

## Ancient Woodland Inventory Revision: Oxfordshire

**This is an abridged version of the full report issued to Oxfordshire County Council in May 2014. Copies of the full report and further information about the project can be obtained from TVERC.**

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## **Executive summary**

The Ancient Woodland Inventory (AWI) was originally conceived and compiled by the Nature Conservancy Council (NCC) in the 1980s to identify and map the extent of ancient woodland (land that has been continuously wooded since 1600) to a minimum of 2 ha. Since then the AWI has undergone various updates and reviews but not a complete and systematic revision. Ancient woodland is becoming increasingly important in relation to both local and national planning and biodiversity policies. It is an extremely valuable part of our landscape, with many species relying on them for their survival. Woodland can also be a source of carbon-neutral wood-fuel and is important for carbon sequestration, flood alleviation and soil preservation. It also has community benefits such as forest schools and green gyms and provides a lasting legacy for future generations. With advances in technology and improved accessibility of historic resources it is now possible to record and map ancient woodland down to 0.25 ha. A key aim of the current project was to systematically reassess the ancient woodland across Oxfordshire and Buckinghamshire (excluding The Chilterns) to current day mapping standards and to include woodlands between 0.25 ha and 2 ha. In Oxfordshire, even sites less than 2 ha in size make a major contribution to the local ecology. Any omissions and inaccuracies from the inventory undermine their protection through the planning process.

The method used was developed in the south-east and is now the accepted standard as the nationally approved approach to reassess the ancient woodland resources in England. This involves a series of stages and both field and historic map resources to build up evidence in support of wooded land uses as far back to 1600 as is possible.

The National Forest Inventory (Forestry Commission, 2012) estimated that 9.9% of the total land area of England was woodland. The equivalent figure for Oxfordshire is similar at 8.9% (23,203 ha, as calculated using the National Forest Inventory). Just over a third (34%, 7,940 ha) of the woodland in Oxfordshire is included on the AWI, as published in 2013 (and pre-2012 for the Chilterns AONB area in South Oxfordshire), where generally the minimum woodland size recorded was 2 ha. Following the review of the AWI (including The Chilterns AONB in South Oxfordshire in 2012), taking woodland down to 0.25 ha into consideration, 38% (8,919 ha) of Oxfordshire's woodland is considered to be of ancient origin, representing a net gain of 979 ha. Mapping to current industry standards and the inclusion of woods of 0.25 - 2 ha resulted in both 'losses' and 'gains' of ancient woodland; however there was little change in the land coverage of Oxfordshire's area of ancient woodland before and after the ancient woodland review: 3.1% and 3.4% respectively.

Although about 95% of the revised ancient woodland in Oxfordshire is within landscape and nature conservation designations (Areas of Outstanding Natural Beauty and Conservation Target Areas), only 20% has legal protection through wildlife legislation (notable SSSI).

The AWI is, and always will be, considered 'provisional' since new data and resources continually become available and technologies advance.

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## **1. BACKGROUND**

Detailed discussions on the background to the ancient woodland inventory (AWI) and current revision methodology are well documented in the reports of counties that have already undergone detailed revisions (e.g. Benstead-Hume & Morris, 2012; Davies *et al.*, 2011, McKernan & Goldberg, 2011). Thames Valley Environmental Records Centre (TVERC) undertook a review of the AWI for Oxfordshire and Oxfordshire and Buckinghamshire in 2014. The project report for the Oxfordshire and Buckinghamshire (Aylesbury and Milton Keynes) AWI review provides a technical and comprehensive review of the methodology as applied in the project area (Miller, 2013).

This report focuses on the background and results of relevance to Oxfordshire and includes the reviewed AWI for the Chilterns that was completed in 2012 prior to the rest of Oxfordshire being reviewed.

### **1.1 THE ANCIENT WOODLAND INVENTORY**

The ancient woodland inventory was originally conceived and compiled by the Nature Conservancy Council (NCC) in the 1980s to identify and map the extent of ancient woodland (see Box 1.1 for definitions). Since the 1980s the AWI has undergone a series of updates and reviews as technology and resources have advanced (see Box 1.2). However, there has not been a complete and systematic review since it was originally produced. The AWI is, and always will be, considered 'provisional' since new data and resources continually become available and technologies advance.

The original Oxfordshire AWI was published in 1988 (Hughes, 1998). For the purposes of this report changes in ancient woodland have been calculated through comparisons with the revised AWI (i.e. taking woodlands down to 0.25 ha in to consideration) and that last published by Natural England on the *MAGIC* website (SP 100 km grid: Nov 2013, V2.3; SU 100 km grid: March 2013, V2.1). For the woodlands within the Chilterns AONB, data have been extracted from the Chilterns report (Benstead-Hume & Morris, 2012) and GIS files held at Thames Valley Environmental Records Centre.

### BOX 1.1 Ancient woodland definitions

Ancient wood pasture	<p>Woods derived from ancient pasture woodland managed for both trees and livestock or deer (Harding &amp; Rose, 1986). These woodlands are usually associated with ancient deer parks, Royal Forests or wooded common land. They frequently occur in a mosaic with other habitats and the boundaries are often poorly defined. Wood pasture was previously included on the original Inventories as ASNW (see below) where recognisable stands of trees, evident on old maps, remain unchanged. Parkland sites with wide-spaced trees were omitted (Spencer &amp; Kirby, 1992). However, the map sources used for the original Inventories were often inconsistent with only a partial coverage. For the purposes of the current report the following guidance was followed to help decide if an area of wood pasture should be included or not on the revised AWI:</p> <ul style="list-style-type: none"><li>• At least 20% tree cover over 80% of the site on current aerial photographs</li><li>• Woodland shown on the Ordnance Survey First Edition County Series maps (produced between 1870 and 1887), with the cartography indicating at least 20% tree cover over 80% of the site.</li><li>• Former enclosed Forest or common land as identified on the Ordnance Surveyors' Drawings (1789-1840).</li></ul>
Ancient woodland	<p>An area that has been wooded continuously since at least 1600 AD. This date reflects the time prior to the increase in new planting following the publication of <i>Sylvia</i> (Evelyn, 1664) and when good maps started to become more common.</p>
ASNW	<p>Ancient Semi-Natural Woodland: stands that are composed predominantly of trees and shrubs native to the site that do not obviously originate from planting. They include stands that may have been managed by coppicing or pollarding in the past, as well as those where the tree and shrub layer has grown up by natural regeneration.</p>
PAWS	<p>Planted Ancient Woodland Sites: areas of ancient woodland where the original native tree cover has been felled and replaced by planted stock most commonly of a species not native to the site, for example conifers but also broadleaves such as sycamore.</p>
Recent woodland	<p>Areas that became wooded after 1600, i.e. secondary or recent. Includes planted woodland and where woodland has naturally established on land formerly used for other purposes, often as a result of cessation of land management. Since such woodlands do not meet the criteria of 'ancient woodland' (see above) they are excluded from the revised AWI. However, it is noted that in some cases (e.g. older sites or those adjacent to ancient woodland) may show biological characteristics found in ancient woodlands, although diversity is usually lower. Recent woodlands may be of high biodiversity value and be defined as Priority Habitat under Biodiversity 2020. Priority Habitats are protected from harmful development under the National Planning Policy Framework (NPPF).</p>

### BOX 1.2 Timeline of the Ancient Woodland Inventory

1981 – 1992	NCC compiled the AWI on a county by county basis. Each county was documented and mapped in paper format. Generally, the minimum size of woodland mapped was 2 ha in response to clarity and efficiency of mapping by hand. Methodology followed that developed in Norfolk (Goodfellow and Peterken, 1981).
1995 – 1999	NCC undertook further revisions.
1998 – 2000	The original AWI was digitised by the Forestry Commission (FC). Some changes since the original AWI was produced were included during the digitisation process.
2000	The digital inventory produced is hosted and updated on a case-by-case basis by English Nature (successor to the NCC and now Natural England).
2005	AWI (now a national, rather than county by county, dataset) aligned with Ordnance Survey's MasterMap, the industry standard for mapping, making it compatible with other national datasets.
2004 – current day	With advances in technology and readily available resources, woodland can be mapped to a smaller size and current revisions of the AWI generally go down to 0.25 ha. Revisions began in south-east England since it is considered the most wooded region, containing in the order of 40% of the ancient woodland in England (McKernan & Goldberg, 2011). The methodology " <i>involves a complete and systematic rebuilding of the Ancient Woodland Inventory dataset</i> " (McKernan & Goldberg, 2011). See Section 2 of this report for further details.

