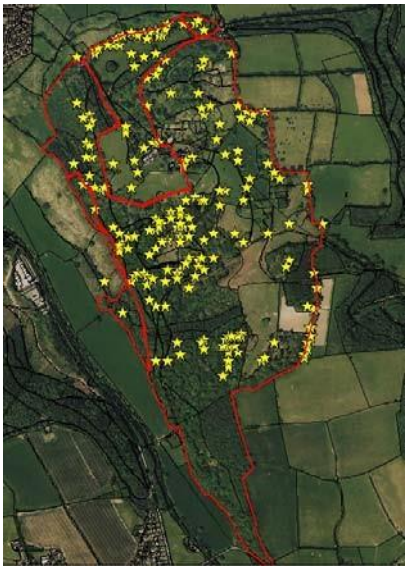
Pixton Park, Mosaic Mapping, veteran trees, notification

Further information

Pixton Park Ancient and Veteran Tree Assessment 2015

Mosaic Mapping was contracted by Natural England to survey Pixton Park, Dulverton, Somerset (see map below) and assess the veteran tree resource. It is proposed that it becomes a new SSSI and it is necessary to understand the nature and extent of this habitat in order to determine if it fulfils the JNCC criteria for notification.

To do this fieldwork was carried out over four days in February and also four in March 2015. At this time of year the trees are yet to leaf and discovering, inspection and GPS mapping is easier. John Smith of Mosaic Mapping undertook the survey, aided on the first visit by Alan Lucas, who also produced an initial fungus list concentrating on those associated with dead wood habitats.



The survey area – tree locations from a previous survey (data from SERC*) shown in yellow (Natural England GIU)

*Somerset Environmental Records Centre

Methodology

Survey Areas

The survey area consists of a number of different ownerships indicated by the red lines – see map above. Together these encompass the area shown as Pixton Park (Deer Park) on early OS mapping.

Steart Wood, essentially a plantation to the south, is excluded from the survey as it consists of close-grown woodland oak. (Natural England GIU)

Previous survey

Data from 1990, 1995 and 1999 was provided by SERC. Consisting of 203 records including grid references it was hoped to use this to guide the current survey, however, the inaccuracy of the mapping meant that we could not do so. The data was issued with the following proviso -

Bear in mind that GPS was pretty bad in those days and we did revert to using a ten-metre grid on paper to visually place the trees after problems using GPS, which was at about 10-30m resolution.

The image below of a central section of the park shows tree locations misplaced by some distance. Without any quick means of identification, for example, tags, it was not possible to be certain which tree was being inspected. The decision was taken therefore to re-map throughout the survey area.

(Natural England GIU)

Outside the Survey Area

As the intention of the survey is to inform the process of defining boundaries of a potential SSSI (pSSSI) casual observations were made of adjoining areas.

A number of veteran-looking trees are to be found in the fields and field boundaries to the north of the survey area, as well as a few more isolated large oak in the flood plain to the west. On the eastern edge, a number of oak and beech were not included in the original survey, lying just outside the boundary fence and though they have not been included in this survey their locations have been recorded.

To the south, the layered beech seen in hedgerows are typical of many 19th C field boundaries in the Exmoor area.

Trees Surveyed

During the first visit trees were mapped across the site, with basic information also being recorded, and they were given an ID in the sequence 1 – 384. The following 7 numbers were not utilised (mainly because of the difficulty in trying to follow the previous survey and match up the numbers) - 36, 38-41, 53, and 211 – the last was duplicated during the survey.

A number of specimen trees of exotic evergreen species were seen, part of the designed landscape associated with Pixton House, these were not included in the survey.

During the second visit, 12 more trees were plotted and assigned ID's of 401 to 412. This gives a total of 389 trees plotted on the map.

During this visit the majority of the trees 1-384 and some of the 12 extra trees were surveyed. In all 366 0f the 389 trees were surveyed to a more detailed level.

To give a better picture of the parkland, 22 trees in the open areas of the enclosed section of the Deer Park were plotted quickly. The positions of a row of 20 beech trees were also recorded near the SE site boundary. 14 trees, on or just over the boundary, and not previously surveyed are also plotted, as are 14 apparently significant trees visible some distance from the site.

