



Consultancy Services

Kent Wildlife Trust Consultancy Services

Ancient and Veteran Tree Report

Limes Land, Appledore Road, Tenterden



Compiled for Tenterden Town Council



Head Office: Kent Wildlife Trust, Tyland Barn, Sandling, Maidstone, Kent ME14 3BD

Tel: 01622 662012

info@kentwildlife.org.uk | kentwildlifetrust.org.uk



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Report Verification

Client	Tenterden Town Council
Site / job	Limes Land
Central Grid Reference	Please see Appendix: Location of Trees Map and Table
Report Title	Ancient and Veteran Tree Report
Report Reference	ECOSERV115

Quality Assurance

Report Version	Date	Prepared By	Reviewed By	Approved By
Draft		Neil Coombs Land Management Advisor, KWT Consultancy Services		
Final			Vincent Ganley Managing Director, KWT Consultancy Services	Vincent Ganley Managing Director, KWT Consultancy Services

Report to Tenterden Town Council with regard to the determination of Ancient/Veteran Tree status of Twenty-One trees at Limes Land Tenterden

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Scope and purpose of report

This report has been compiled by Kent Wildlife Trust Consultancy Services for Tenterden Town Council. The scope and purpose of the report is to assist Tenterden Town Council in the determination of the likelihood of a number of trees at Limes Land, Appledore Road, Tenterden, Kent being of Ancient/Veteran Tree Status.

The report is limited to an assessment and discussion of features of ancient and veteran trees. The field survey visit and report do not constitute a tree safety inspection and the comments made are not to be used or relied upon for such purposes.

Summary of report findings

Twenty-one trees were surveyed for this report. Of those twenty-one trees,

- Two, T13 and T21 trees met the definition of an ancient tree due to having a girth exceeding 4 metres as required by the Defra Metric 3 for Oaks and so are classed as veteran trees
- Three trees, T1, T20 and T21, met the definition of a veteran tree according to the Defra Metric 3 in having 4 or more of the features listed within the Metric
- Four trees, T1, T19, T20 and T21, met the definition of a veteran tree by having at least five of the widely accepted features of a veteran tree
- Tree T20 listed on the Ancient Tree Inventory as a notable tree should be re-classified as a veteran tree as it has eight features usually associated with Veteran Trees
- In addition, the boundary hedgerow running east-west is a recognised historic feature, a drove road dating from the medieval period and showing signs of traditional management and has a number of hornbeam feature trees, including T18 a hornbeam pollard which shows a form and habit recognizable as a veteran of this species. Access to this tree is restricted as it within two barbed wire fences
- At least three of the trees T.19, T20 and T21, support features that may be used by bats which are fully protected from disturbance

Recommendations

The trees reported as veterans should be protected according to the criteria set out in Forestry Commission and Natural England Standing Advice.

The local Planning Authority should consider whether or not planning permission should be given for developments where these trees cannot be fully protected during development according to standing advice and the National Planning Policy Framework.

Where the Local Authority consider that the need for development outweighs a refusal of planning permission, they should insist that the trees listed as veterans are protected by a buffer of fifteen times the stem diameter of the tree, as recommended in the standing advice, rather than the standard Root Protection Area as specified in BS5837:2012

Further surveys for the presence of bats are recommended.

Definition of an ancient/veteran tree

Ancient trees are generally defined as a tree 'that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species' (Anon. 2008)¹. This definition takes account of the differences between species in terms of their ability to cope with events and processes that may eventually lead to their decline and the theoretical potential of trees to indefinitely continue to grow by producing new shoots and incremental bark and wood growth.

A tree may be considered an ancient tree according to the following criteria:

1. Biological, aesthetic or cultural interest because of its great age. In particular, biological interest is a function of the development of decay and dead wood which increases the number of habitats within the tree. The process of decay is associated with, although not exclusively, age.
2. A growth stage that is described as ancient or post-mature.
3. That the tree has a chronological age that is old relative to others of the same species. In determining age Lonsdale states (page 27) "surveyors should try to make use of available historical or other evidence as to whether the tree concerned is very old, relative to others of the same species"

The precise aging of trees is extremely difficult and briefly discussed further with regard to the site survey page 11.

For a full discussion relevant to oak trees which are the main subject of this report please refer to The Age of ancient oaks in Chapter 2 Ancient Oaks in the English Landscape by Aljos Farjon and published by the Royal Botanical Gardens, Kew.

In the absence of knowing the exact age of a tree a number of features are considered indicative of great age. These features typically include:

- A considerable girth
- A knarled or aged appearance
- Presence of hollowing
- A characteristic crown appearance
- Crown retrenchment
- Presence of mosses, lichens or other epiphytes

Distinguishing veteran trees

Trees may also be defined as veteran trees. Such trees are not necessarily particularly old or ancient but have a number of features that contribute to their interest and in particular are valuable in supporting biodiversity.

¹ This quote is taken from the expert box 9.2 Ancient and Veteran Trees: Their importance and Management David Lonsdale in Hiron and Thomas Applied Tree Biology: Wiley;2018

These features are generally recognised and defined in various publications, including those listed in the references section.

Due to the features exhibited ancient trees qualify as veteran trees but not all veteran trees qualify as ancient trees.

A summary of the relevant features generally considered to be indicative of a veteran tree is provided in the following diagram.