## 1.2 IMPORTANCE OF THE ANCIENT WOODLAND INVENTORY IN PLANNING

Knowing the distribution and extent of ancient woodland and associated documentation has become increasingly important, initially in response to the 1985 Broadleaves Policy and more recently in relation to planning and conservation legislation and policies; e.g.

2000: The Countryside and Rights of Way Act

2006: Natural Environment and Rural Communities Act. Section 40 2011: Biodiversity 2020

2012: National Planning Policy Framework (paragraph 118)

2013: Government Forestry and Woodlands Policy Statement

Natural England Standing Advice.

More details about these policies are included in the full report for Oxfordshire County Council, available from TVERC.

All woodlands, but particularly ancient woodlands, are, ecologically, an extremely valuable part of our landscape with many species relying on them for their survival. Woodland can also be a

source of carbon-neutral wood-fuel and is important for carbon sequestration, flood alleviation and soil preservation. They also have community benefits such as forest schools and green gyms and provide a lasting legacy for future generations. In the landscape context ancient woodlands are important features at a local scale (e.g. regional and county level) and are of relevance to Areas of Outstanding Natural Beauty (Cotswolds, Chilterns and North Wessex Downs) and Oxfordshire's Conservation Target Areas.

Many, although not all, woodlands classified as NERC Act S41 'Habitats of Principal Importance' are also ancient woodland. These habitats are those, initially identified by the UK Biodiversity Action Plan (UK BAP), as being most at threat and requiring conservation action. In July 2012, the UK BAP was superseded by the *UK Post 2010 Biodiversity Framework*. The UK BAP priority habitats list *remains an important reference source and has been used to help draw up statutory lists of priorities* (JNCC, 2014) which are named in section 41 of the Natural Environment and Rural Communities Act.

Additional further national policies and guidance can be found at the sources listed below.

- National policy relating to ancient woodlands is set out in "Keepers of time: A statement of policy for England's Ancient and Native Woodland"  
<http://www.forestry.gov.uk/keepersoftime>;
- The Forestry Commission have also prepared practice guidance available on managing ancient woodlands <http://www.forestry.gov.uk/forestry/infd-8azkv9>.
- UK BAP and priorities habitats: UK Post 2010 Biodiversity Framework.  
[http://jncc.defra.gov.uk/pdf/UK\\_Post2010\\_Bio-Fwork.pdf](http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf)

### **1.3 THE PROJECT**

#### Study area

Figure 1.1 shows the area covered by the project: Oxfordshire and Buckinghamshire (excluding Chilterns AONB). The Chilterns AONB that cuts through the south of Oxfordshire and includes south Buckinghamshire was completed in 2012 (Benstead-Hume & Morris, 2012). This current

report covers Oxfordshire, including the revision of the Chilterns AONB that falls within the county conducted by Benstead-Hume & Morris (2012).

### Aims

The key aims for the project were to:

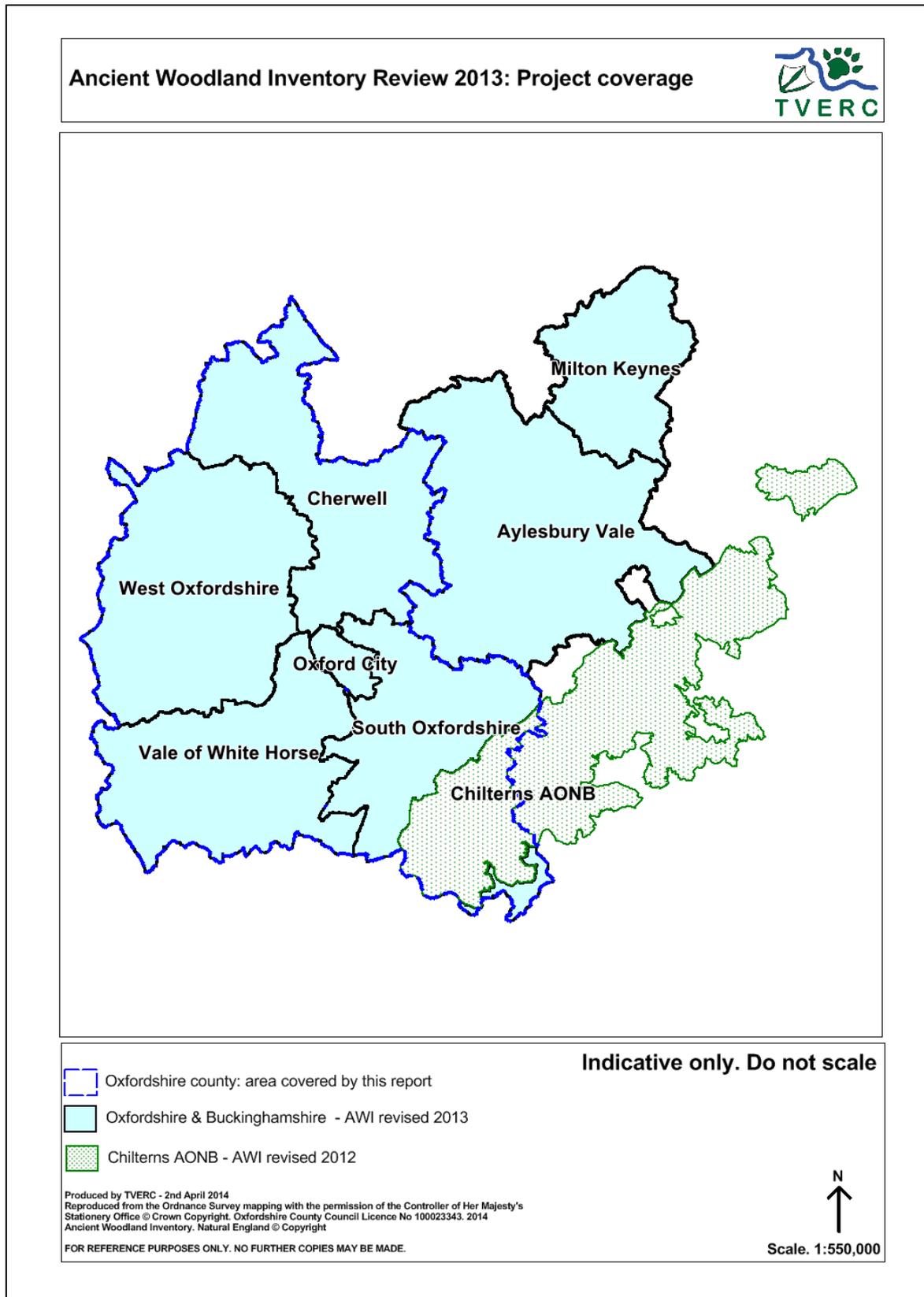
1. revise the Ancient Woodland Inventory (AWI) to include sites under 2 ha (to 0.25 ha) and address inaccuracies and omissions.
2. provide the updated AWI to planning authorities, the Forestry Commission and Natural England so that ancient woodland can be appropriately considered when development planning decisions are made.

### Funding

The project has been principally funded by Natural England and the Forestry Commission.

