

Appendix 4: State of the AONB Report - compiled Sept-Oct 2017

*Context, indicators and data summaries for the
Lincolnshire Wolds Area of Outstanding Natural Beauty.*

Further case studies pending.

produced by
Lincolnshire Wolds Countryside Service
(AONB Staffing Unit)



Introduction

Table 1 within the AONB Management Plan (2018-23) summarises the special landscape features that typify the Lincolnshire Wolds natural beauty and sense of place – these include attributes that relate to the area's landscape, farmland, geology, topography, biodiversity, archaeology, built heritage and culture. Appendix 3 provides an additional summary of the special qualities of each of the four Local Landscape Character Areas.

This supplementary report identifies and reviews a number of indices to help aid future condition monitoring for the AONB and the development of subsequent Management Plans. These proposed indicators are grouped in-line with the overriding themes of the Lincolnshire Wolds Management Plan (2018-23):

- Protecting the Wolds (Theme 1)
- Living and Working in the Wolds (Theme 2)
- Discovering the Wolds (Theme 3)
- Developing the Wolds (Theme 4)
- Partnerships in the Wolds (Theme 5).

Protecting the Wolds (Theme 1) – Landscape, Natural Heritage & Biodiversity

Landscape character – conservation and enhancement:

INDICATOR 1: To review the fixed point photographs established across the AONB as a proxy measure for monitoring changes to key viewpoints and local character.

Context: Additional to detailed landscape character assessments undertaken at each of the local administrative areas (ELDC, NELC, and WLDC) the original Lincolnshire Wolds Landscape Character Assessment identified four distinctive landscape character areas: The North-West Scarp, the Chalk Wolds, the Ridges and Valleys of the South-West and the South-East Claylands.

Status: Resources dependent, a detailed study and reassessment of fixed point photographs is recommended over the next plan period.

Visual Amenity:

INDICATOR 2: The investment and length of powerlines undergrounded since 2004 within the AONB.

Context: OFGEM (the Government Office of Gas and Electricity Markets) has a target of supporting the undergrounding up to 5% of powerlines across nationally protected landscapes (AONBs and National Parks) to enhance scenic quality. Two district network operators; Northern Powergrid and Western Power Distribution have linked up with the LWCS, local communities and landowners to assist in undergrounding schemes across the Wolds.

Results:

- As of April 2016, Northern Powergrid has removed over 13 kilometres of overhead line and associated infrastructure with an investment of over £1.7 million.
- As of April 2016, Western Power has removed nearly 12 kilometres of overhead line with an investment of over £1.2 million.

Review of undergrounding data:

Most of the schemes have focused on low voltage schemes within or close to settlements – a total of 15 villages/hamlets have benefitted directly from the projects, improving not only visual amenity but often power outage and consistency in future supply.

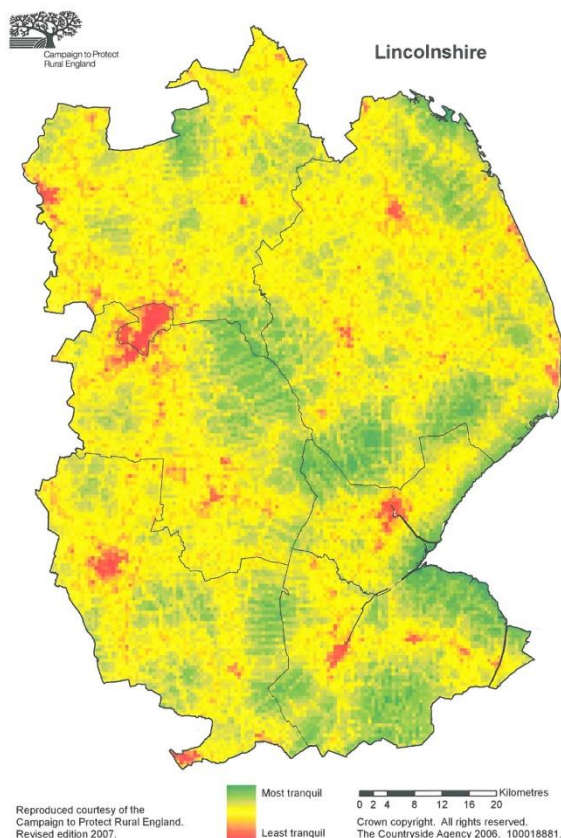
Tranquillity and Dark Night Skies:

Context: Tranquillity is stimulated by sight, sound and other senses either directly or as a trigger to memories. We aspire to it as it brings on or increases our feelings of peace and well-being with resulting positive effects on health and quality of life. It both benefits us as individuals and more widely society and the economy as a whole. In a densely populated country pressured by development and the pressures of modern living it is increasingly important to find the qualities of places which generate such tranquil feelings and to protect those locations and their attributes for the future (adapted from CPRE Tranquillity Mapping Report, 2008). The AONB family can make a major contribution in terms of safe guarding the tranquillity and sense of place that we find across some of our most special and often unique landscapes.

Revised national tranquillity maps were published by the CPRE in 2007 – the study did not seek to determine outright if an area is tranquil or non-tranquil by zoning but sought to provide continuous surface maps based on a combination of GIS mapping and Participatory Appraisal Consultation (PA). The integrated PA analysis reviewed peoples' perceptions, values and beliefs across a wide range of seeing and hearing attributes that would either contribute or detract from tranquillity (21 positive and 23 negative measures). The integration of the PA study applies modern thinking, recognising that as well as a resource, judgements on tranquillity are ultimately personal depending upon a complex set of factors.