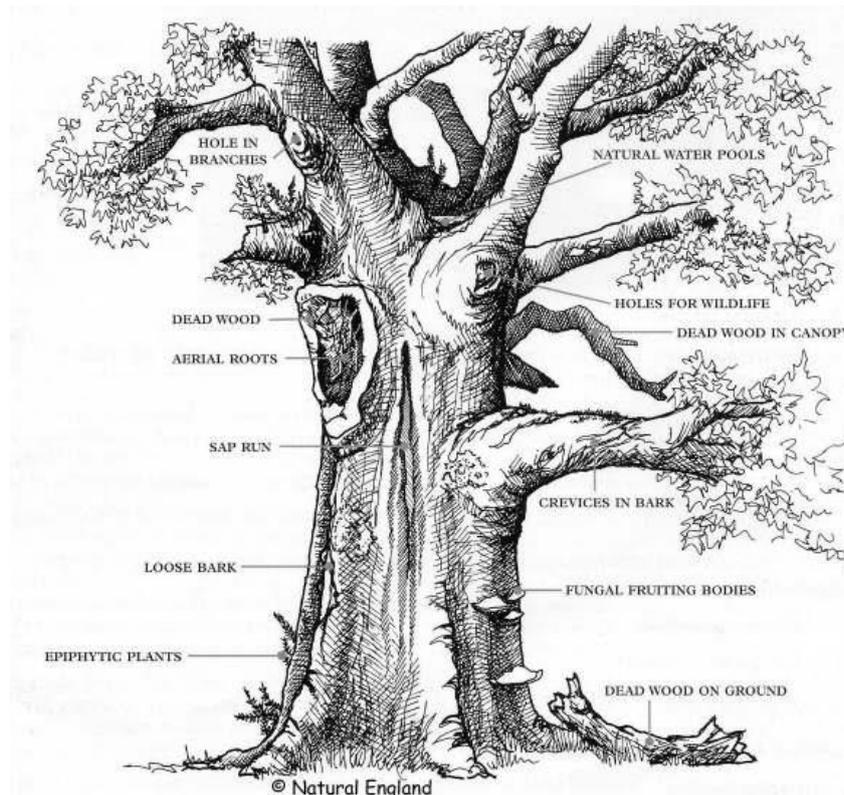


Diagram of Veteran tree features from Read²

Importance of ancient/veteran trees

Cultural significance

Ancient and veteran trees are often of cultural significance. Surviving for hundreds of years, they exist in historic parks, hedgerows and other places, connecting people with their heritage. They may be former parish markers, used before maps were widely available, or once locally significant trees now incorporated into streets, parks, playgrounds and open spaces.

² Read H. Veteran Trees a guide to good management Natural England

They may be retained on the boundaries of what was once woodland or indicate former hedgerows, tracks, paths and potentially in the Weald former drove roads where livestock were driven to and from the “Dens” such as Tenterden.

They may be trees of village greens and open spaces which have been the focus of local events, festivals and traditions.

Many are widely known and named with associations to important historical efforts and people. Ancient trees may go un-noticed and un-recorded and are subject to loss for this reason.

Biological significance

The UK is considered to hold a significant proportion of the European ancient and veteran tree resource. Ancient and veteran trees, because of the features associated with age or long-term exposure to environmental effects, can provide habitats for a wide variety of other species.

Some species, particularly invertebrates, are reliant on the dead and decaying wood habitat provided by these trees and need these features as a continuing resource. Some species that are dependent on veteran trees may have limited means of dispersal and the loss of individual ancient or veteran trees supporting decaying wood has the potential to cause local extinctions and a significant decline in biodiversity.

In addition, the fact that these trees have reached a great age and are survivors means that they may represent a valuable genetic resource that could be of great importance in selecting trees capable of adapting to further pressures such as climate change.

Ancient/veteran trees policy and legislation

Guidance on the appropriate policy to inform considerations with regard to ancient and veteran trees can be found on the UK Government website³Guidance Ancient woodland, ancient trees and veteran trees: protecting them from development.

Local Authorities are required to consider Natural England and Forestry Commission guidance (known as ‘standing advice’) to help them decide on development proposals affecting ancient woodland, ancient trees and veteran trees.

Such advice is referred to as a ‘material planning consideration’. This means that planning authorities should take it into account when making decisions on planning applications.

The Government advice informs Local Authorities that when making planning decisions, that they should consider conserving and enhancing biodiversity, ancient and veteran trees and refer to paragraph 175C of the National Planning Policy Framework.

³ Guidance Ancient woodland, ancient trees and veteran trees: protecting them from development: <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>:
Consulted 16.51 30/01/2021

Paragraph 175C of NPPF states:⁴

“Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;”

In considering potential impacts Local Authorities should take account of the likely impacts on ancient and veteran trees such as:

- Increasing the amount of pollution, including dust
- Increasing disturbance to wildlife from additional traffic and visitors
- Increasing light or air pollution
- Increasing damaging activities like fly tipping and the impact of domestic pets
- Changing the landscape character of the area

Ideally Local Authorities should, according to the standing advice, seek to avoid or mitigate effects on ancient and veteran trees. Standing advice provides examples such as redesigning schemes, creating open spaces around ancient and veteran trees and providing additional protection from construction activities.