Additional funding was provided by Oxfordshire County Council for:

- County specific report (to include the revised AWI within the Oxfordshire part of the Chilterns AONB)
- Ground truthing of some of the larger areas of potential ancient woodland resulting from the desk based decision processes
- Provision of a GIS layer showing updated provisional AWI within Oxfordshire



**Fig. 1.1 Project and report coverage**

## 1.4 OVERVIEW OF WOODLAND IN THE PROJECT AREA

### History

An extract from 'A History of the County of Oxford' (Victorian County History, 2013) clearly demonstrates that there has been significant planting in the county (at the time of this extract the county boundary differed from the modern day one which now includes land that was formerly in Berkshire) since the 19<sup>th</sup> century:

*"The official Agricultural Returns for 1891 give a total acreage of 24,466 acres [9901 ha] for the woods of Oxfordshire; this total included 763 acres [309 ha] that had been planted during the past ten years. The woodland return for 1895 showed a considerable gain in this county, as the total acreage then stood at 26,611 [10769 ha], the acres planted since 1881 numbering 1,293 [523 ha].*

*The returns made on 5 June, 1905, were arranged on a better principle, being divided into coppices, plantations, and other woods. By coppice is meant woods that are cut periodically and reproduce themselves naturally by stool shoots; and by plantation is signified land planted or replanted within the last ten years. Oxford is returned as having 4,464 acres [1,807 ha] of coppice, 1,385 [560 ha] of plantation, and 18,528 [7498 ha] of other woods. This gives a total of only 24,377 [9,865 ha], showing a falling off of about 2,000 acres [809 ha] in the last decade. The attention paid of late to arboriculture has led to the gratifying increase throughout England of nearly half a million acres under woodland in the past ten years. Oxfordshire, however, is one of the very few counties that have considerably decreased in the like period."*

From: 'Forestry', A History of the County of Oxford: Volume 2 (1907), pp. 293-301.  
URL: <http://www.british-history.ac.uk/report.aspx?compid=101947> Date accessed: 22 November 2013.

### Ecology

The following review of the woodland ecology of Oxfordshire is based on the description of the woodland in the county documented in the Local Wildlife Sites designation criteria (BMERC & TVERC, 2009).

Woodlands occur throughout the project area and their biodiversity value and importance can be described by their relationship to three priority habitats.

- A. Lowland mixed deciduous woodland
- B. Beech and yew woodland
- C. Wet woodland.

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More details about these habitats are included in the full report for Oxfordshire County Council, available from TVERC.

### 1.5 CURRENT DISTRIBUTION OF ANCIENT WOODLAND

A History of the County of Oxford (Victorian County History, 2013) notes that “*The county of Oxford was, from the earliest historical days, one of the best-wooded shires in England; in fact it was, in the main, woodland down to the twelfth and thirteenth centuries*”. However, it should be noted that the county boundary of Oxfordshire has changed at various times since the mid-19<sup>th</sup> century. Table 1.1 summarises the quantity of all woodland in the county and shows there is significantly less woodland in the 21st century.

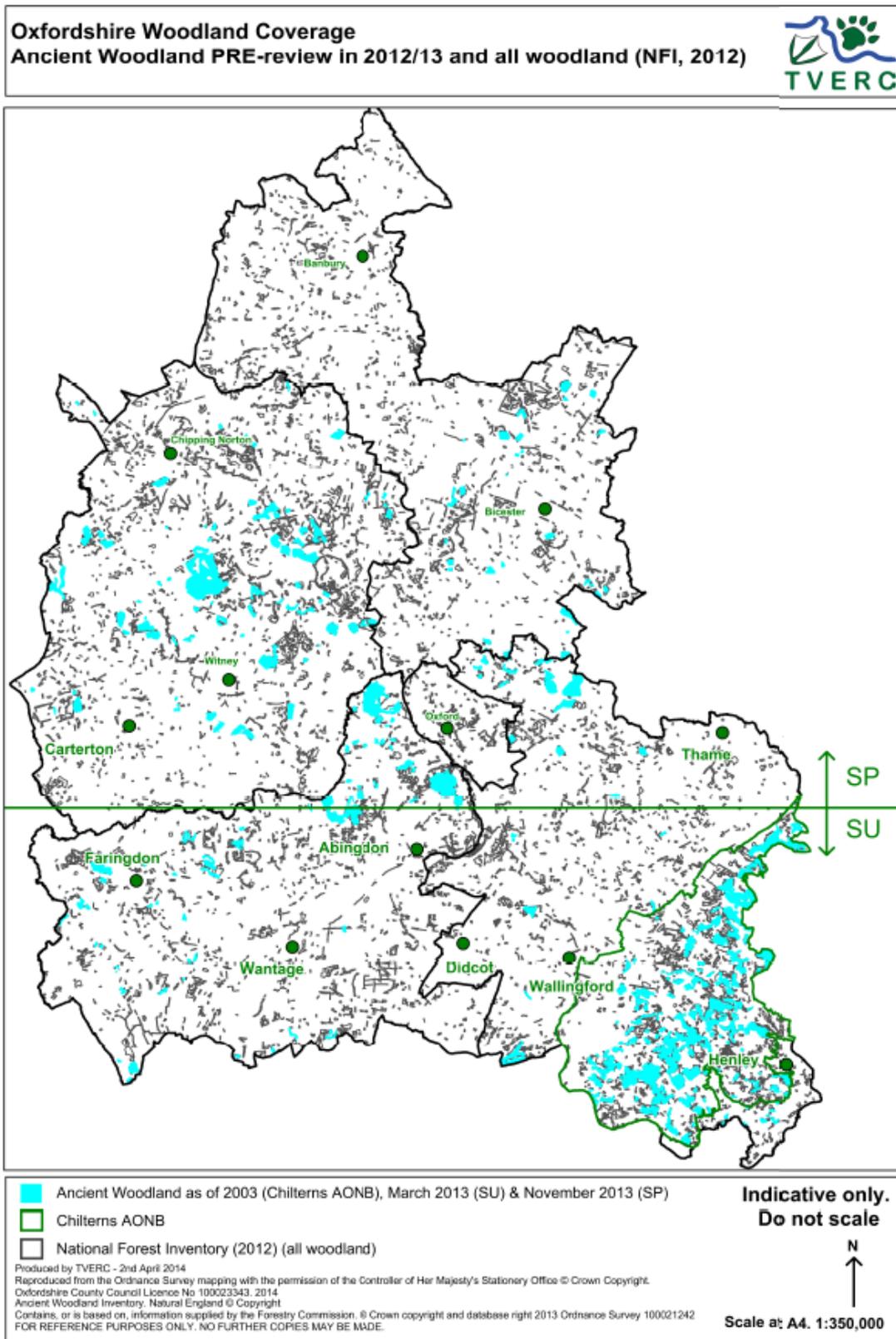
District	Area (ha)	All woodland		Ancient woodland <sup>2</sup>		
		Area (ha) <sup>1</sup>	% of district area	Area (ha)	% of district's woodland	% of district area
<b>Cherwell</b>	58,700	2,952	5	381	13	0.6
<b>West Oxfordshire</b>	71,240	6,453	9	2,033	32	2.9
<b>Oxford</b>	4,546	250	6	0	0	0
<b>Vale of White Horse</b>	57,700	4,598	8	1,519	33	2.6
<b>South Oxfordshire<sup>3</sup></b>	67,721	8,958	13	4,008	45	5.9
<b>Oxfordshire (whole county)</b>	259,907	23,203	9	7,940	34	3.1
<b>Notes</b>						
1. Obtained from the National Forest Inventory, England (Forestry Commission, 2012), and excludes non-woodland categories						
2. As recorded on AWI published 2013 (all areas except the Chilterns AONB in South Oxfordshire which is as recorded pre-2012 revision)						
3. Data calculated from 2013 revision and 2012 revision of the Chilterns AONB area within the District						

**Table 1.1 Current ancient woodland in Oxfordshire**

As can be seen in Figure 1.2, prior to the AWI revisions in 2012 and 2013, there is a high density of ancient woodland in the south-east of the county in the Chilterns. Much of the rest of the ancient woodland is located in a south-west to north-east band from Faringdon to Bicester. There is very little ancient woodland in the north of the county and in the south (excluding the Chilterns) in a south-west to north-east band from Wantage to Thame. Although these areas have minimal ancient woodland there are numerous secondary woodlands. The distribution of ancient woodland

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is also reflected in Natural England's National Character Areas (NCAs) (Natural England, 2013). More details about these NCAs are included in the full report for Oxfordshire County Council, available from TVERC.



**Fig. 1.2 Oxfordshire woodland coverage:  
Ancient woodland Pre-review in 2012/13 and all woodland (NFI, 2012)**

## **2. METHODOLOGY**

### **2.1 OVERVIEW**

A description of the approach and development of the methodology is well documented in previous reports on revised ancient woodland inventory (e.g. Benstead-Hume & Morris, 2012; Davies, 2011, McKernan & Goldberg, 2011). A detailed description of how it was applied in Oxfordshire is provided in Miller (2013). A brief overview is summarised here.