INDICATOR 3: A visual tranquillity map of the Lincolnshire Wolds AONB:

Lincolnshire County Tranquillity Map (2007):

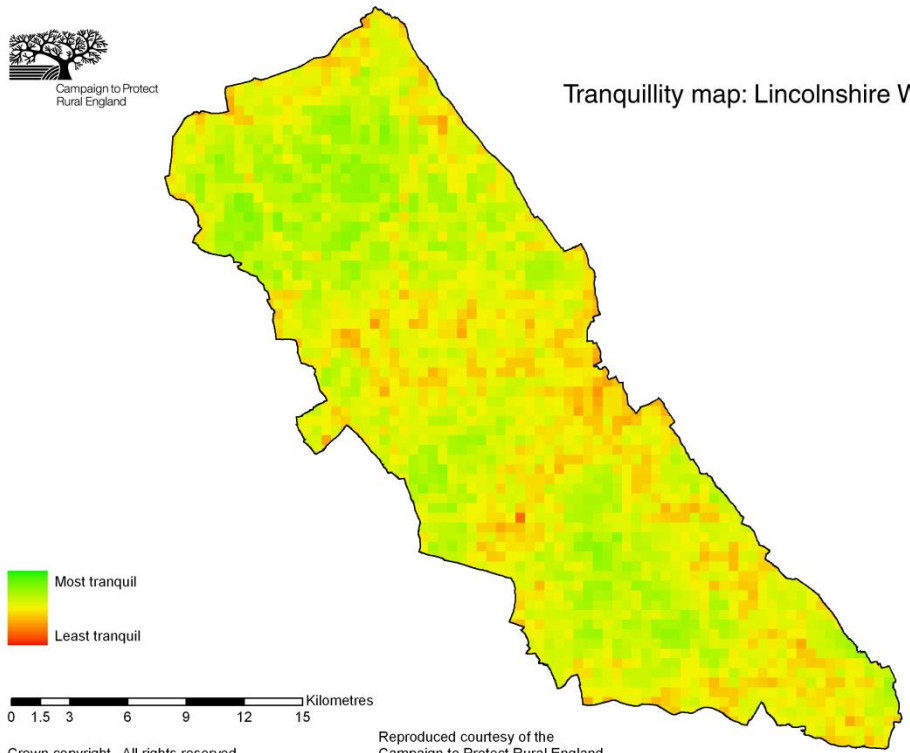


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Lincolnshire Wolds AONB Tranquillity Map (2007):



Tranquillity map: Lincolnshire Wolds



Most tranquil
Least tranquil

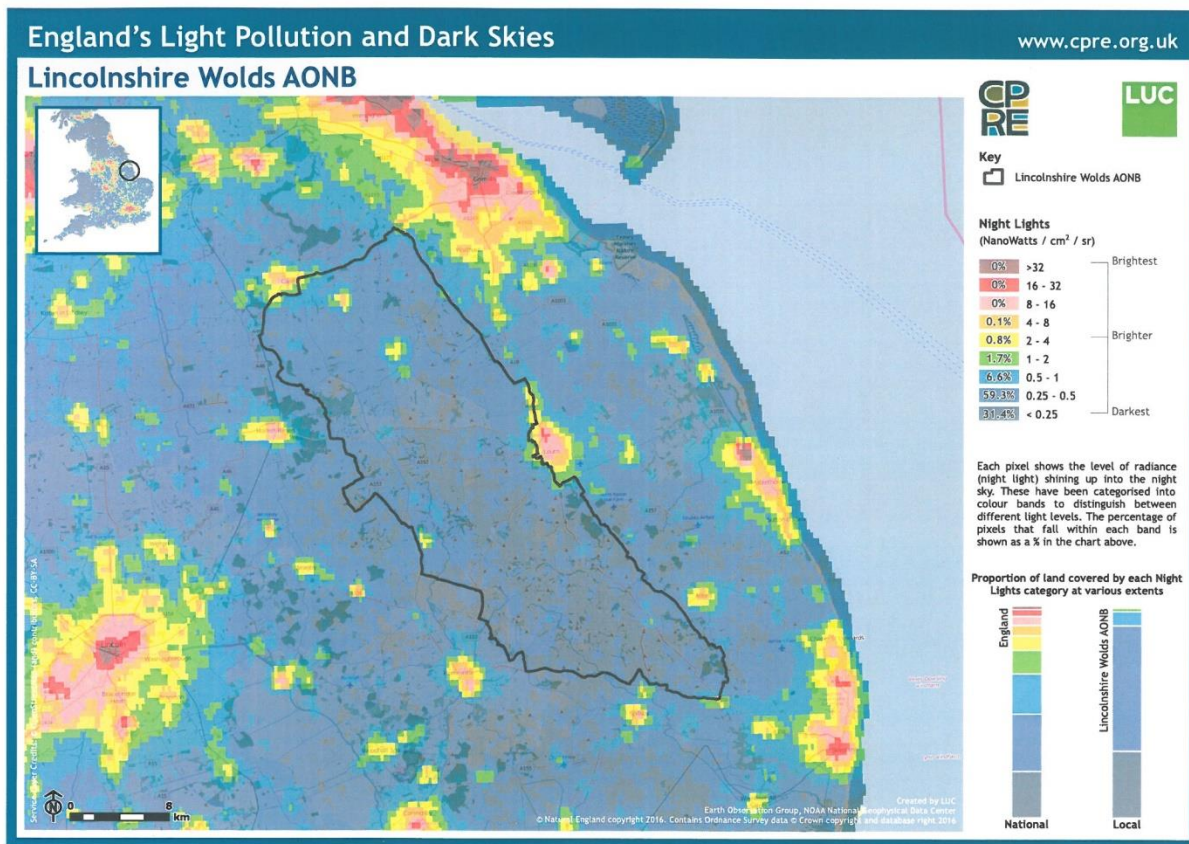
0 1.5 3 6 9 12 15 Kilometres

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Reproduced courtesy of the
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Revised edition 2007.

INDICATOR 4: A dark night skies map of the Lincolnshire Wolds AONB

Visibility at night has been integrated into the national tranquillity mapping work. This has applied the measure of "skyglow" which is defined as the brightness of the night sky as a function of distance from varying sizes of urban areas – applying the assumption that settlement size correlates directly to light pollution (the ability to see the stars at night).



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Review of tranquillity and night skies maps:

As highlighted, both maps indicate the importance of the Lincolnshire Wolds for retaining a high degree of both tranquillity and night sky visibility, with fairly minimal negative receptors. The influence of adjacent market towns, Cadwell Motor Circuit and the major roadways are clearly evident on the tranquillity map. There is also a mapping cluster suggesting a loss of tranquillity/increase in light intrusion in the area of Binbrook and Brookenby, largely on account of the industrial business park.