Ancient and veteran trees in regard to construction

Trees are a material consideration for planning authorities and in general protection is provided through adherence to BS 5837:2012 Trees in relation to design, demolition and construction. The standard provides guidance and *“recommendations relating to tree care, with a view to achieving a harmonious and sustainable relationship between new construction/existing structures and their surrounding trees”*⁵

In addition to the advice and guidance within BS 5837 the UK Government provides further guidance for ancient and veteran trees.

The Forestry Commission and Natural England Standing advice reiterates that ancient and veteran trees are irreplaceable, and that Local Authorities should seek to protect them, avoiding potential impacts by:

- Putting up screening barriers to protect ancient and veteran trees from dust and pollution
- Protecting ancient and veteran trees by designing open space around them
- Identifying and protecting trees that could become ancient and veteran trees in the future
- Rerouting footpaths
- Root protection areas should be protected during construction
- Ensuring any change to the water table does not adversely affect ancient woodland or ancient and veteran trees

⁴ Ministry of Housing, Communities and Local Government National Planning Policy Framework February 2019

⁵ Quoted from shop.bsigroup.com assessed 31/01/2021

- Ancient and veteran trees (including dead and dying trees) should be managed to help prolong their life.
- Protecting ancient and veteran trees by the use of buffer zones

A buffer zone's purpose is to protect individual ancient or veteran trees. The size and type of buffer zone should vary depending on the scale, type and impact of the development.

A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter.

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The Standing Advice continues and states that:

Where possible, a buffer zone should contribute to wider ecological networks and be part of the green infrastructure of the area

Buffer zones should consist of semi-natural habitats such as woodland, or a mix of scrub, grassland, heathland and wetland planting with local and appropriate native species.

It is also stated that gardens should not be included in buffer zones.

Ancient and veteran trees in relation to tree categorisation

With regard to development trees may be categorised according to a number of set values. Initially these values may be arboricultural, in determining the condition of a tree against a standard or ideal tree of the same species and type.

Guidance regarding tree categorisation is provided in BS5837:2012 Trees in Relation to design, demolition and construction – Recommendations, extends tree categorisation to include further consideration of trees according to cultural and biological criteria.

A table derived from BS5837:2012 and provided below explains the categories of tree categorisation

Further advice and direction have been provided as follows, in that ancient and veteran trees should be placed in the A3 category:

This is explained further in Lonsdale (page 39) which states:

“According to BS 5837 guidance, veteran trees or trees in wood pasture can be assigned to the A category (as A3) if they have significant value for conservation or for historical, commemorative or other reasons. They could also be assigned to the A category (as A2) for their landscape value. Thus, veteran can be highly rated even if they do not qualify for A category (A1) in respect of their arboricultural qualities.”

The Ancient Tree Forum and the Woodland Trust consider that all ancient trees and mature veteran trees should be recorded in Category A3 in accordance with BS5837:2012.

Table 1

<p>Category U</p> <p>Those trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years</p>	<ul style="list-style-type: none"> • Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees. • Trees that are dead or are showing signs of significant, immediate and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality. 		
<p>Category</p>	<p>Sub category</p>		
	<p>1. Mainly arboricultural qualities</p>	<p>2. Mainly landscapes qualities</p>	<p>3. Mainly cultural values, including conservation</p>
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	<p>Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features</p>	<p>Tree, groups or woodland of significant conservation, historical, commemorative or value (e.g., veteran trees or wood-pasture)</p>
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	<p>Trees that might be included in category A, but are downgraded because of impaired condition (e.g., presence of significant though remedial defects, including unsympathetic past management and storm damage) such that they are unlikely to be suitable for retention for beyond 40 years: or trees lacking the special quality necessary to merit the category A designation</p>	<p>Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals: or trees occurring as collectives but situated so as to make little visual contribution to the wider locality</p>	<p>Trees with material conservation or other cultural value</p>
<p>Category C</p> <p>Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories</p>	<p>Trees present in groups or woodlands, but without this conferring on them significant greater collective landscape value; and/or trees offering low or only temporary landscape value</p>	<p>Trees with no material conservation or other cultural value</p>

Desk survey

The Kent County Council: Kent Historic Environment website⁶ was consulted on 1st December 2021. The Ordnance Survey maps 1st Edition shows trees in the approximate position of trees 20 and 21. The Avenue of Oaks is not shown. The hedgerow feature of the east-west boundary is also not shown. Whilst relied upon for determining the extent of ancient woodland 1st Edition Ordnance Survey maps are not always completely reliable in showing individual trees and hedgerows.

The fact that trees are shown on the first version, but not later versions suggests that reliance on these maps to determine the existence of features is not possible.

Two historic records are shown within a relevant area:

1. Historic Environment Record TQ83SE309 includes a reference to the general area "The area features streams, ponds and hedgerows visible on historic maps of 1769 and 1843 (tithe map)." ⁷
2. TQ 83 SE 315 Described as an early Medieval drove road shown on the Tithe Map of 1843⁸

Site Survey Assessment of ancient and veteran tree features

The trees were surveyed with regard to characteristics of ancient and veteran trees. On Wednesday 24th November 2021 an initial walkover survey was made in the company of Samantha Reed who instructed the surveyor as to which trees were to be surveyed.

The Veteran/Ancient tree survey was made on Sunday 28th November 2021. Weather conditions were good with clear skies and a cold temperature.

A further site visit to clarify and check the survey findings was made on 30th November 2021. The weather on this occasion was generally mild with overcast skies.

The survey area was a line of mostly oaks leading north from the Appledore Road, a field maple within a hedgerow/line of trees at TQ89613368.