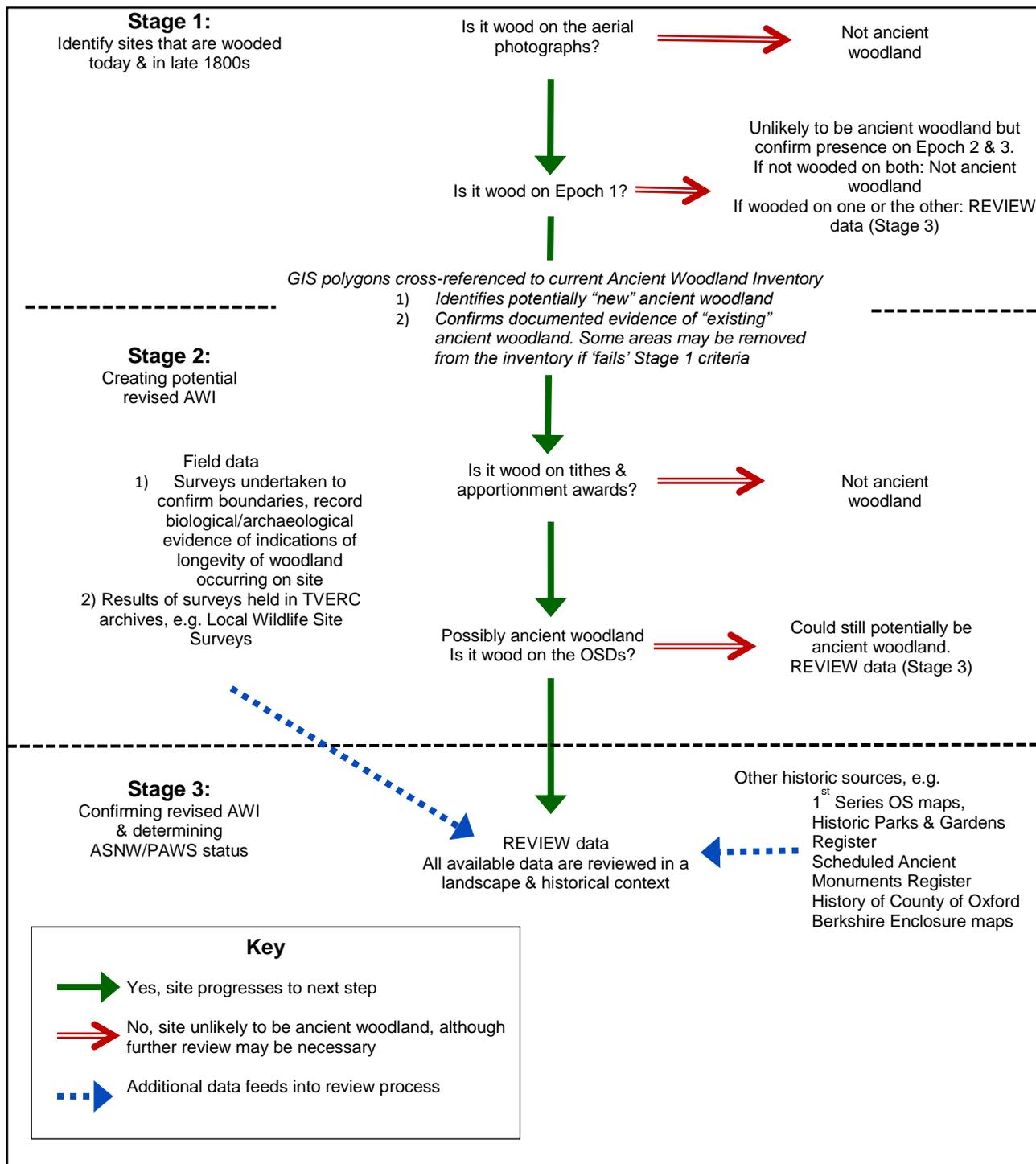
Figure 2.1 shows the approach taken during the project to identify potential ancient wood; further details and interpretation are provided in Miller (2013).

In addition to the stages detailed in Figure 2.1 all the tithe maps available for the project area were digitally scanned and geo-referenced.

### **2.2 DATA SOURCES AND CAPTURE**

Box 2.1 summarises the key mapped data sources and dates of each source utilised during the ancient woodland decision making process. Across the county there was more or less complete coverage of Epochs 1 to 3 with no significant interpretation issues arising, for example, from unclear maps, that could not be resolved through using other mapped sources. Coverage of Tithe maps and Ordnance Surveyors' Drawings (OSD) across the county was incomplete (see Figure 2.2).

In addition to the mapped data sources a sample of sites were ground-truthed. Site surveys were undertaken for a sample of woodland sites identified as potentially being of ancient origin or where confirmation was required as mapped evidence was inconclusive or inconsistent, e.g. boundaries. However, as a result of difficulty in obtaining access permission, the samples were biased to those with public rights of way running through or adjacent to woods, open access woodlands or where permissions were readily achieved. The survey methodology was the same as that used in other counties and is previously well documented, e.g. (Benstead-Hume & Morris, 2012). However, in brief it involved looking for particular indications of ancient woodland, notably archaeology and ecological.



**Fig. 2.1 Overview of decision process taken in identifying ancient woodland**

**BOX 2.1 Dates of mapped & aerial photograph sources used to aid decision making on ancient woodland status and their precedence**

<b>Data source</b>	<b>Date</b>
Various maps available online at <a href="http://www.british-history.ac.uk">www.british-history.ac.uk</a>	Various: 1600 – 1800
Various maps at different scales available online at <a href="http://www.old-maps.co.uk">www.old-maps.co.uk</a>	Various
Enclosure maps (former county of Berkshire)	c. 1800-1818
Ordnance Surveyors' Drawings	1789-1840
Ordnance Survey First Series	1828-1835
Tithe maps	Oxfordshire c. 1838-1854 Buckinghamshire c. 1840-1850
1 <sup>st</sup> edition OS maps (Epoch 1)	1870-1887
2 <sup>nd</sup> edition OS maps (Epoch 2)	1898-1905
3 <sup>rd</sup> edition OS maps (Epoch 3)	1912-1926
Forest Enterprise Ancient Woodland Project	2003
Aerial photography	Oxfordshire: 2009 Buckinghamshire: 2009, 2010 or 2012
MasterMap	2012
National Forest Inventory (NFI)	2012

When GIS polygons were cut to accurately depict the area of woodland for the revised AWI, precedence was initially for MasterMap, i.e. the accepted industry standard for mapping. Where an area of woodland was smaller in the past, e.g. on Epoch or tithe maps the following order of precedence was taken:

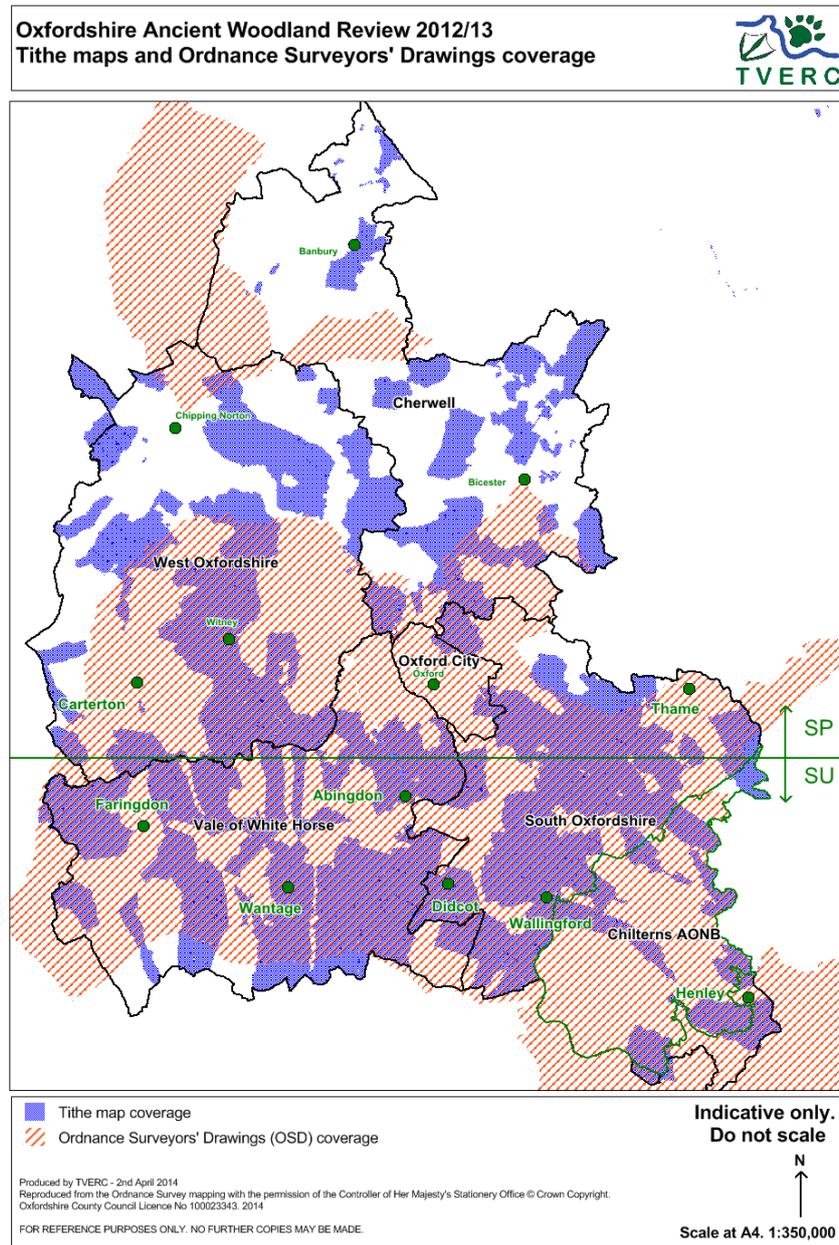
1. Latest Epoch map that best matched the historic boundary
2. Where there was not an appropriate MasterMap or Epoch boundary then an interpretation of Tithe map boundaries in relation to matched modern day features, such as field corners was used.
3. Aerial photography was the last features to use when cutting polygons. Where it was necessary to use this data source then the boundary was taken to the tree centre, not the canopy edge, where ever practical.

The National Forest Inventory and the Forest Enterprise Ancient Woodland Project were principally used, in conjunction with aerial photography and the current AWI, to determine ASNW/PAWS status. Although of minimal coverage and except where there was strong evidence (documented during the current revision process) to suggest otherwise, the Forest Enterprise Ancient Woodland Project interpretation of ancient woodland boundaries and status took precedence. Otherwise, in determining status, the NFI took precedence except where it contradicted the current AWI ASNW/PAWS status; in such cases a decision was made using aerial photography.

Data were captured and analysed in GIS format using MapInfo 11.0.4 (Pitney Bowes). Data can be exported into various other formats, including Excel and Esri GIS shapefiles. The data analysis presented in Section 3 was primarily undertaken in Excel. All raw data (which include decisions made at each stage of assessing data sources) are held at Thames Valley Environmental Records Centre.

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The data gathered during the field surveys were captured in a Recorder 6 database and are held at Thames Valley Environmental Records Centre. From this database, information about specific sites can be extracted and reports generated as required.



**Fig. 2.2 Tithe map and Ordnance Surveyors' Drawings coverage**

### 3. RESULTS: CHANGES IN ANCIENT WOODLAND

#### 3.1. OVERVIEW OF REVISED ANCIENT WOODLAND ACROSS OXFORDSHIRE

Table 3.1 provides a summary of the ancient woodland before and after the revision, in relation to woodland cover across Oxfordshire

The county has 8.9% woodland cover. Prior to the revision of the AWI this comprised 3.1% ancient and 5.8% recent/secondary woodland (see Fig.1.2). Following the AWI revision the woodland cover across the project area that is considered to be ancient increased to 3.4% (see Fig 3.1). Fig 3.2 illustrates a comparison of the distribution of ancient woodland before and after the revision.

District (area)	All woodland		AWI pre-revision <sup>2</sup>			AWI post-revision		
	Area (ha) <sup>1</sup>	% of District	Area (ha)	% of woodland	% of District	Area (ha)	% of woodland	% of District
<b>West Oxfordshire</b> 71,240 ha	6,453	9.1	2033	31.5	2.9	2241	34.7	3.1
<b>Vale of White Horse</b> 57,700 ha	4,598	8.0	1519	33.0	2.6	1595	34.7	2.8
<b>Oxford</b> 4,546 ha	250	5.5	0	0.0	0.0	15	6.0	0.3
<b>Cherwell</b> 58,700 ha	2,944	5.0	380	12.9	0.6	483	16.4	0.8
<b>South (incl. Chilterns AONB)<sup>3</sup></b> 67,721 ha	8,958	13.2	4008	44.7	5.9	4584	51.2	6.8
<b>Oxfordshire county</b> <b>259,907 ha</b>	<b>23,203</b>	<b>8.9</b>	<b>7,940</b>	<b>34.2</b>	<b>3.1</b>	<b>8,919</b>	<b>38.4</b>	<b>3.4</b>
<b>Notes</b>								
1. Obtained from the National Forest Inventory, England (Forestry Commission, 2012), and excludes non-woodland categories								
2. As recorded on AWI published 2013 (all area except Chilterns AONB in South Oxfordshire which is as recorded pre-2012 revision)								
3. Data calculated from 2013 revision and 2012 revision of the Chilterns AONB area within the District								

**Table 3.1 Summary of woodland across Oxfordshire**

Following the revision of the AWI there has been a net gain of 979 ha of ancient woodland in Oxfordshire. Across the whole woodland of the county this equates to a 4.2% increase in ancient woodland. There are three likely explanations for this increase.

- Woodlands less than 2 ha in area that were not included in the original AWI.

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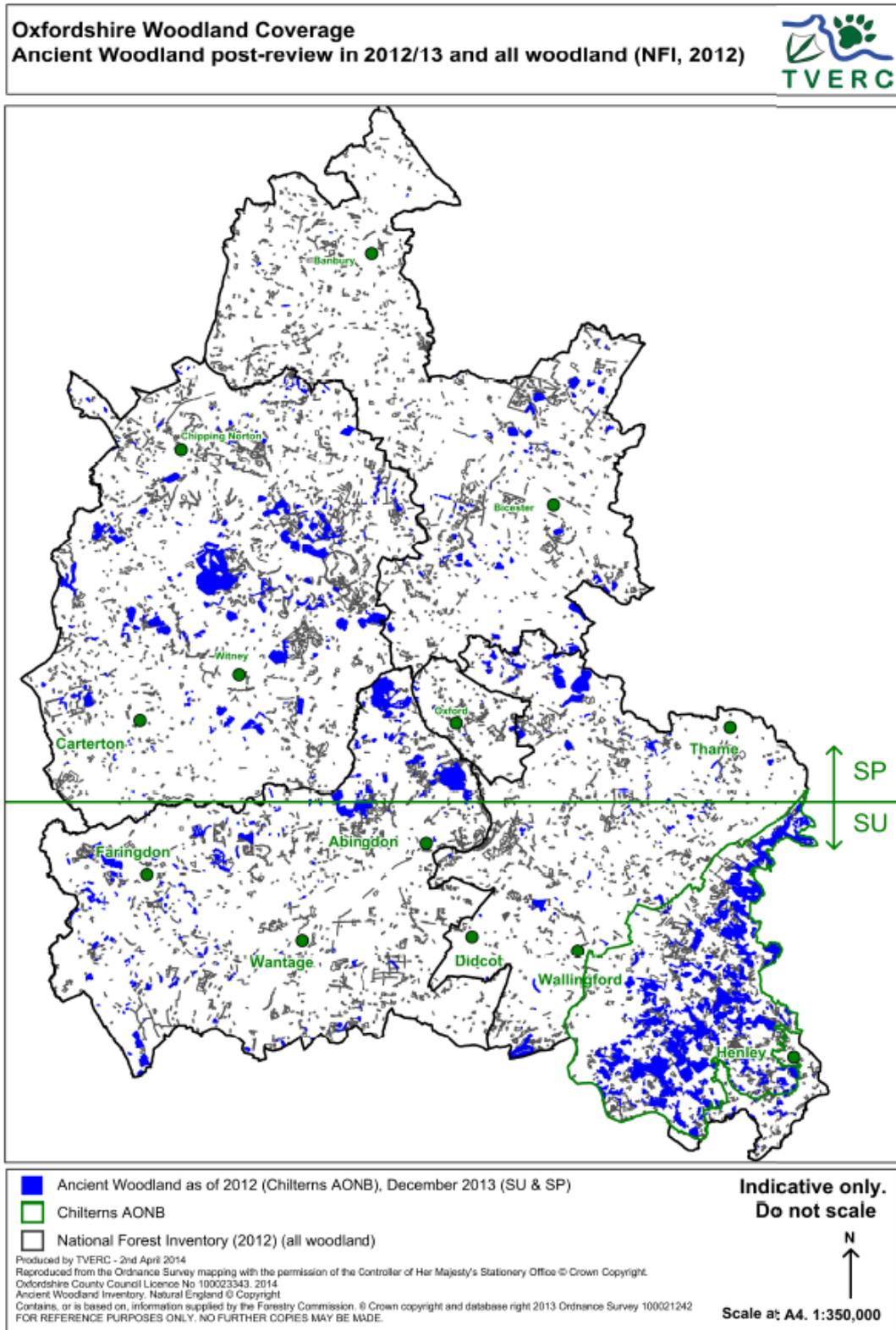
- Digitisation errors of boundaries were corrected and refined.
- New/improved evidence was available confirming a longer history of woodland than previously thought on some woodlands greater than 2 ha.