Natural Heritage:

Context: The value and importance of biodiversity has been reaffirmed at a global and UK levels with the continuing aims to halt the loss of habitat degradation and species loss and help mitigate and adapt to climate change pressures. The wildlife of the Lincolnshire Wolds has been heavily shaped by living and working practices through the generations and is a key element of the natural beauty of the AONB. As detailed in the main Plan, habitats of particular relevance to the Wolds include: 1) grassland – meadow, pasture and wet grassland; 2) grass verges and green lanes; 3) woodlands, beech clumps and traditional orchards; 4) hedgerows and landmark trees; 5) rivers, streams and ponds; 6) arable farmland.

INDICATOR 5: UK BAP Species present within the Lincolnshire Wolds AONB:

165 species listed from records, of which 51 were recorded post 2014.

INDICATOR 6. Red List Species present within the Lincolnshire Wolds AONB:

244 species listed from records, of which 33 were recorded post 2014.

INDICATOR 7. Lincolnshire BAP Species present within the Lincolnshire Wolds AONB:

41 species listed, of which 33 were recorded post 2014.

Source: Indicator 1 – 3: Lincolnshire Greater Lincolnshire Nature Partnership Records Centre

INDICATOR 8. Condition of SSSIs within the Lincolnshire Wolds AONB:

Context: Sites of Special Scientific Interest are nationally protected areas which provide a representative sample of some of the best wildlife and geologically important sites in England. Most SSSIs are in private ownership and their management is a shared responsibility with Natural England, the body responsible for their designation and subsequent condition monitoring.

As directed through 'Biodiversity 2020', Natural England has a target to ensure that at least 50% of SSSIs are in favourable condition and at least 95% are in favourable or recovering condition by 2020.

The Lincolnshire Wolds AONB has a total of 14 SSSIs designated on account of their wildlife interest with many located on the steeper slopes of the Wolds, or within the valley bottoms. The sites include nine SSSIs of alkaline-acidic grassland/marshland, four SSSIs of ancient and semi-natural woodland and one nationally important bat colony, protected on account of both the number and the range of species present.

Results:

Lincolnshire Wolds AONB - SSSI Condition (figures = area in hectares)	2004	2008	2010	2012	2014	2016
Favourable Condition	57	43	45	53	52	52
Unfavourable, Recovering	13	37	41	41	45	45
Unfavourable, No Change	30	13	10	10	5	5
Unfavourable, Declining	4	11	8	0	2	2
Total	104	104	104	104	104	104

Source: Natural England (April 2017)

Lincolnshire Wolds AONB SSSI Detailed Categories (figures = area in hectares)	Acid Grassland	Broadleaved woodland	Built up areas/ gardens	Calcareous Grassland (lowland)	Neutral Grassland (lowland)	Earth Heritage
2017						
Favourable Condition		29.5	3.8	4.4		14.1
Unfavourable, Recovering	2.4	14.1		13.3	14.9	
Unfavourable, No Change		5.4				
Unfavourable, Declining				2		
2014						
Favourable Condition	2.54	29.6	3.8	4.5	15	14.1
Unfavourable,		14.2				

Recovering						
Unfavourable, No Change		5.4				
Unfavourable, Declining				2		

Source: Natural England (April 2017)

Review of biodiversity data: The Lincolnshire Wolds SSSIs comprise a total of 104 hectares of land, with some 14.1 hectares designated on account of the earth heritage interests (see below). Including the latter, 92.8% of the total SSSI resource is currently deemed to be either in a favourable or recovering condition, with some 5% classed as unfavourable no change (within the woodland component), with just 2% unfavourable and declining (calcareous grassland). In terms of timeline changes there has been a slight reduction in the favourable condition of SSSIs over the past ten years, but a significant increase in the total hectares classed as unfavourable but recovering. Two SSSI sites, which include part of Swaby Valley and Skendleby Psalter Banks, have been declining largely on account of reduced grazing and the subsequent encroachment from dominant grasses and scrub.

Woodland Resource and Management

Context: The woodland cover of the Wolds is low (< 5.5% coverage) but remains a vital habitat and landscape component, and an important source of local timber. Additional to the wildlife benefits, especially of mixed and deciduous woods, these habitats aid water management and soil protection through reducing runoff, make a major contribution to green infrastructure connectivity and provide further opportunities for access and recreation. Many woodlands remain in active management on account of their use for supporting the rearing of game birds.

The mosaic of differing habitats within any given woodland can help to maximise plant and animal diversity, including for example woodland springs, streams, glades, rides and field edge layers. Agri-forestry grant enhancements and forestry/woodland plans commonly aim to enhance biodiversity and timber productivity, supporting species of local provenance and seeking to minimise the risks from future pests and diseases.

Extent and type of woodland cover:

Lincolnshire Wolds AONB	2014 (hectares)	2015 (hectares)
Total area of woodland	3,058	3,060
Broadleaved	2,478	2,478
Conifer	300	300
Mixed	80	80
Felled	4	4
Ground prepared for planting	46	27
Shrub land	1	1
Young trees	169	171

Source: National Forestry Inventory – Forestry Commission.

INDICATOR 9: Area of ancient and semi-natural woodland the AONB.

This measure is based upon Natural England's Ancient Woodland Data which seeks to establish the area of woodland recorded as ancient and semi-natural woodland (ASNW) and the area of plantations on ancient woodland sites (PAWS).

Lincolnshire Wolds AONB – Ancient Woodland	2017 (hectares)
Ancient and semi-natural woodland (ASNW)	233
Plantations on ancient woodland sites (PAWS).	1,392
Total area of ancient woodland	604

INDICATOR 10: Area of the AONB's woodland in positive management

Lincolnshire Wolds AONB	2014 (hectares)	2015 (hectares)
Actively managed woodland	1,723	1,741
Unmanaged woodland	1,392	1,394
% of woodland managed	55%	56%

INDICATOR 11: Uptake of Woodland Managed and Created Under Environmental Stewardship (ES).

As of March 2017, 18 woodland agreements were in place across the Lincolnshire Wolds through the ES programme, aiding management of some 235 hectares of woodland/woodland edge resource.