A further two oaks at TQ89293371 and TQ89283365 were included in the survey.

Scope and limitations as to survey

The survey was confined to a ground-based assessment of the trees in respect to identifying and recording features associated with veteran trees. These features were determined by reference to:

The Veteran Tree Specialist Survey Method

⁶<https://webapps.kent.gov.uk/KCC.ExploringKentsPast.Web.Sites.Public/Default.aspx>

⁷<https://webapps.kent.gov.uk/KCC.ExploringKentsPast.Web.Sites.Public/SingleResult.aspx?uid=MKE110928>

⁸ <https://webapps.kent.gov.uk/KCC.ExploringKentsPast.Web.Sites.Public/SingleResult.aspx?uid=MKE112014>

Natural England Farm Environment Plan Handbook

Defra Metric 3 Technical Supplement

English Nature Research Report 628 Development of a veteran tree site assessment protocol

In addition, reference was made to Chapter 2 Veteran Trees: Survey and Evaluation in Ancient and other Veteran Trees by David Lonsdale.

The form of survey was a brief visual assessment of each tree to determine if it merited further consideration. If it was considered that veteran tree features were present relevant notes were made as dictated to an assistant.

Where relevant, measurements of the tree's circumference were made with a 5m tree tape which shows both circumference and diameter.

The circumference or girth of a tree is measured at 1.5 metres above ground, although historically it was measured at 1.3 metres above ground.

Photographs were taken as required.

Due to many features being some distance from the surveyor the dimensions provided are estimates.

The field assessment of the tree considered its attributes or features according to the criteria listed which were used to determine whether it would qualify as an ancient/veteran tree.

Survey criteria

A tree may be defined as ancient if it meets the following criteria:

- A girth that is very large for the species allowing for local growing conditions
- Extensive decay or hollowing in exposed parts of the central wood
- A crown structure characteristic of post-maturity
- A crown that has undergone retrenchment

Girth

The measurement of girth is considered to be the principal technique for determining the age of a tree. Trees grow by annually producing new tissue just below the bark. This means that girth increases each year on average by some 2.5 centimetres. This measurement is very much a rule of thumb as the amount of annual increment is influenced by environmental conditions and factors, such as competition from other trees and the true age of a tree cannot be determined except when the annual rings can be counted.

To some extent the attributing of girth directly to age must be subjective. Trees growing in open field situation with considerable nutrients available in the soil are likely to have increased incremental growth when compared to trees grown closely together where they must compete for resources.

In addition, management may play a considerable part in determining the girth of many trees. Both pollarding and coppicing have been historically widely used and can lead to girths that are considerably different from typical trees.

The terms coppice and pollard are widely used to define broadleaf trees that are regularly cut, and which then send out new shoots which eventually form branches. Both techniques have been regularly used since possibly Neolithic times, to provide a supply of wood products and browse for livestock.

A coppice stool is generally low to the ground, whereas a pollard is generally higher and usually above the reach of grazing animals.

Pollarding is the practice of repeatedly cutting a tree at a height of around 2metres so that new growth cannot be grazed by livestock and deer. It was a popular traditional management in wood pasture and deer parks and often used on trees that marked important boundaries.

Coppicing is the repeated cutting of trees at the base, mostly in woodland situations to provide a virtually perpetual crop of wood and has been used in the UK for hundreds if not thousands of years.

The following table provides information regarding the possible ages of different tree species according to their girth.

Table: Estimates of age for certain tree species with girth 2.5m – 5.0m. This table is derived Wokingham District Veteran Tree Association Estimating the Age of a Tree from its Girth⁹

Girth		2.5	3.0	3.5	4.0	4.5	5.0
Most large trees & Broadleaf & coniferous	Growing in good conditions	98	118	138	157	177	197
	Growing in an avenue	153	184	215	245	276	307
	Growing in a wood	205	246	287	328	369	410
Coppiced trees	Oak, Lime, Ash, Hazel	270	320	370	430	480	530
	Field Maple	220	270	310	360	400	450
	Sweet chestnut, Sycamore	110	130	160	180	200	220

The Defra Metric 3 which is likely to be widely used in development situations defines an ancient tree as follows:¹⁰

⁹ <https://wdvta.org.uk/pdf/Estimating-the-age-of-trees.pdf>

¹⁰ Defra Metric 3 Technical Supplement page 201

Ancient trees can be classified using the following girth guide at 1.5m from the ground:

- >2.5m for field maple, rowan, yew, birch, holly and other smaller tree species.
- >4 m for oaks, ash, Scot's pine, alder.
- >4.5 m for sycamore, lime, horse chestnut, sweet chestnut, elm species, poplar species, beech, willows, other pines and exotics.

However, most commentators would suggest that a girth of 4 metres does not necessarily mean an oak is ancient

Lonsdale (page 27) provides the following criteria with regard, particularly to oak, *Quercus robur* or *Q. petraea*

Trees with a diameter at breast height of more than 1.0 metre (girth 3.2 m) are potentially interesting

Trees with a diameter of more than 1.5 m (girth 4.7 m) are especially valuable with respect to conservation

Trees with a diameter of more than 2.0 m (girth 6.25m) are truly ancient

To provide uniformity with future surveys the Defra criteria has been used to determine whether or not a tree is ancient.

The measurement of girth in standard trees i.e., trees with a central main stem is widely accepted. With regard to coppice stools there is some controversy.