Survey protocol

Trees of the following species were recorded, using the proforma given in Appendix II.

Species	Number of trees
Beech	142
Oak	86
Sweet Chestnut	40
Turkey Oak	33+1?
Lime	26
Ash	19
Birch	10
Sycamore	9
Plane	6
Red Oak	5+1?
Hawthorn	3
Copper Beech	1
Elm	1
Field Maple	1
Holm Oak	1
Horse Chestnut	2
Lucombe Oak	1
Walnut	1

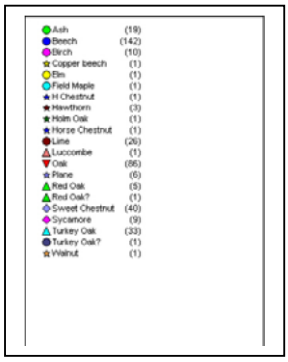
Data outputs

Data for the mapped and surveyed trees within the survey area is held in a spreadsheet, including grid references to enable importation into a Geographic Information System (GIS). A separate data table “other trees” holds location information for the other categories of trees described above.

Tree locations within the survey area

(Natural England GIU)

Species key



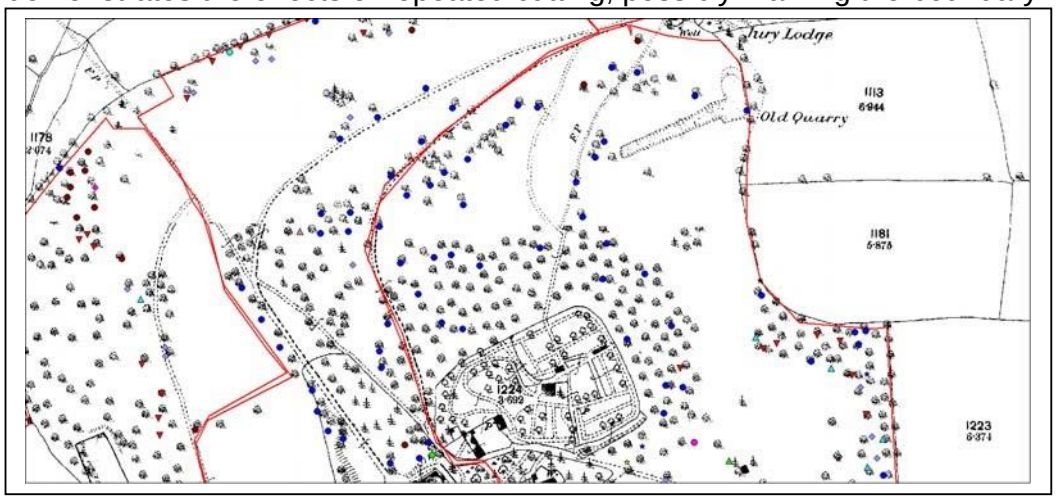
Species Notes

Beech

These trees, with a good spread of age classes, are found in three general areas; around and to the north of Pixton Park House, along the south-eastern boundary and a roundel and further cluster within the woodland towards the top of the central southern slope.

Early OS mapping suggests a design element to the presence of those around the house, as does the roundel, which would be in view from the house to the south.

The ancient pollard shown below, on a boundary bank, might be of the same cohort. It demonstrates the effects of repeated cutting, possibly marking the boundary here.



Early OS mapping showing with survey data superimposed – beech in blue (Natural England GIU)

Ancient Beech Pollard 207 on boundary bank (©Mosaic Mapping)

Collapsed beech No 261 in roundel, looking north towards Pixton Park (©Mosaic Mapping)

Oak

Occurring generally in four concentrations, one in the higher (east) park, another in a valley to the south, eight large trees last a strip to the west, and a number along the northern hedgebank, oak is the species associated with long established parkland. An example of a fine parkland (open grown) ancient oak is shown below. Sadly, most of those in the third group are dead, with two trees (164 165) retaining some live growth and in urgent need of halo releasing. There is quite a number of mature oak, of about 1 metre girth, in the woodland adjoining the northern boundary of Steart Wood.