Woodland Managed and Created Under Environmental Stewardship (ES)	2017 (hectares)
Management of Woodland Edge – EC4 Option	1.98
Creation of Woodland Outside the SDA & ML – HC10 Option	5.23
Management of Woodland Edges – HC4 Option	0
Maintenance of Woodland Edges – HC7 Option	225.47
Restoration of Woodland – HC8 Option	2.11
Creation of Woodland in the SDA – HC9 Option	0
Management of Wood Edges – OC4 Option	0
Management of Woodland Edges – OHC4 Option	0
Total	234.79

Review of woodland data:

Many of the Wolds woodlands are small and fragmented and are often found on the steeper slopes of the escarpments or coombes, or in the wetter valley bottoms where cultivation is difficult. Some 80% of the woodland resource is broad-leaved, approximately 20% of which is ancient, semi-natural woodland. There are also a significant proportion of plantation woodlands, many are broad-leaved and also used for shelter belts and game cover. The results show that the current uptake for new woodland creation is low, but just over half of the woodlands are actively managed.

Grassland Resource and Management

Context: Although much of the Wolds is currently under cultivation, grassland habitats remain an important landscape and wildlife resource, comprising a wide range of semi-natural to permanent pastures. The composition of the grassland swards are variable, typically ranging from calcareous chalk grassland to neutral grassland depending on local soils and geology, with very small pockets of acidic grassland also present.

INDICATOR 12: Uptake of Low input Grassland, Managed, Restored or Created Under Environmental Stewardship (ES)

Low input Grassland, Managed, Restored or Created Under Environmental Stewardship (ES)	2017 (hectares)
Permanent Grassland with Low Inputs – EK2 Option	281.67
Permanent Grassland with Very Low Inputs outside SDA & ML – EK3 Option	438.47
Reversion to Unfertilised Grassland to Prevent Erosion/Runoff – HJ3 Option	186.68
Reversion to Low Input Grassland to Prevent Erosion/Runoff – HJ4 Option	4.93
Permanent Grassland with Low Inputs – Hk2 Option	5.41
Permanent Grassland with Very Low Inputs – HK3 Option	104.87
Maintenance of Species-Rich, Semi-Natural Grassland – HK6 Option	306.53
Restoration of Species-Rich, Semi-Natural Grassland – HK7 Option	501.39
Permanent grassland with low inputs; outside SDA & ML (organic) – OK2 Option	1.38
Permanent grassland with very low inputs; outside SDA & ML (organic) – OK3 Option	51.89

Review of grassland data: Many of the Wolds' grasslands and rough pastures are found on steep slopes (where the soils are thin and the ground hard to till), in the valley bottoms as wet flushes and pastures, and in abandoned quarries and pits. Maintenance and restoration of species rich grassland remains important and currently includes some 800 hectares; a further 700 hectares of permanent grassland is managed with low or very low inputs and is also a significant resource for wider wildlife and landscape benefits.

INDICATOR 13: Number, length and condition of Protected Roadside Nature Reserves and roadside Local Wildlife Sites.

Context: Grassed roadside verges and the wider network of green lanes are a distinctive landscape feature of the Lincolnshire Wolds, with many found alongside ancient drovers trackways.

Results: There are currently 17 Protected Roadside Nature Reserves in the Lincolnshire Wolds AONB, totalling over 16 kilometres in length. Over 55 roadside verges and green lanes are currently classified as Local Wildlife Sites.

Review of grass verge data: The Life on the Verge partnership project with the Lincolnshire Wildlife Trust aided the wider mapping of the verge network through training and supporting voluntary recording across the Lincolnshire Wolds. This two year project acted as a drive for improved maintenance of verge ways and the opportunities for utilising cuttings for bio-energy ([Peakhill Associates](#)).

Water Quality in Rivers

Context: Under the European Water Framework Directive the ecological status of rivers and canals is classified as High, Good, Moderate, Poor and Bad. All main river (116.25 kilometres) within the Lincolnshire Wolds AONB forms part of the areas internationally important chalk stream resource and is fed from nine principal catchment systems within the area, namely from north to south; Nettleton Beck, Waithe Beck, River Rase, River Lud, River Bain, Long Eau, Great Eau, River Waring and the River Lymn. The upper catchments comprise an important network of minor streams (a further 141 kilometres across the AONB), calcareous marshes and spring-line flushes and ponds providing further ecological and wider benefits.

INDICATOR 14: The length of river in moderate or good ecological condition.

In April 2015:

- 22.48 kilometres (19.3%) of main river was classified as being in good ecological condition.
- 86.36 kilometres (74.3%) of main river was classified as being in moderate ecological condition.
- 7.41 kilometres (6.4%) of main river was classified as being in bad ecological condition.

In April 2016:

- 14.89 kilometres (12.83%) of main river was classified as being in good ecological condition.

- 74.39 kilometres (64.13%) of main river was classified as being in moderate ecological condition.
- 26.97 kilometres (23.25%) of main river was classified as being in poor ecological condition.

Review of river quality data: Over 76% of the rivers in the AONB are deemed to be in moderate to good ecological condition. However there are still notable stretches in poor condition; it is believed that both sedimentation and agri-chemical runoff are major factors on local water quality, exacerbated by the relatively large areas of the Wolds that are actively cultivated (>75% of land area cropped).

INDICATOR 15: The length of Lincolnshire Chalk Streams and their adjacent habitat restored through active management.

Context: The Lincolnshire Chalk Streams Project (LCSP) is a group of organisations that have actively worked together since 2003 to conserve and enhance this Biodiversity Action Plan (BAP) priority habitat. Since 2006 staff and volunteers have been employed to undertake work on behalf of the partnership, both monitoring riparian species and planning and organising a wide range of restoration.

Results:

Since 2004 over 12 kilometres of chalk stream has been restored through in-stream and or bankside restoration, with further management enhancements to over 45 kilometres of adjacent habitat.

CASE STUDY – RIVERFLY MONITORING PROJECT

The LCSP partnership has established and coordinated a programme of detailed riverfly monitoring, training up 46 volunteers in total to assist in surveying a number of sites across the project area. A total of 13 sites have been established across the AONB, with a further 16 locations downstream from the chalk stream headwaters.