When a coppice tree is cut, new growth often appears from the remaining stubs which were traditionally left close to ground level. The new growth gradually increases the overall width of the coppice stool and so in very broad terms the greater the diameter of the stool the greater the age of the coppiced tree.

Determining the age of a coppice stool requires the consideration of many factors and may be reliant on surveyor knowledge and experience.

Whereas it is widely accepted that some coppice stools may be in excess of a thousand years old it is also possible to say no more than "a large coppice stool is likely to be older than a small one"¹¹

Rackham¹² gives some guidance:

"As a very rough guide, a coppiced ash stool 4 feet (1.2 metres) in diameter would be 400 years old, and one 8 feet (2.45 metres) across would be 800 years old. On wet or infertile sites stools are likely to expand more slowly than this.

Lime, oak and hazel stools probably grow about as fast as ash, maple a little faster."

¹¹ Aljos Farjon: Ancient Oaks in the English Landscape

¹² Rackham O Woodlands New Naturalist Library 2006 page 248

Further guidance is provided by Forest Research:

“Management practices such as coppicing may also belittle the true age of the coppice stool. For this reason, the species, relative ages, management practice, aesthetic, cultural and biological importance should all be taken into account when surveying or assessing potential veteran trees. Forestresearch.gov.uk: Resources veteran trees.

Extensive Decay

Decay in trees is usually brought about by the interaction of fungi which colonises different parts of the tree and in very general terms breaks down the structure of wood. In many ways this decay can be considered as beneficial as it releases materials that may have been held within the tree for years, if not centuries, and make them available for the tree.

Extensive decay is as such likely to present in trees during post maturity phases and is indicative of ancient and veteran trees.

For the survey purposes decay was determined according to the Defra Metric 3 criteria as follows

Veteran trees can be classified if they have four out of the following five features:

1. Rot sites associated with wounds which are decaying >400cm².
2. Holes and water pockets in the trunk and mature crown >5cm diameter.
3. Dead branches or stems >15cm diameter.
4. Any hollowing in the trunk or major limbs.
5. Fruit bodies of fungi known to cause wood decay

Crown Structure

As trees age the architecture of the crown changes. There is likely to be less dominance by new shoots and more flattened or level crown structure is considered to be one of the features of trees at an early ancient stage.

The trees surveyed were examined from a suitable distance to determine if the crown structure demonstrated the above feature.

Retrenchment

As trees age they restrict their crown even further, effectively shutting down branches that may have a high demand for resources. This can reduce the distance necessary for resources to travel throughout the tree. This process is known as retrenchment and often includes the tree maintaining a smaller crown lower down than the original.

Trees were surveyed from a suitable distance for this feature.

Additional features surveyed.

A tree that does not meet the criteria for an ancient tree may still be considered a veteran tree if some of the following attributes are present: These are essentially the features described in the veteran tree diagram, those listed in the Natural England Farm Environment Plan Manual, the English Nature Research note previously referred and the Veteran Trees Initiative Specialist Survey Form

- Major trunk cavities or progressive hollowing
- Naturally forming water pools
- Decay holes
- Physical damage to trunk
- Bark loss
- Large quantities of dead wood in the canopy
- Sap runs
- Crevices in the bark, under branches or on the root plate
- Fungal fruiting bodies, particularly those associated with heart rot fungi species
- High number of interdependent wildlife species
- Epiphytic plants
- An old look
- High aesthetic interest

Survey results

The full survey results are presented in the Table in the appendix.

Of the twenty-one trees surveyed, 16 were dismissed as unlikely to be ancient/veteran trees.

A total of 5 trees were considered to have features that would indicate veteran and/or ancient tree status according to the criteria above.

Number of veteran tree features recorded;

For the purposes of this survey where the strict criteria of the Defra Metric 3 were not met trees have been given veteran tree status where five or more of the features listed above and derived from Reed 2000 are present.

Five features have been chosen as exceeding the number of features required in the Defra assessment. It should be noted that the English Nature Research Note (page 19) that only three of these features are required.

The results for these trees are as follows:

Girth

Standard trees i.e., trees that do not have multiple stems or trees where the first fork is above 1.5 metres

Tree No	Species	Girth	Comments
13	Pedunculate Oak	5.04	Ancient tree according to Defra Metric
21	Pedunculate Oak	5.05	Ancient tree according to Defra Metric

Trees that meet Defra Metric 3 Criteria for 4 out of 5 features: Girth included for reference

Tree Number	Species	Number of features that meet Defra Criteria	Girth	Comments
1	Oak	4	N/A	Meets the Defra Metric Veteran tree criteria
20	Oak	5	4.70	Meets the Defra Metric 3 Veteran tree criteria
21	Oak	5	5.05	Meets the Defra Metric 3 Veteran tree criteria

Trees that have five or more veteran tree features from the list above

Tree Number	Species	No of veteran tree features	Girth	Comments
1	Oak	5		A possible veteran tree
19	Field Maple	6		
20	Oak	8		
21	Oak	7		

Discussion of Individual trees

Tree 1



A 5 stemmed oak that appears to be a coppice in that the stems all appear to arise from a single continuous base

Dead wood from crown is retained to base of tree. There are hollow cavities at the base of two stems. Within one is the remains of a fungal fruiting body (photograph)



There is a small cavity to the footpath side of the stem that forks at approximately 0.3m from the ground. There is also a small cavity to stem 2 to field side.