Ancient Oak in the deer enclosure – tree number 360 (©Mosaic Mapping)

Sweet Chestnut

An important species as it displays similar decay characteristics to oak but has a shorter life expectancy. Occurring principally south of the house to the N and S of the oak area, a number are also found along the shelterbelt along the northern boundary. Again, as with oak, some of the largest trees are subsumed by secondary growth and in urgent need of halo releasing.

Tree 177 - a Sweet Chestnut with a girth of 7.7 metres (©Mosaic Mapping)

Turkey Oak

There is a number of non-native oak trees that are over-mature and *Q cerris* is by far the most numerous. Many are in a crescent to the E and S of the house with significant examples scattered elsewhere. An unfortunate aspect is that it plays host for part of the life cycle of the knopper gall wasp which later produces galls in acorn rendering them infertile. A long-term compromise at Pixton, given their predominance in the landscape, would be to rely on replanting rather than natural regeneration for native oak (in any case essential in the heavily grazed areas) whilst preventing establishment of new generations of Turkey Oak and not replacing the mature specimens.

Lime

These are assumed to be part of the planting associated with the Park and occur primarily in two clusters, to the north and west of the northern approach to the house, with a few more to the SW. Nearly all trees are of a similar age.

Lime trees down slope from the northern approach (©Mosaic Mapping)

Ash

With different decay characteristics to oak and sweet chestnut, ash hosts a different suite of decay associates. With an uncertain future due to *Chalara* in the UK it is important to retain the genetic diversity of old ash trees. The bark properties are particularly suited to epiphytic assemblages. At Pixton, one tree, No 383, is particularly noteworthy for its lungwort (*Lobaria*) colony. Though not represented by many trees, there are some significant individuals of different origins. A couple of veteran coppice stools are on the northern boundary, 383 a fine example of an open grown parkland ash and 406 distinct as a lapsed pollard.

Ash coppice stool on the north boundary – No 402 (©Mosaic Mapping)

Ancient ash stump –No 412 (©Mosaic Mapping)

Hawthorn

An important source of nectar, a number of areas of over-mature trees are found across the site, three of the oldest or vulnerable specimens having been selected for survey.

Ancient hawthorn No 367 – all one tree (©Mosaic Mapping)

Numbers of trees

Trees surveyed and their age classes (dead trees in brackets)

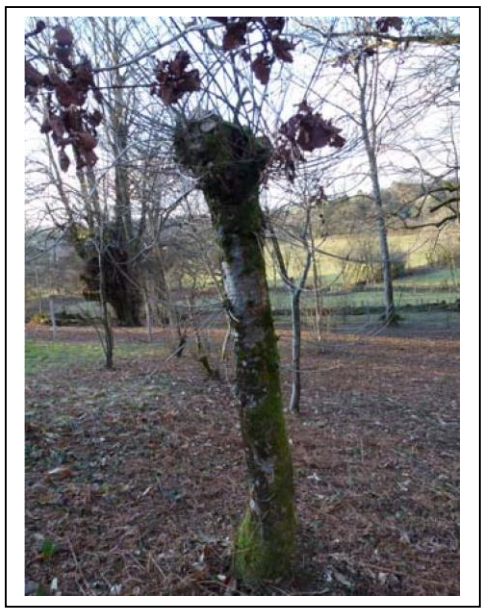
Species	Ancient	Veteran	Mat veteran	Mature	Young mature	Young veteran	Grand Total
Ash	6	9	3	1			19
Beech	4	58 (20)	41 (1)	16 (1)	1		120 (22)
Birch		8	2				10
Copper beech			1				1
Elm		1					1
Field Maple	1						1
Hawthorn	1	2					3
Holm Oak		1					1
Horse Chestnut		1 (1)					1 (1)
Lime		26					26
Lucombe				1			1
Oak	11 (7)	40 (9)	12	5		2	70 (16)
Plane		3	2	1			6
Red Oak		3	1	1			5
Red Oak?					1		1
Sweet Chestnut	6 (2)	27 (2)	3				36 (4)
Sycamore		3	3	2	1		9
Turkey Oak	1	12 (2)	10	7	1		31 (2)
Turkey Oak?		1					1
Walnut		1					1
Grand Total	30 (9)	196 (34)	78 (1)	34 (1)	4	2	344 (45)

Issues and Threats

The principal issue is that of competition from neighbouring trees. Ideally, open grown trees are more valuable having a wider range of microhabitats and a warmer and lighter microclimate. Oak, in particular, is shade averse, showing dieback of branches and eventually death where competition is severe. 39 trees require haloing as a priority and a further 20 less urgently. A GIS dataset of target notes highlights the areas of trees in most urgent need of haloing.