See page 135.

Land in Environmental Management

Context: Natural England (NE) is a key partner in the AONB Partnership (Lincolnshire Wolds AONB) and a member of the Department for the Environment Farming and Rural Affairs family (Defra). NE administers agri-environment schemes which provide funding to farmers and land managers for undertaking a wide range of environmental enhancements. In 2005 the Countryside Stewardship Scheme (CSS) was replaced by the Environmental Stewardship Scheme providing both Entry Level and Higher Level agreements. Further modifications have been undertaken with the national roll-out of the new Countryside Stewardship Scheme in the period from 2014. The impacts of the new changes will take a number of years to evaluate as the current live schemes are at various phases of their five or ten year cycles - depending on the date of any individual agreements.

INDICATOR 16: Number and area of land in formal stewardship agreements.

Lincolnshire Wolds AONB	Area (hectares)	Number of agreements	Cost
AONB GIS area	55,898	-	-
Area of AONB under ES	31,990 (57%)	-	-
Total UAA (Utilisable Agricultural Area)	48,985	-	-
Proportion of UAA under stewardship	65%	-	-
Entry Level plus Higher Level Stewardship	20,149	78	£1,546,870
Entry Level Stewardship	7,950	52	£192,236
Higher Level Stewardship	3	2	£1,145
Organic Entry Level + Stewardship	3,486	3	£403,236
Organic Entry Level Stewardship	403	1	£24,131
Total Stewardship	31,990	136	£2,167,618*

Note: The total investment for Environmental Stewardship across the AONB = £1.96 million in 2011 (including £1.26 million for those Entry Level Stewardship schemes with additional HLS options. Source: Natural England (March 2017)

INDICATOR 17: Environmental Stewardship (ES Options) number and area

There are six theme groups of ES options that contribute to conserving and enhancing landscape character – more specifically measures to help enhance the management and protection of archaeological features. These serve as a proxy measure for landscape quality and natural beauty.

Lincolnshire Wolds AONB ES Options Uptake	May 2017
Options measured in hectares	6,336.2
Number of parcels	2176
Options measured in metres	38,539
Number of parcels	96
Number of trees	234
Number of parcels	28

Source: Natural England (March 2017)

Review of Environmental Stewardship Data: As indicated, there is currently in excess of £2 million investment supporting over 135 stewardship schemes across the Lincolnshire Wolds, with over 57% of the AONB in a scheme. In more recent years a number of incentives have been especially important in protecting both wildlife and heritage interests through for example encouraging grassland restoration and minimising cropping in or immediately adjacent to Scheduled Monuments.

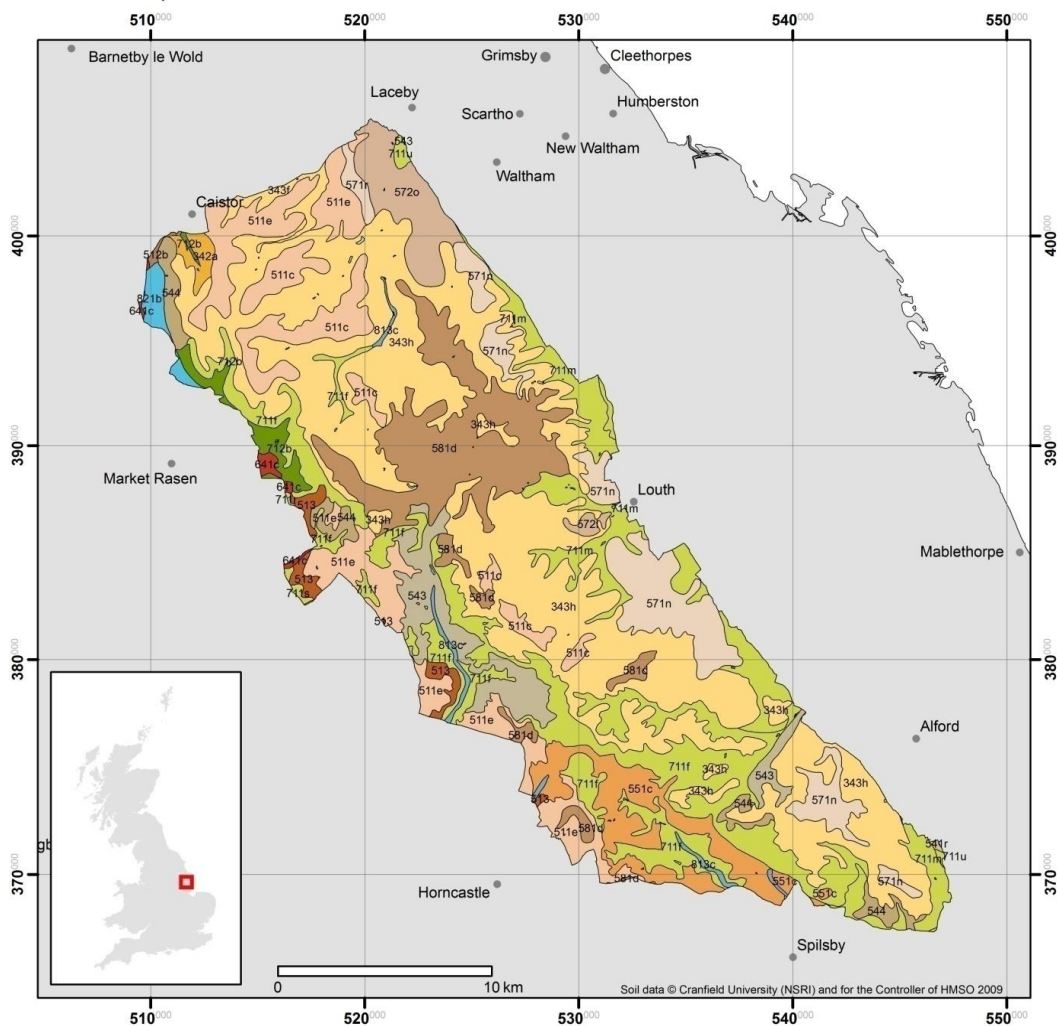
With the current uncertainties in the future agri-environment measures we are envisaging a likely downward trend as there is anecdotal evidence emerging that some landowners are currently holding off renewing their schemes due in-part to uncertainties stemming from Brexit.