There is a small dead wood stub on stem 3. On the stem that divides there is a large former branch union with decay, a partial stub with a small cavity between the bark and remaining wood with exposed bark 40cms x 20cms.

This indicates that five features required in the Defra Metric were observed.

Tree 13



An oak *Quercus robur*

Girth 5.04m

Of pollard habitat and stem divides at just over 2m to a number of large forks

To the field side there is a branch extending to a small cavity to what appears to be a former pruning wound. Again, to the field side, there is a former branch union showing a small heart wood stub. There are minor cavities and minor dead wood features to the crown. There is a stub to the field side with a branch tear extending to approximately 1m back towards the main branches. There is a cavity at just over 2m which extends to at least 15cms deep, above this there is a small stub. A 15cms x 2.5m dead wood stub to field side. There is the possibility of 1 or 2 water pockets to the main branch unions, as there is moss and lichens growing down from these unions.

The above features might not be considered of sufficient size to meet the Defra Metric 3 criteria although it may be considered that this tree does meet the criteria of five features for a veteran tree.

As the girth extends beyond 4 metres it meets the Defra Metric 3 criteria of an ancient tree and as such meets the definition of all ancient trees are veterans.

Tree 19



A field maple
TQ 8961 3368

A multi-stemmed field maple arising from a single low coppice stool on a hedge bank or field boundary

There is 1 hollow stem with a further small cavity at just under 2m

There is a further extensive cavity to the base of 1 stem, which appears to extend to some depth towards the main stem area. There is epicormic growth to the base. There is extensive white rot to at least one stem the result of fungal decay activity. There are two sap runs from small 5cm cavities. There is further hollowing to the base which may function as a water pocket. The overall coppice stool diameter extends to some 5m with an overall diameter including horizontal or layered stems extending to a width of 7.8m.

The two small cavities may also be features of minor bat roost potential. There are dead wood features.

Altogether there are fifteen stems arising from the coppice stool, the dimensions of which are as follows:

Stem number	circumference	diameter	Stem number	circumference	diameter
1	0.40	127	10	0.38	121
2	0.42	133	11	0.97	308
3	0.33	105	12	0.91	289
4	0.60	191	13	0.39	124
5	0.65	207	14	0.94	299
6.	1.05	334	15	0.87	277
7	0.58	184	16	0.38	121
8	1.06	337	17	0.39	124
9	0.82	261	18	0.34	108

This field maple meets the criteria of five veteran tree features. It would also meet all of the Defra Criteria except for the fact that dead wood and stems must be 1500 mm or more in diameter. It may also be effectively self-layering, as stems may have collapsed and potentially regenerating, creating a so-called walking tree. By any measure of field maples in Kent hedgerows, it is a large and significant tree and likely to be of ancient status according to recognised criteria.

Tree 20

An oak *Quercus robur*

TQ8929 3371

Growing beside a pond. Approximate diameter at 1.5m is 0.95m. Unable to measure because of the pond which is immediate to the north side of the tree. Girth is calculated at 2.98m.

The crown shows considerable retrenchment

Considerable minor dead wood of less than 10cms diameter

There are 2 large stubs showing bark loss and flaking bark

Woodpecker holes

Possible brown rot

To the south west is a major broken branch with 1.5m x 20cms loss of bark, flaking bark with a cavity that leads further into the branch

Behind this i.e., to the north is a further dead wood stub with fungi associated with wood decay (Photograph)



1m above this stem is another 1m stub with cavities and 1m x 15cms bark loss
There is a minor sap run or bleed at approximately 1.5m of 10x1cms
A further 15cms dead wood feature
Moss and lichens
Hollowing to 2 major branches (photograph)



Another dead wood stub of approximately 40cms x 15cms and another cavity
The tree supports medium bat roost potential (photograph)



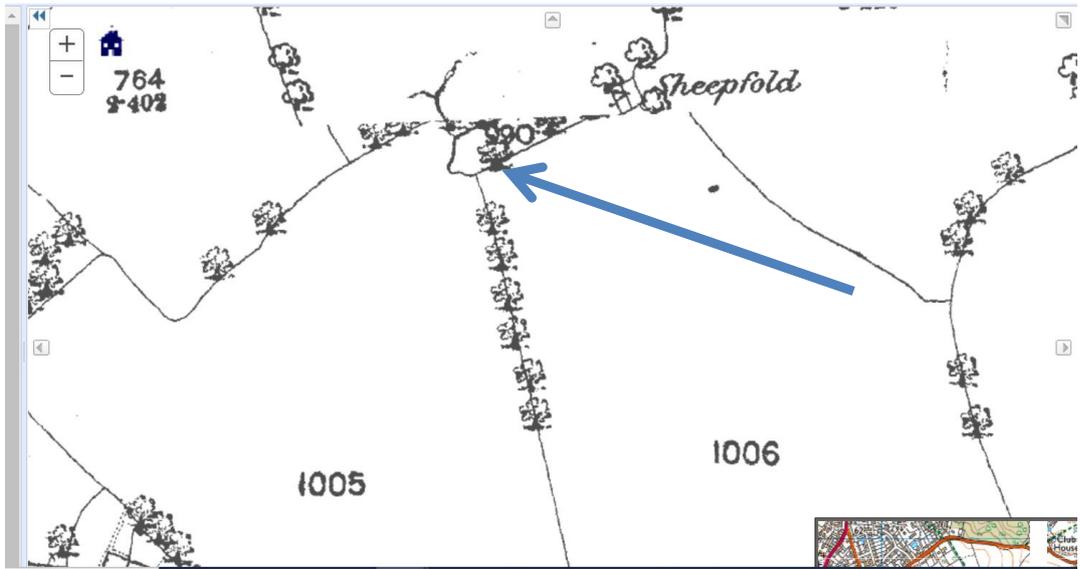
There is a probable water pocket – slight discoloration of bark