However, it should be noted that there was some 'loss' of ancient woodland from the current AWI. Such 'losses' are the result of the following situations:

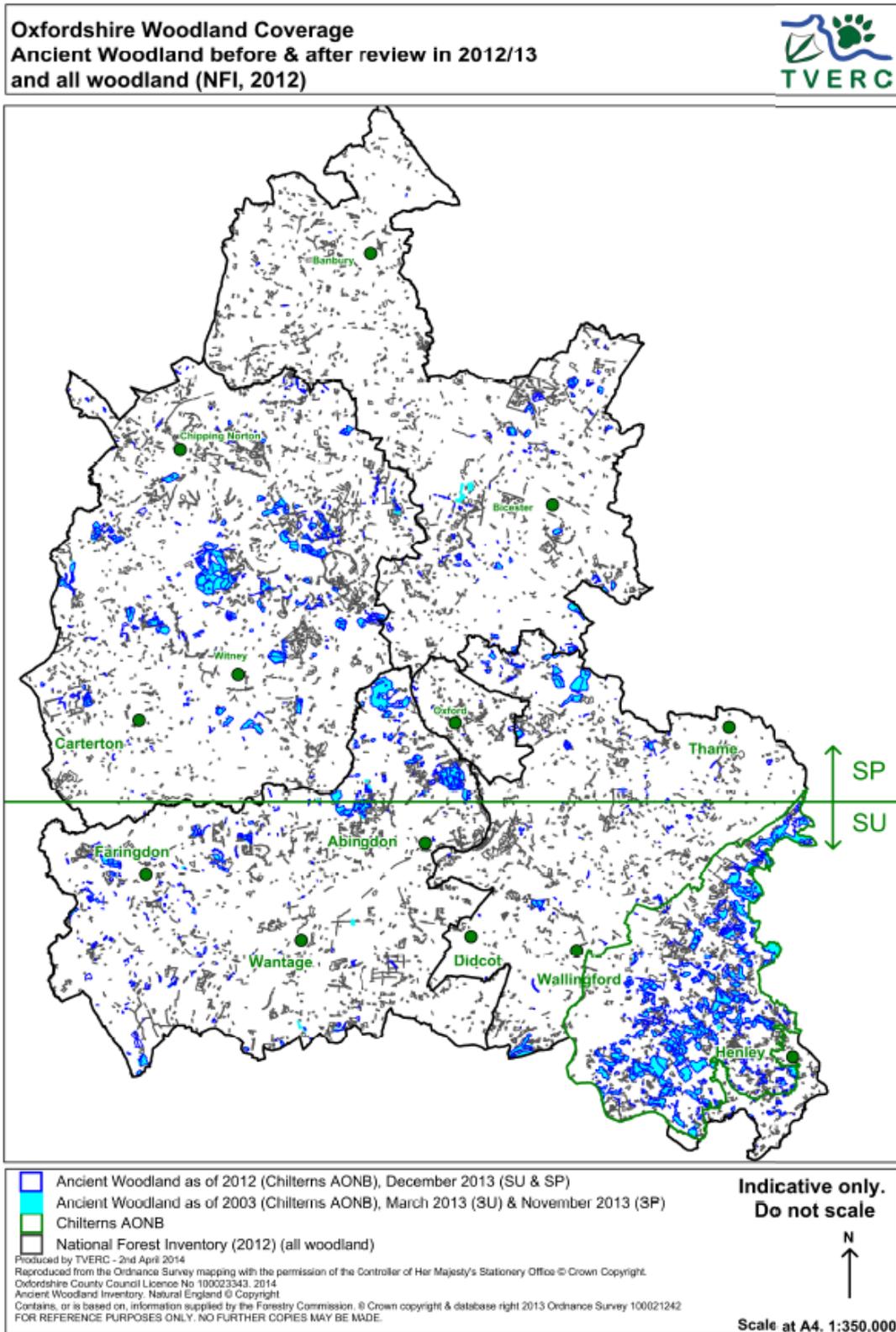
- Correcting and refining digitisation errors of boundaries.
- New/improved evidence availability confirming all or part of a woodland had a different land use at some point in the past and subsequently cannot be restored back to an ancient woodland ecosystem.
- Woodland being converted to other land uses.

Only 20% of the total revised ancient woodland across Oxfordshire is fully protected by nature conservation legislation (by being designated as a NNR, SAC, SSSI or LNR). A further 74% is covered by landscape designations (AONB and CTA), non-statutory designations (LWS, BBOWT and Earth Trust nature reserves), or in the public landholding (National Trust, Public National Forest, Woodland Trust) and is therefore managed to conserve biodiversity. About 6% of the total revised ancient woodland does not have any level of legal or planning policy protection. Some 90% of ancient woodlands are in private ownership.

This is discussed further in the following sections.



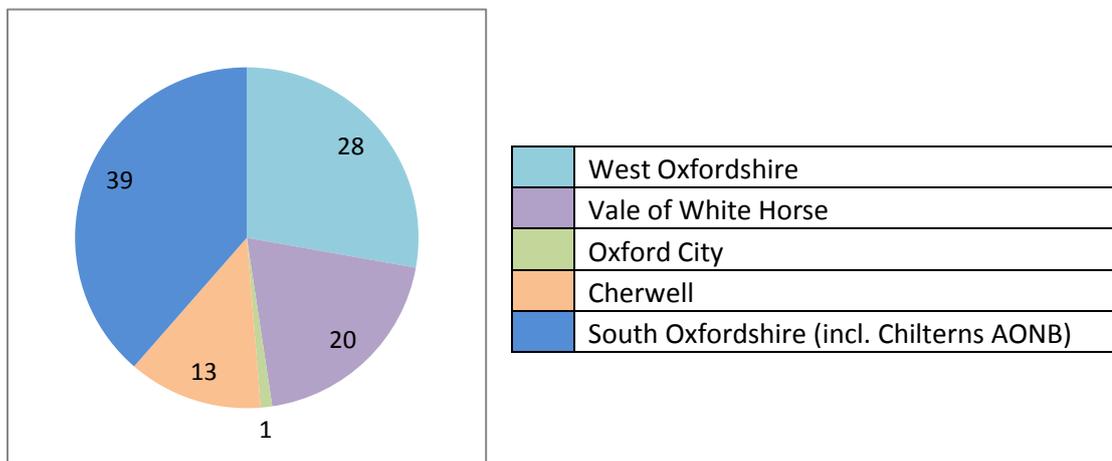
**Fig. 3.1 Oxfordshire woodland coverage:  
 Ancient woodland post-review in 2012/13 and all woodland (NFI, 2012)**