INDICATOR 18: Area of the Lincolnshire Wolds retaining good soil structure and nutrient content for sustainable productive farming (or the area of the Lincolnshire Wolds providing high grade agricultural land).

Context: Over 20 soil types have been identified across the AONB, including light chalky soils on the plateau tops interspersed with heavy glacial drift deposits, impermeable clays in the valley bottoms and the lighter sandy and wind-blown loams often found to the south and west. Many of the more unworkable soils and nutrient poor ground has not been cropped and has been widely used for pasture and woodland – e.g. the valley bottoms, steeper valleys and the Wolds escarpments.

Review of Soil Data: The Lincolnshire Wolds Soil Report (Cranfield University, 2009) provides some more detailed soil maps for the AONB, including thematic mapping for leachate and soil erosion vulnerabilities. See below map for the spatial distribution of soils across the area. (*Further information available on request at www.lincswolds.org.uk*)

Soils - Spatial Distribution



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Earth Heritage

Context: The Lincolnshire Wolds AONB has a complex geology and topography. Chalk from the Cretaceous period (140 million - 65 million years old) forms the dominant bedrock, however the bedding dips gently eastwards, which often exposes the underlying Lower Cretaceous and Upper Jurassic beds in the western and southern areas of the Wolds (e.g. bands of Tealby Ironstones and Limestones, Spilsby Sandstone and Kimmeridge Clay). The geology and topography is further complicated by the extensive glaciation and periglacial modification which helped to create the areas distinctive pattern of rolling plateaus, deeply incised valley systems (coombes) and its glacial tills and gravel deposits.

INDICATOR 19: Condition of registered SSSI geological sites

Natural England has commenced recording and monitoring of important geological features, collating both the number and condition of geological SSSIs across the protected landscapes family. This information is commonly, but not always, indicative of prominent visible geological features or other earth heritage elements that may be striking or memorable. Exceptions can include hidden/underground features including in the Lincolnshire Wolds case glacial/periglacial deposits.

Recent data for the Lincolnshire Wolds AONB SSSI Level 2 Geological Features records 6 sites all in favourable condition, and classed as: Disused quarries – 4 sites; Cuttings – 2 sites.

Source: Natural England (April 2017)

INDICATOR 20: % of Local Geological Sites (LGS) and Regionally Important Geological and Geomorphological Sites (RIGS) that are in favourable condition.

Context: In Lincolnshire RIGS are being re-assessed under new Local Geological Site criteria to evaluate their interest, condition and future management on a site by site basis. This work links with the Greater Lincolnshire Geodiversity Strategy 2017-21 and the GLNP's Geodiversity Group aspirations, which are striving to ensure that all of the county's geodiversity assets can be conserved, recorded, promoted, understood and enjoyed by all.

In the Lincolnshire Wolds there are 15 geodiversity sites which have been notified as LGS's and a further six sites which are currently still classed as RIGS.

Review of geodiversity data: A large number of these sites occur as redundant pits and quarries where there are typically exposures that have been created by mineral extraction, often as chalk pits or for local building stone. As indicated, the re-classification of RIGS as LGS's is a good proxy measure for the general condition of the sites as all of the notified LGS's will have undergone a recent survey and review process.

Protecting the Wolds (Theme 1) – Archaeology and Built Heritage

Context: The Lincolnshire Wolds AONB is a rich archaeological resource with a wealth of historic landscape features including a high concentration of long and round barrows, ancient trackways and one of the highest densities of deserted and shrunken medieval villages (DMVs & SMVs) in the country. The area also has a number of distinctive farmsteads, county houses, and hamlets and nucleated villages, with a number of prominent churches. There is no one unified style of buildings across the Wolds – many reflect the local building materials of the day, including local stone, brick, and often wide spread use of slate and pantiles.

INDICATOR 21: Condition of heritage assets deemed to be 'At Risk'.

30 heritage sites within the AONB were deemed to be at risk in 2017, including over 27% of Scheduled Monuments (SMs).

Historic England Statutory Sites

Lincolnshire Wolds AONB	March 2017	At Risk	% of category at Risk
Scheduled Monuments	98	27	27.6
Listed buildings			
Grade I	14		
Grade II*	34	2	5.9
Grade II	277		
Total listed buildings	325		
Registered Parks and Gardens			
Grade II	3		
Registered Battlefields	1		
Places of Worship			
Grade II	-	1	-

Source: Historic England

Review of Scheduled Monument data: The proportion of Scheduled Monuments (SMs) classed at risk is high (over ¼), although an improvement on the situation in 2004 when over 49% of SMs in the AONB were deemed to be at risk. The situation for the stock of Listed Buildings found across the Wolds is considerably more positive with less than 1% considered to be at risk. In terms of heritage buildings Historic England has deemed to be at risk, due to their deteriorating condition, are the Church of St Andrew (Utterby) and Church of St Helen, Biscathorpe, along with the Conservation Areas of Binbrook and South Thoresby (on the boundary of the AONB).

A large number of SMs comprise ancient Neolithic long barrows and bowl barrows, typically located on prominent ridges and plateau tops – they often occur within or juxtapose areas of cultivated ground where arable ploughing and clipping can cause significant problems. In some cases however localised disturbance of SM's has been the result of animal burrowing and tree/shrub growth. The current Long Barrows project, commissioned by Historic England, and being undertaken by Heritage Trust for Lincolnshire, is ongoing and seeks to review and inform our future understanding of these sites. The final results from this two year study will help inform and aid the further management of these nationally important sites.

INDICATOR 22: The number of Traditional Roadsigns in Lincolnshire (TRiL) within the AONB in good condition.

Context: Since 2003 the TRiL partnership group was established to survey, monitor and aid the repair of the very distinctive black and white roadsigns, which are a combination of concrete post, wooden finger signs and cast iron lettering. The LWCS has linked up with the County Council Highway's team and local volunteers.