There is a dead wood branch extending to 4m

There is a dead wood stub of between 2 and 3 meters which has an elbow-like bend and there is fungal fruiting body. (Photograph)



Due to the number of features described this tree qualifies as a veteran tree. In addition, it may be shown on the 1st Edition Ordnance Survey map although the accuracy of this is not to be relied upon.



Tree 21



An oak *Quercus robur*

TQ8928 3365

Girth measured from the field side 5.05m

Girth measured from the stream side 5.23m

This veteran oak is by a stream

It is showing the first signs of retrenchment

The lower trunk is formed of wide buttresses covered in moss and lichens

The crown forks to 4 main stems and a number of other stems

To the west there is hollowing with bark loss approximately 4m high and 45cms at the base, narrowing to approximately 14cms at the highest point, above this feature continues as a narrow crack to the bark with staining.

Above this feature at approximately 3m there is a large branch cavity which appears to extend some distance into the main trunk

A small amount of bark loss continues a further 1.5 – 2m and from there on, on this stem, there are 2 dead wood branch features of approximately 10-15cms in diameter extending up to nearly the full height of the stem

There is a further stem that is dead with considerable bark loss and brown rot

Overall, within the crown there are numerous epicormics and at least 1 species of lichen and 1 species of moss

To the right-hand base of the cavity is a fungal fruiting body of 8cms diameter
Also 2 further species of fungi in this cavity (photograph)





To the buttress is a large fungal fruiting body. This is 40cms x 20cms at the widest point and is identified as *Ganoderma resinaceum* a fungal species associated with decay.

Calculation of Root Protection Area for the five trees with ancient/veteran tree features

The Root Protection Area describes a figure commonly used to calculate the minimum area that is required to protect a tree and particularly its roots system in the context of development sites.

The root protection area for a single stemmed tree as defined in BS5837: Trees in relation to design, demolition and construction-recommendations is a circle around the tree with a radius of 12 times the stem diameter of the tree when measured at 1.5 metres from the ground.¹³

Calculations for multi-stemmed trees are somewhat different and essentially, but much simplified, require a calculation of the square root of the sum of the stem diameters

¹³ BSI Standards Publication BS5837:12 Trees in relation to design, demolition and construction-Recommendations

The RPA is considered to be the minimum area around a tree sufficient to maintain its viability and which should be treated as a priority. The RPA is generally shown as a circle of equal dimensions.

However, it should also be noted that the description of the RPA as a well-defined circle may not be an accurate depiction of the morphology of an individual tree's root system. A root system may deviate from this for a number of environmental reasons.

The actual distribution of an individual tree's roots may not follow a perfect circle around the tree as they can be affected by a variety of environmental factors.

It is often generally not recognised that tree roots can be very shallow with most confined to the first 600mm of the soil. In addition, roots may well extend beyond the tree canopy and the prescribed root protection area.

The root protection area is capped at a radius of 15metres in BS5837 and in effect is limited to provide adequate protection to a tree with a single stem diameter of 1250mm or 3925mm (3.9 metres) girth ($1250 \times 3.14/\pi$)

From this calculation it can be observed that trees that are considered to be ancient within the Defra Metric guidance at 4m girth/1273mm diameter are unlikely to receive adequate protection.

Recently concerns over adequacy of the root systems of veteran and ancient trees has prompted further advice from the Forestry Commission and Natural England as already discussed.

In particular standing advice states:

A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter.

A comparison of root protection areas calculated for the trees considered ancient/veterans

Tree No	Species	Girth	Single Stem diameter mm	Radius of nominal circle	RPA M ² capped 707m ² (TableD1 BS5837)	Radius of True Circle @x12 stem diameter(m)	RPA @12x stem diameter M ²	Veteran tree Buffer at 15x stem diameter radius M ²
13	Oak	5.04	1605	N/A	707	19.26	1164.77	1819
20	Oak	2.98	949	11.40	408	11.388	407.21	636
21	Oak	5.05	1608	N/A	707	19.29	1169	1826

Tree no	Species	No of stems	Stem diameter calculated to BS5837: 2012(mm)	Radius of nominal circle	RPA M ² capped 707m ² (TableD1 BS5837)	Radius of True Circle @x12 stem diameter(m)	RPA @12x stem diameter M ²	Veteran tree Buffer at 15x stem diameter radius M ²
1	Oak	5	1282	N/A	707	15.38	743	1161
19	Field Maple	18	734	9.00	255	8.81	243	380

Variance between recommended RPA and recommended Veteran tree buffer

Tree No	Recommended RPA (m ²)	Recommended Veteran tree buffer (m ²)	Additional Veteran tree buffer required (m ²)
1	707	1161	454
13	707	1819	1112
19	255	380	125
20	408	636	228
21	707	1826	1119