Oak 212, in woodland, with competing nearby trees (©Mosaic Mapping)

Sessile Oak 337 clearly open grown, immersed in secondary woodland ©Mosaic Mapping)



Here, new plantings are rather close to veteran trees, careful management will be required to prevent them adversely affecting the older trees, maintaining some as pollards is one solution. (©Mosaic Mapping)

In the past Ivy has been controlled. A balance has to be struck – it is a useful winter nectar source and provides shelter whilst in excess it can inhibit shoot production on old trees or cause imbalance by increasing the trees sail. A number of trees have been recommended for control of ivy.

The following potential issues and treats affecting surveyed trees were also noted

1	Poaching due to livestock	11
2	Compaction due to vehicles	11
3	Compaction due to pedestrians	0
4	Root damage due to ploughing	0
5	Root damage due to ditching	0
6	Root damage due to stock	5
7	Soil damage due to gamekeeping	3
8	Trunk Bark stripping by livestock	3
9	Basal scarring	13
10	Chemical use within vicinity	0
11	Saltlick/livestock feeder	2
12	Machinery damage to buttress	0
13	Machinery damage to trunk	1
14	Attachment of signs, wire	13
15	Car Parking	0

Avoid damage to soils near veteran trees (©Mosaic Mapping)

Root bark nibbling – a possible sign of low supply of trace minerals in stock feed (©Mosaic Mapping)

Where the investment is made to plant new trees, aftercare is important. When establishing new generations of parkland trees, a long commitment to planning and maintenance is implicit. (©Mosaic Mapping)

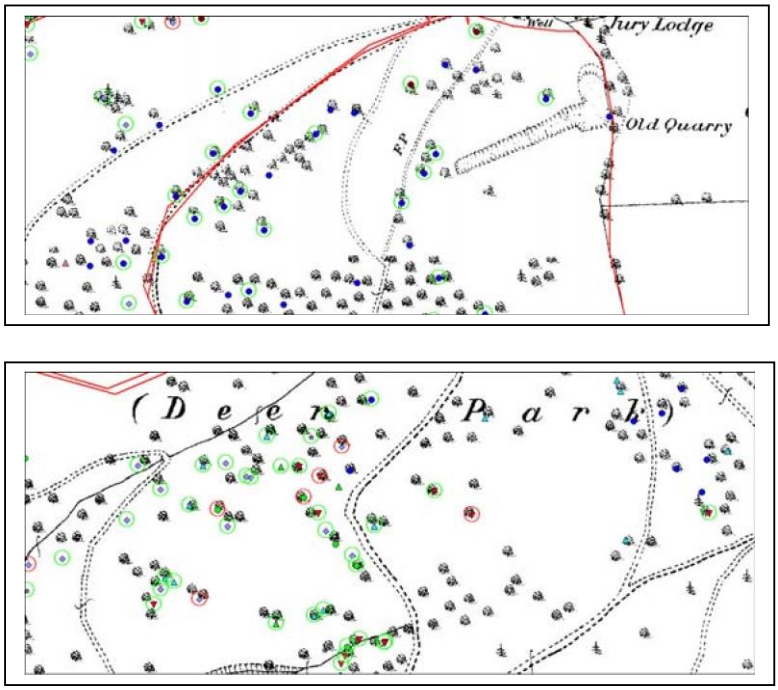
Tree stability and structural integrity

Losses from adverse weather conditions will occur. In general few trees were deemed at risk of collapse, though, as trees are haloed they should be monitored. The exceptions are some beech trees, those that might be considered to be “Landscape Pollards”. Many of those beech trees in or near the roundel that would have been in view of the house prior to woodland development have the appearance of having been cut or pollarded once, but not regularly. In this latter case, a characteristic swelling – the “bolling” – is formed which these trees lack. These trees are showing signs of collapse (see earlier illustration of tree 261) and limb loss. Multi-stemmed beech such as these develop more decay habitats than straight stemmed ones and are a valuable resource. Consideration should be given to prolonging the lives of these trees for this reason, as well as the historic and aesthetic values they exhibit. As well as removal of competitive plantation trees, an assessment should be made of the need and feasibility of stabilisation of the trees by intervention such as crown reduction.