As of September 2017, there are 89 TRiL signs in the AONB – the LWCS estimates that 95% of signs are currently in good condition.

Review of TRiL data: A minor maintenance programme is commissioned annually, clearly targeting those signs in most need of repair. There are also occasional requests from local parish councils or residents to install replacement signs – there is a protocol for assessing these requests, including the need for supporting evidence. Such requests are reviewed on a case-by-case basis.

INDICATOR 23: The number of AONB traditional farmsteads deemed to have high heritage potential.

Context: Traditional farmsteads and their outlier farm buildings are an important heritage resource found across the Lincolnshire Wolds AONB, and are integral to the landscape and cultural character of the area.

The Lincolnshire Wolds AONB Partnership commissioned Locus Consulting to undertake a research project to provide guidance to support the future sustainable development and conservation of the historic farming landscapes of the Lincolnshire Wolds. The study builds on the Greater Lincolnshire Farmstead Guidance for Lincolnshire, North Lincolnshire and North-East Lincolnshire published in 2015 which included:

- A Farmstead Assessment Framework
- Greater Lincolnshire Farmsteads Character Statements.

Data: The 2017 study recorded a total number of 586 traditional farmsteads within the Lincolnshire Wolds AONB. 45 (8%) of these include a statutory listed (protected) farmhouse or working building. Of the farm buildings listed 78% were classed 18th Century farmsteads, 22% were classed as 19th Century farmsteads.

Locus Consulting's 2017 report classed nearly half (48%) of all of the identified farmsteads as having heritage potential on account of retaining close to 50% of their historic buildings within today's landscape. See below table:

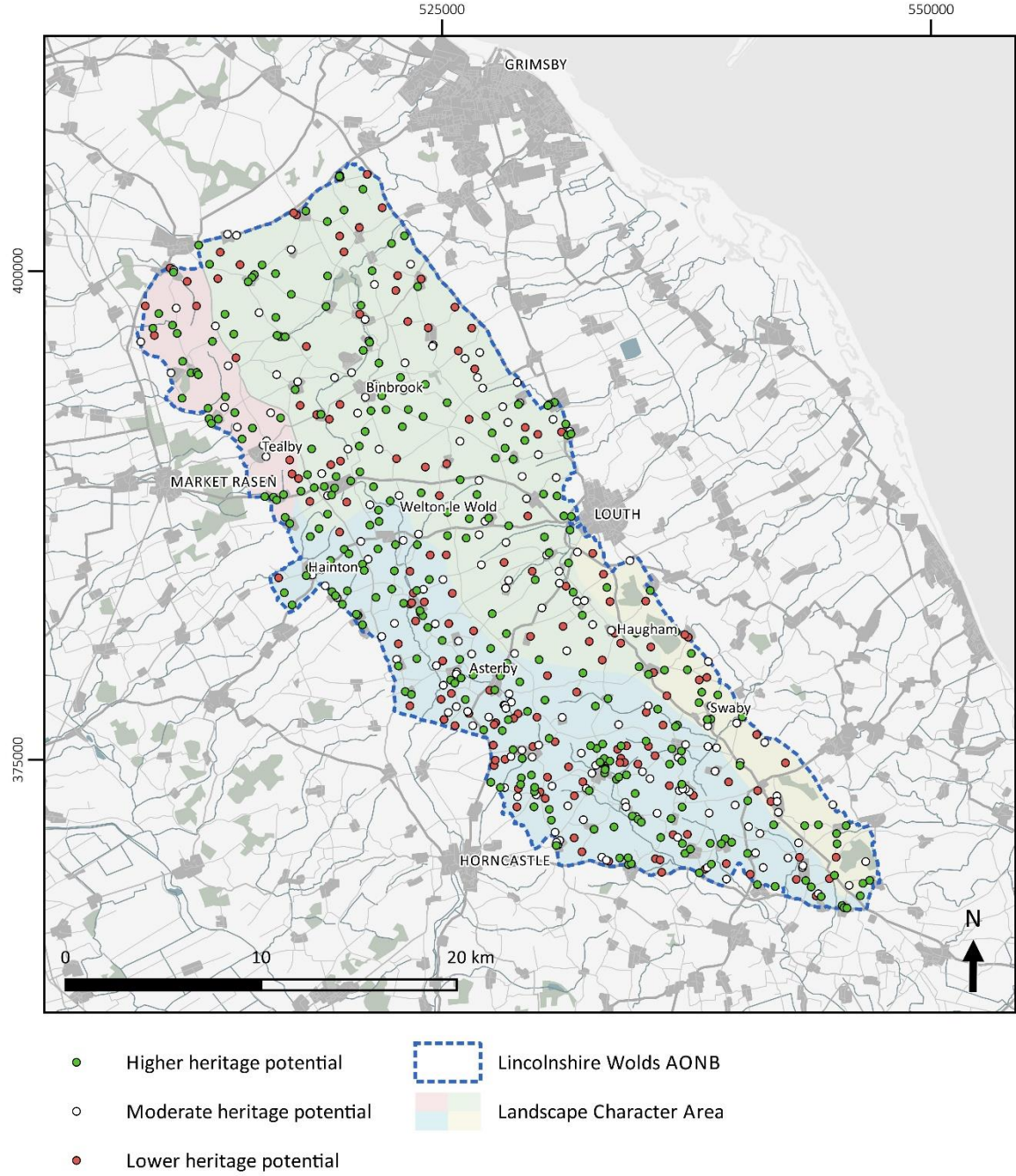
Levels of Survival of Traditional Farmsteads:	Number in the AONB	% in the AONB	% in Greater Lincolnshire
Extant - no apparent alterations	63	11%	10%
Partial loss - less than 50%	203	37%	33%
Significant loss - more than 50% change	139	25%	19%
Farmhouse only survives	24	4%	9%
Total Loss or demolition of traditional buildings and plan	120	21%	29%

Source: Locus Consulting

Review of Traditional Farmstead Data: The more recent survey has indicated that the total number of known farmstead out outbuildings is larger than first envisaged (2013-18 AONB M. Plan recognises 300+).