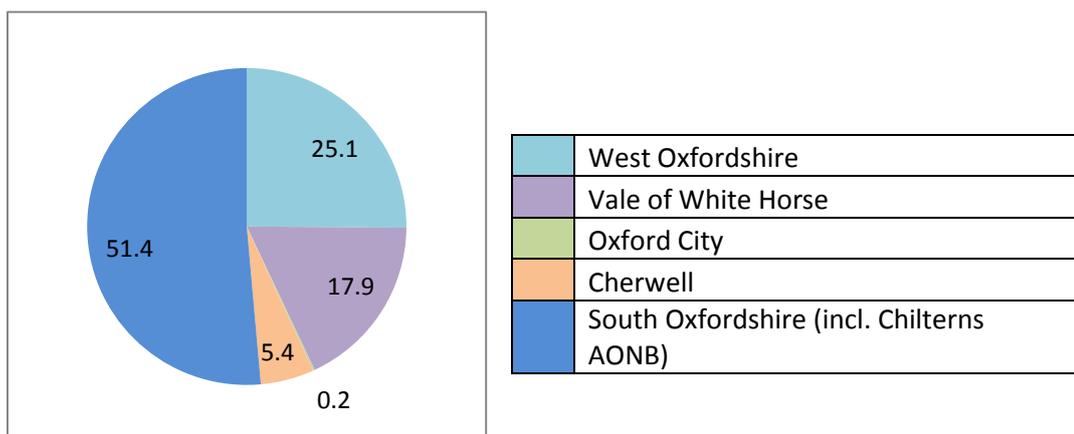
**Fig. 3.2 Oxfordshire ancient woodland coverage: Ancient woodland before and after review in 2012/13 and all woodland (NFI, 2012)**

**3.2 REVIEW OF ANCIENT WOODLAND BY DISTRICT**

Figure 3.3 illustrates the area of woodland within each District, shown as a percentage of the total area of woodland in Oxfordshire. Figure 3.4 illustrates the area of ancient woodland within each District, shown as a percentage of the total area of ancient woodland in Oxfordshire following the revision to the inventory. These figures show that most (39%) of the woodland cover in Oxfordshire is in South Oxfordshire and the least is in Oxford City (1%). The majority (over 50%) of Oxfordshire’s ancient woodland is also in South Oxfordshire. Each of the Vale of White Horse, Oxford City and West Oxfordshire Districts contribute similar proportions of both Oxfordshire’s total woodland and ancient woodland. In contrast Cherwell contributes 13% of Oxfordshire’s total woodland but only just over 5% of the ancient woodland.



**Fig. 3.3 Woodland contributions from each District to Oxfordshire’s total woodland**

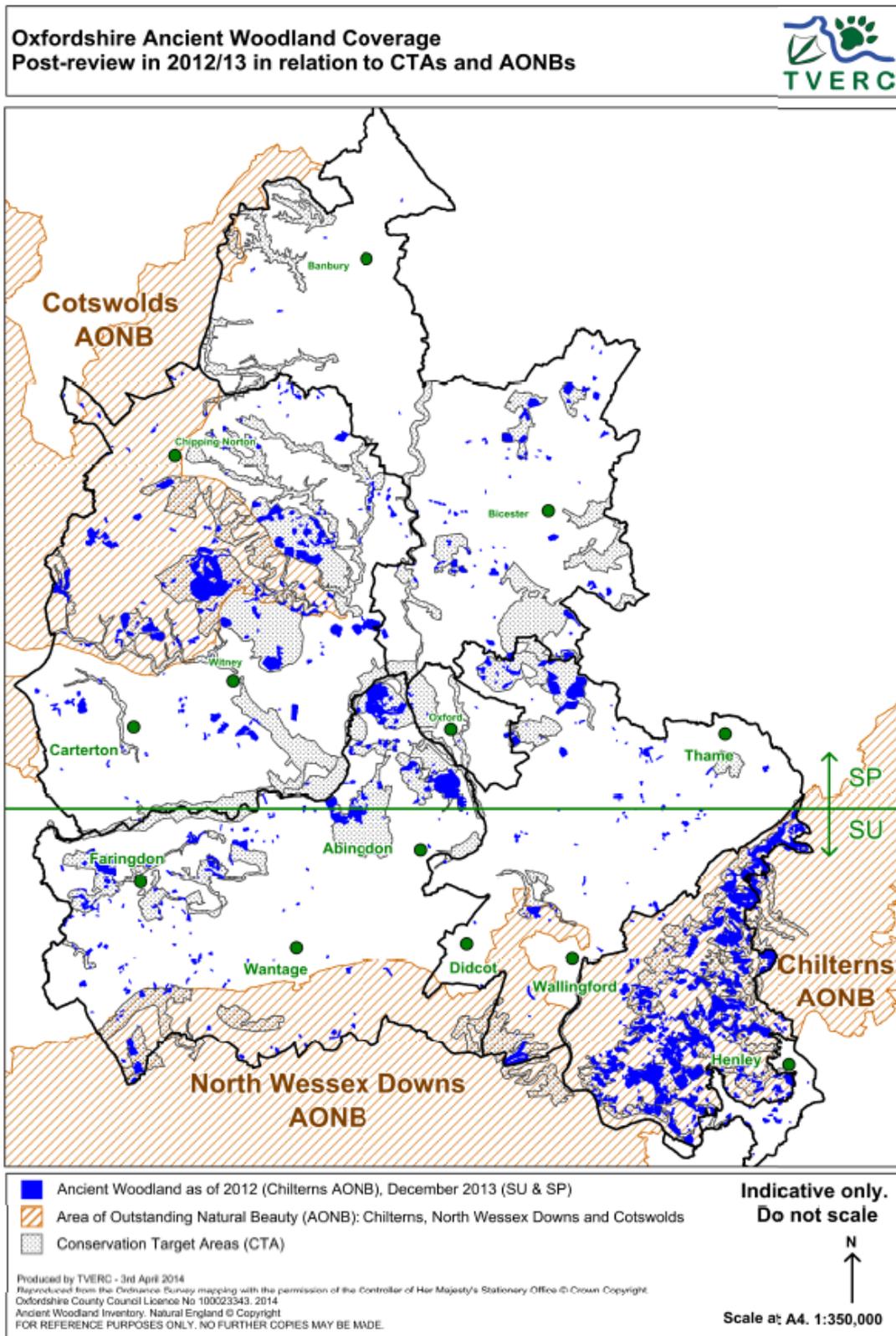


**Fig. 3.4 Ancient woodland contributions from each District to Oxfordshire’s total ancient woodland (following revision)**

### **3.3 REVIEW OF ANCIENT WOODLAND IN AONBS AND CTAS**

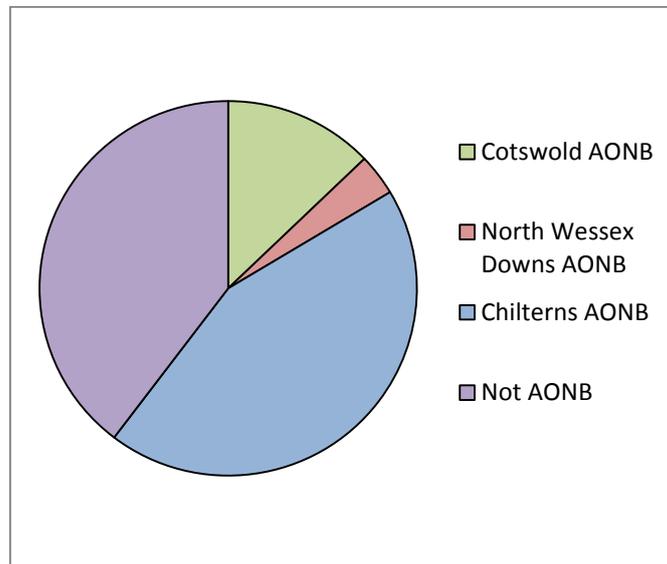
Figure 3.5 shows the distribution of ancient woodland (following the reviews in 2012 and 2013) in relation to the Areas of Outstanding Natural Beauty (AONB) and Conservation Target Areas (CTA) within the county. This map shows that the majority of the ancient woodland lies within an AONB and/or a CTA. Of the 8,919 ha (see Table 3.1) of ancient woodland within the county approximately (rounded to nearest 5%):

- 60% is within an AONB
- 75% is within a CTA
- 85% is in an AONB or CTA.