Trees in the beech roundel – multi-stemmed indicating perhaps a deliberate intervention to maximise the impact of their appearance from Pixton House (©Mosaic Mapping)

Summary

The correspondence of the locations of many old trees mapped in this survey with early Ordnance Survey mapping allows us to conclude that this is a good representation of the trees of the Park in the early to mid 19th century. The open-grown nature of some of the trees now within woodland supports this. Many of the older trees are declining and the loss of others of significance will have been hastened as a consequence of competition from the establishment of secondary woodland and plantations. Recognition of their importance and sensitive management could benefit these habitats and associated species and enhance their current status.



Detail of an area of the Park showing current survey locations superimposed over early OS mapping (©Mosaic Mapping)

Pixton Park with its significant number of veteran and ancient trees and a reasonable range of age classes of the significant species, especially beech, provides a good opportunity for enhancement of the parkland tree resource and those species typically rich in associated species. Of these, many of those that utilise decaying and dead wood, the saproxylics, are generally considered to be at risk. The oldest trees on the site indicate continuity with a landscape prior to the current emparkation though there is a suggestion that there may have been an earlier park here. The size of the trees on the northern boundary bank and the observation that a number of trees in the deer park appear to be on an old hedgebank accords with this.

Trees in the deer park on what appears to be a former hedgebank (©Mosaic Mapping)

Establishment of native species, by planting particularly in the open areas – though at low density (e.g.30 metre spacing) – should be considered. Conversely, the restoration of secondary woodland areas to grazed wood pasture and the halo releasing of embedded trees will improve the resilience of the wood decay associates by prolonging the lives of the older trees whilst newer ones become established and enter post-maturity.

Consideration should also be given to the woodland areas; again, individual trees may require space whilst selective thinning of regeneration to aim to give substantial trees in the future would be beneficial.

Of greatest priority is looking after and enhancing what is remaining. Without the old trees the specialist associates will be lost. The most important species are the native oaks. Their ability of some to regenerate is shown by the example below. Though a substantial limb has been lost, there are epicormic shoots on the trunk and these might develop and sustain the remaining trunk for many years. If, however, they become shaded by secondary growth, these shoots will die. This is why it is so important to maintain light levels and sustain a wood pasture rather than woodland habitats in the old Deer Park area at Pixton.

(©Mosaic Mapping)

J. P. Smith Mosaic Mapping May 2015

Appendix I Background literature

Castle, G & Mileto, R. Development of a veteran tree site assessment protocol 2005 *English Nature Research Report* Number 628

English Nature (1997) The Veteran Trees Initiative Specialist Survey Method

Read (2000) Veteran Trees - A Guide to Good Management

Appendix II Tree Survey Methodology

Data Fields

ID
East
North
Species
Photo
Live
AgeClass
Full Survey
GirthXXxMToNearest5CmAt13M
Estimated
Issues
Location
LocationComment
PotentialHazards1Buildings2PowerCables3AdjoiningPropertyGardensE
IssuesComment
CrownGrade
MoribumdTrees
HabitatAndConditionComment
RecentChanges1Felled2Fallen3Cleared4NowDead5LUpLimb6LLowLimb7Col
PreviousManagement1CrownLifting2DeadwoodPruning3CrownReduction4F
CompetitionPriority
CompetitionDesirable
RegenerationCompetition
CrownReduction
ManagementComment
DeadTrees
Dimensions1
TreeForm
VisibleHeartRot
DWAttached
DWFallen
HeartwoodExposed
Hollowing
Holes
Tears
FluxesAndSapRuns
RedRot
WhiteRot
EpicormicGrowth
Ivy
Mosses
Ferns
Lichens
BracketFungi

EntomologistAccess
HabitatNotes
Comments
GPS sd
TimeStamp

Notes on data

Photographs

These are labelled with the tree ID, allowing hotlinking of photographs to tree records from the survey. The approximate direction in which the photograph is taken is recorded.