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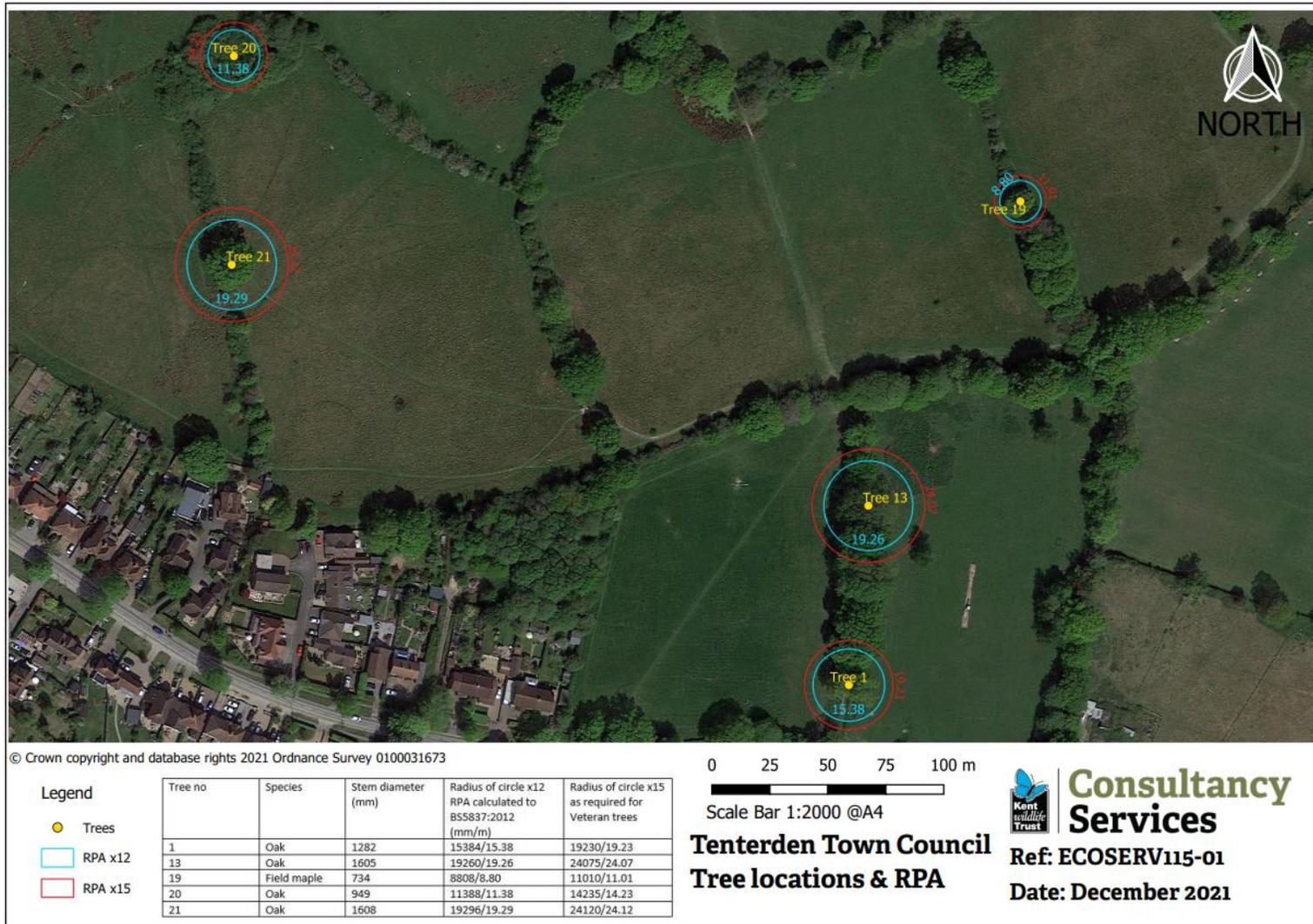
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Appendices

1. Location of trees map
2. Tree Table

1. Location of Trees Map



2. Tree Table

Tree	Species	Tree habit	Girth in metres	Defra metric criteria for veterans 4 out of 5 met	No of veteran tree features	Assessment Veteran Yes/No	Assessment Ancient Yes/No	Comments
1	Oak	Coppice		4	5	Yes	No	5 stems
2	Oak	2 Stemmed						Does not qualify
3	Oak	Standard	2.30	1	2	No	No	Does not qualify
4	Oak	2 Stemmed	2.40/2.40	0	1			Does not qualify
5	Oak	Standard						Does not qualify
6	Oak	Standard	2.10	3	3	No	No	Does not qualify
7	Oak							Does not qualify
8	Oak							Does not qualify
9	Ash							Does not qualify
10	Oak	Standard	3.50	2	5	No	No	Does not qualify. Tree tag 0576
11	Oak	Standard	2.17	0	4	No	No	Does not qualify
12	Oak	Standard	3.28	0	1	No	No	Does not qualify
13	Oak	Standard	5.04	2	4	No	Yes	ancient due to a girth >4m
14	Hornbeam	Standard						Does not qualify
15	Oak	Standard						Does not qualify
16	Oak	Standard						Group of 4. Does not qualify
17	Oak	Standard						Does not qualify
18	Hornbeam	Pollard						Merits further survey
19	Field maple	Coppice		2	6	Yes	Yes	
20	Oak	Standard	2.98	5	8	Yes	Yes	Estimated girth as by pond
21	Oak	Standard	5.05	5	7	Yes	Yes	