**Fig. 3.5 Oxfordshire Ancient Woodland coverage Post review 2012/13 in relation to CTAs and AONBs.**

Figure 3.6 shows how the ancient woodland is split across the three AONBs within the county; the majority (nearly half) is within Chilterns AONB.



**Fig. 3.6 Ancient woodland contributions in relation to the AONBs that at least partially occur within Oxfordshire (following revision)**

#### **3.4. REVIEW OF ANCIENT WOODLAND IN STATUTORY DESIGNATED NATURE CONSERVATION SITES**

Of the total revised ancient woodland across Oxfordshire approximately 20% is statutorily designated, i.e. is at least one of the following:

- National Nature Reserve (NNR)
- Special Area of Conservation (SAC)
- Special Site of Scientific Interest (SSSI)
- Local Nature Reserve (LNR).

Table 3.2 shows the percentage coverage of the total revised ancient woodland of each of the above statutory designated sites. It should be noted, since these designations overlap, that the total is over 20%.

<b>Designation</b>	<b>% of revised ancient woodland</b>
Special Site of Scientific Interest	20
National Nature Reserve	3
Special Area of Conservation	1
Local Nature Reserve	<0.5

**Table 3.2 Summary of revised ancient woodland across Oxfordshire covered by statutory designated sites**

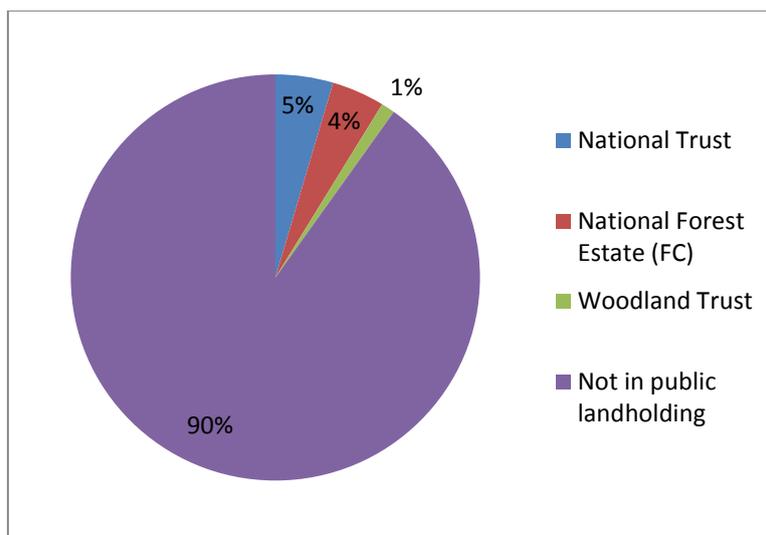
### **3.5 REVIEW OF ANCIENT WOODLAND IN NON-STATUTORY DESIGNATED NATURE CONSERVATION SITES**

Of the total revised ancient woodland across Oxfordshire about a quarter is designated as a Local Wildlife Site (LWS). Although not formally protected these sites are of material consideration in national and local planning policy. Approximately a further 1.5% of Oxfordshire’s revised ancient woodland is owned and/or managed by The Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) (only about 1 ha overlaps with LWS). About 0.5% is owned by the Earth Trust.

About 10% of the revised ancient woodland across Oxfordshire is within public landholdings that offer at least some protection of the habitat. The key landholdings are:

1. National Forest Estate (Forestry Commission)
2. National Trust
3. Woodland Trust

Of the woodland coverage held by these bodies, about 35% are designated as LWS and a further 20% with statutory protection (SSSI). Figure 3.7 illustrates the proportion of revised ancient woodland held by the key public bodies.



**Figure 3.7 Proportion of revised ancient woodland held by the key public bodies across Oxfordshire**

### **3.6 SUMMARY OF PROTECTION FOR ANCIENT WOODLAND**

Sections 3.3-3.5 show that only 20% of AWI in Oxfordshire is protected via statutory designations. This means that national and local planning policies are particularly important for protecting the remaining 80% of AWI in Oxfordshire from harmful development. As well as overall policies within the NPPF (Section 1.2), the following are particularly important planning policies in Oxfordshire that can help protect AWI:

- Local Wildlife Site designations: 25% AWI
- Conservation Target Areas: 75% AWI
- AONB: 60% AWI

Only around 6% of AWI is not covered by statutory or 'planning policy' designations. In terms of landownership and support for landowners, some 90% of ancient woodlands are in private ownership, which also highlights the importance of sensitive land management in maintaining the overall biodiversity value of ancient woodlands.

## **4. USE OF DATA AND LIMITATIONS**

### **4.1 DATA LIMITATIONS**

Solutions to limitations encountered in other revisions of the AWI in south-east England were included within the project scope. All projects using a methodology developed for nationwide applicability will inherently encounter local specific limitations and generic limitations. These need to be taken into consideration when using the outputs of this project. Further details about these limitations are included in the full report to Oxfordshire County Council, available from TVERC.

### **4.2 USE OF DATA IN PLANNING**

The planning process is an important mechanism for the protection and enhancement of ancient woodland. As detailed in Section 1.2 ancient woodland is protected from harmful development by several policies and pieces of legislation and is a material consideration in all planning decisions. This dataset will also help local authorities to fulfil their statutory duty to conserve biodiversity (NERC Act S40). The Ancient Woodland Inventory should, therefore, be used by strategic and spatial planners:

- 1) to help develop plans, policies and masterplans; and
- 2) as part of the evidence-base used by development control.

Ancient woodland is an irreplaceable habitat and cannot be recreated by the planting of new woodland or be successfully translocated as a result of the complex relationships which have developed over hundreds of years between soil microorganisms, ground flora and canopy species. Many of the rare and vulnerable species in ancient woodland rely on stable conditions, are slow to disperse and do not colonise new areas quickly. Therefore the only way to protect them from harmful development is to avoid negative impacts on them. Another effective way of protecting ancient woodland from harmful development is to buffer known sites with other semi-natural habitats, and ensure that development does not take place within these buffer zones.

Potential negative impacts include:

- Direct impacts, e.g.
  - destruction of an area of ancient woodland,
  - ground damage,
  - loss of under-storey,
  - soil or root disturbance,
  - changes to hydrology from drainage
  
- Indirect impacts, e.g.
  - fragmentation and loss of ecological connections with surrounding woodland/ veteran trees and the wider natural landscape,
  - reduction in the area of other semi-natural habitats adjoining ancient woodland,
  - increased exposure to pollutants from the surrounding area,
  - increased deposition of dust, particularly from quarries, resulting in physical and/or chemical effects,
  - impacts on local hydrology through drainage or water table levels changing
  - changes to light pollution at night (if development includes street lighting).

Natural England has produced Standing Advice on Ancient Woodlands<sup>1</sup> which should be followed, in addition to consulting the relevant local authority ecologist if any plans, policies or developments may impact on ancient woodland.

The outcome of the decision process to determine ancient status of woodlands is available on the *MAGIC* database held by Natural England. The full catalogue of decisions and evidence base is held by TVERC. This more comprehensive and complex database also includes decisions of woodlands that were subsequently removed from the AWI and those woodlands not considered to meet the ancient woodland criteria. The detailed survey data of the sites surveyed are also held by TVERC. Information from both these sources may be useful if the ancient status of a woodland is challenged. Although it is readily available from TVERC it is likely to need ancient woodland experience in interpreting it correctly and efficiently.

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<sup>1</sup> [http://www.naturalengland.org.uk/Images/ancient-woodland-standing-advice\\_tcm6-37627.pdf](http://www.naturalengland.org.uk/Images/ancient-woodland-standing-advice_tcm6-37627.pdf)

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## APPENDICES

### APPENDIX 1: ABBREVIATIONS USED IN THE REPORT

AONB	Area of Outstanding Natural Beauty
ASNW	Ancient Semi-Natural Woodland
AWI	Ancient Woodland Inventory
FC	Forestry Commission
FE	Forest Enterprise
NCA	National Character Area
NCC	Nature Conservancy Council
NE	Natural England
NFI	National Forest Inventory
NPPF	National Planning Framework
OCC	Oxfordshire County Council
OSD	Ordnance Surveyors' Drawing
PAWS	Planted Ancient Woodland Site
PRoW	Public Rights of Way
TVERC	Thames Valley Environmental Records Centre