Girth

This is measured at 1.3 metres high and expressed as the circumference in metres to the nearest 5cm. Where ivy growth is significant, an allowance is made for this. If the measurement is at a different height, this is noted. Those where a measurement could not be easily taken are recorded as estimated and a reason for this given.
Where practical, multi-stemmed trees are recorded as centimetre measurements for each stem; e.g. 250 235 150.

Age class

Trees are assigned an age class (including age class at death where this is indicated by the remaining material) from the following categories New Planting, Young, Mature, Mature with Veteran features, Veteran and Ancient.

Issues

Evidence of 'Management Issues' (both current and historic) adversely affecting trees are listed and categorised as follows

1. Poaching due to livestock
2. Compaction due to vehicles
3. Compaction due to pedestrians
4. Root damage due to ploughing
5. Root damage due to ditching
6. Root damage due to stock
7. Soil damage due to gamekeeping
8. Trunk Bark stripping by livestock
9. Basal scarring
10. Chemical use within vicinity
11. Saltlick/livestock feeder
12. Machinery damage to buttress
13. Machinery damage to trunk
14. Attachment of signs, wire
15. Car Parking
16. Root damage/basal scarring - this is usually old damage whereas poaching is current

Potential Hazards

The presence of 'Potential Hazards', likely to impinge upon the management of the tree by virtue of health and safety issues were coded as

1. Buildings
2. Power cables
3. Adjacent property
4. Road (surfaced)
5. Vehicle track
6. Path
7. Visitor attraction, seats notices etc

Crown Grade

This is simply a quick assessment of the vigour of the trees
Strong
Some Stubs
Declining
Retrenching
Moribund In the case of these trees, a second assessment is made of the actual live growth, irrespective of how little there is.

Recent Changes

1. Felled
2. Fallen
3. Cleared
4. Now dead
5. Lost Up Limb
6. Lost Low Limb

7. Collapsed

Previous Management

1. crown lifting
2. deadwood pruning
3. crown reduction
4. fencing off
5. recent pollarding
6. haloing

Management aspects

The following are recorded: Competition, as Priority or Desirable and Crown Reduction Assessment, on a yes/no basis, followed by a "Management Comment" giving more detail of the remedial action required to address these issues. In the case of trees flagged for assessment for "Crown reduction" it must be stressed that this is an inexpert view and

that the advice of an arboricultural consultant sensitive to the needs of old trees is sought.

Dead trees

Dead trees are noted and categorised as follows.
Standing
Fallen
Cut Stump only
Broken Stump only
Cut stump and trunk
Broken stump and trunk
Stump and Cut Lengths

Dimensions

Approximate sizes of dead trees are given with heights and lengths (M) and diameters (cm).

Epicormic growth

The presence of shoots rather than epicormic stems and branches, arising on lower trunk

Comment

This is a further note made during the tree survey. These are of a general nature. They mention arboricultural work that has been carried out. In particular, they refer to the veteran features of the tree and are abbreviated as follows.

ADJ	Adjacent
BSE	Base
BS	Basal scarring
C	Crown
CL	Cut length
COPP	Coppiced
CR	Crown Reduced
DAM	Damage
DW	Deadwood
F	Fallen
IMP damage	Impact damage Limb

L	Limb
L STR	Lightning strike
L Top	Lost Top
LL	Lost Limb
LLL	Lost Low limb
LUL	Lost Upper Limb
NP	Natural Pollard
POLL	Pollarded
RR	Red {Brown) Rot
S	Standing (dead)
E to	East
N to	North
S to	South
W to	West

Appendix III Glossary

Age Class

Ancient An ancient tree is one that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species. Its canopy may be small. It will probably have a very wide trunk relative to other trees of the same species and it is very likely that it will be hollow. However, ancient trees grow in so many different environments and have been influenced by so many factors over their long lives that they may not always have large girths. In oak, the tree will have retrenched – its upper canopy will have reduced in size from that when it was at its maximum and will be in the process of being supplanted by a lower or inner crown which may, in turn, degrade leaving just some epicormic shoots on the trunk.

Veteran Veteran is strictly a term describing a tree with habitat features such as wounds or decay. The terms ancient and veteran have been used interchangeably in the past, however, it is important to know what the differences between them. A veteran tree is a survivor that has developed some of the features found on an ancient tree, not necessarily as a consequence of time, but of its life or environment. Ancient veterans are ancient trees, not all veterans are old enough to be ancient. A veteran may be a young tree with a relatively small girth in contrast to an ancient tree, but bearing the 'scars' of age such as decay in the trunk, branches or roots, fungal fruiting bodies, or dead wood. Ancient is used as an adjective, veteran as a noun: certain pruning techniques can be employed to artificially "veteranise" a tree.

However, given the range of tree forms encountered it can be useful to discriminate between ancient trees and younger trees that have sustained a **large** amount of damage (for example, an otherwise mature tree that has split in two and has extensive decay) and are of high habitat value. In this survey, such trees have been given an age classification labelled as **"Veteran".**

Mature A tree showing no signs of premature ageing; developing or with, a crown at its maximum extent and vitality.

Mature/Veteran (MV) In the absence of a catastrophic event, or the presence of chronic symptoms of ill health, trees will acquire veteran features gradually and cumulatively. A tree with a **few** such features, whilst maintaining the general appearance of a mature tree, is valuable as a "future veteran" or "successor tree" and worthy therefore of note.

Crown Grade

Strong	Strong healthy growth with one or two dead branches
Some Stubs	A number of small dead branches and stubs showing dieback of peripheral limbs around the crown
Retrenching	General dieback of peripheral limbs around the crown. Inner crown developing
Declining	Large rotting branch stubs and several dead branches or limbs. Loss of some large limbs
Moribund	Numerous large dead and hollow limbs. Majority of crown has gone. Live growth restricted to a small proportion of the limbs that comprised the crown at its maximum extent – or even just to epicormic shoots about the trunk.

Crown Grade – moribund trees

The live growth remaining is itself graded. Thus, for example, a tree may only have one small branch remaining, but the growth on this branch may well be "strong".

Dead tree categories

Broken stump and trunk The tree has fractured and the fallen part of the trunk is evident

Broken Stump only Only the upright part of the fractured tree remains

Cut stump and trunk The tree has been felled and a fallen part of the cut trunk is evident

Cut Stump only The tree has been felled and only the stump is present

Fallen The tree fell as a whole, sometimes fracturing on impact

Fallen and cut stump After falling, the trunk was cut just above the rootplate; sometimes the has stump righted itself in the hole

Standing The is generally complete, trunk and some limbs remaining upright

Stump and Cut Lengths The tree has been felled and the fallen part of the trunk has been sectioned

Trunk One or more cut lengths of trunk are present but their origin is uncertain

Characteristic features of veteran trees

From READ. 2000. *Veteran Trees - A guide to good management*

- girth large for the tree species concerned;
- major trunk cavities/progressive hollowing;
- naturally forming water pools;
- decay holes;
- physical damage to trunks;
- bark loss/loose bark;
- large quantities of dead wood in the canopy;
- sap runs;
- crevices in the bark, under branches or in the root plate sheltered from direct rainfall;
- fungal fruiting bodies (eg from heart rotting species);
- high number of interdependent wildlife species;
- epiphytic plants;
- an ‘old’ look;
- high aesthetic interest.

In addition a tree may also:

- have a pollard form or show indications of past management;
- have a cultural/historic value;
- be in a prominent position in the landscape.

Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

Natural England publications are available as accessible pdfs from www.gov.uk/natural-england.

Should an alternative format of this publication be required, please contact our enquiries line for more information:

0300 060 3900 or email

enquiries@naturalengland.org.uk.

Catalogue code: NECR379
ISBN 978-1-78354-799-9

NATURAL ENGLAND