Current figures show that although many of the most important farmsteads and workshops are protected through listing, there is a small proportion of buildings which are currently not listed but have future heritage potential through sensitive restoration and enhancement.

Below map produced by Locus Consulting showing the "Heritage Potential" of the Lincolnshire Wolds AONB Farmstead Resource.



Living and Working in the Wolds (Theme 2)

Population patterns and distribution:

Context: The Lincolnshire Wolds AONB is sparsely populated with a deeply rural fabric, traditionally heavily dependent upon the farming and defence sectors, although the latter's influence diminished with the closure of RAF Binbrook (Brookenby). The infrastructure across the AONB is dispersed and although there is a reasonable network of A and B roads public transport remains fairly limited. The AONB's links with its surrounding market towns remain important for the provision of retail, health, secondary school/college education, financial and other administrative services. Like many rural areas in the UK both mobile phone and IT service provision across the AONB is variable, with some notable areas of poor coverage.

Due to administrative and ward boundaries not always following the boundary of the AONB designation we must rely on census figures as an estimate for providing a range of socio-economic data for the area.

INDICATOR 24: Population patterns in the AONB and adjacent market towns.

Using the 2011 census the LWCS estimates that the population of the AONB at this time was 10,701, with a further 36,316 people living in the surrounding market towns of Alford, Caistor, Horncastle, Louth, Market Rasen and Spilsby. There are 89 settlements within the Lincolnshire Wolds AONB, and a further 49 settlements (including the market towns) within a wider five kilometre envelope.

INDICATOR 25: Age distribution in the Lincolnshire Wolds

In 2011 in the AONB:

- 19% of the population were <19 years old
- 21% were aged 20-44
- 26% were aged 45-59
- 25% were aged 60-74
- 9% were over 75 years old.

Review of population data: As indicated, the population within the Lincolnshire Wolds AONB is comparatively sparse, typically on average less than 20 inhabitants per km². There are 74 parishes but only five parishes have more than four hundred and fifty residents; Binbrook (892), Brookenby (665), Tealby-Walesby (551), Teford-Salmonby (464) and Ludford (460). There is also however a significant population (over 36,000) distributed across the six market towns that surround the Wolds, providing integral people and service links. The current age distribution for the AONB population is fairly even across the age categories; across Lincolnshire as a whole there has been a pattern of an aging population with an influx of those of middle-age or retirees, set against a trend of an outward movement of young adults, often pursuing further education and career opportunities in other areas of the UK.

Employment and economic performance:

INDICATOR 26: Number of rateable businesses located in the AONB

In 2017 there were 375 rateable businesses in the AONB. In terms of categories the ten highest listings were as follows:

- 70 workshops, factories and premises
- 54 warehouses/stores or land used for storage
- 52 guest houses, hotels, hostels or self-catering units
- 27 communication stations/premises
- 21 shops or showrooms
- 20 public houses
- 14 offices
- 12 equestrian or racing facilities
- 11 village or community halls
- 10 café, tea room or kitchens.

Review of rateable business data: The above groupings are an estimate from the LWCS based on local authority datasets and provides a useful proxy measure on the number and location of businesses that have a rateable value. Figures are not readily comparable with previous records as the criteria for the collection of business rates has recently changed. The actual number of enterprises based in the AONB will be higher as some micro-business activity will be exempt from business rates. The rankings indicate the importance of smaller workshop and warehouse facilities which are often located within rural farm buildings, or village settlements with a significant cluster at the Brookenby Industrial Park.

INDICATOR 27: Employment levels in the Lincolnshire Wolds – 4,890 people from the total census are in employment.

In 2011 the in-work distribution by occupation in the AONB estimated from census figures is as follows:

- 17% Professional
- 17% Skilled trades
- 15% Managers, Directors and Senior Officials
- 11% Elementary
- 10% Assoc. Professional and Technical
- 9% Caring, Leisure and other Services
- 9% Administration and Secretarial
- 7% Process Plant and machine Operatives
- 5% Sales and Customer Service.

In 2011 the not-in-work number in the AONB estimated from census figures is 5,811 people, distributed as follows:

- 70% Other - unpaid carers, students, parental etc (3,345 people)
- 23% Retired (1,886 people)
- 4% Long term sick or disabled (322 people)
- 3% Unemployed (258 people)

Review of general employment data: The current UK unemployment rate is 4.3% (UK Office for National Statistics, Sept '17) – this includes all persons aged 16 to 64 years of age. Census figures from 2011 suggested an unemployment rate slightly above the average at 5.01% for the Lincolnshire Wolds AONB. Employment is varied across the economic sectors; with over 42% working in professional, managerial or technical fields with a further 17% classed as skilled labour. Looking at more detailed figures for the farming labour market (INDICATOR 35 – Breakdown of Farm Labour (number of personnel) 16% of employment in the AONB is in this sector, including many full-time workers, and a significant number of farmers and farm managers.

INDICATOR 28: Access to basic services

Context: Traditionally the provision of services for both the local residents and visitors to the AONB has been variable and heavily dependent upon location and access to transport. Increasingly there has been a realisation of the value and importance of increased mobile phone and IT (broadband) coverage as a means of enhancing access to wider goods and services e.g. for finance, education and home-retail purchasing. Additional to the vital role played by the surrounding market towns and larger "service villages" of the Wolds (e.g. Binbrook and Tetford) there are a wide range of local facilities - both community and business focused – that are found across the AONB.

Lincolnshire Wolds Audit of services 2017	Facilities within/adjacent to the AONB	Facilities within the AONB + the wider offer (excluding market towns)
Local stores/shops	12	24
Tea /coffee rooms	9	15
Public houses	20	42
Post offices	6	13
Car service centres	6	11

Review of basic services data: Additional to the vital role played by the surrounding market towns and larger "service villages" of the Wolds (e.g. Binbrook and Tetford) there are a wide range of local facilities - both community and business focused – that are found across the AONB. The shops, pubs, tea rooms provide important facilities for local residents and help to provide further infra-structure to help support the visitor economy (both day time and staying). The facilities listed are especially important in the context of a generally sparse and dispersed population and several venues often provide a multiple range of services.

Road infrastructure and public transport services:

Context: The Lincolnshire Wolds JAC (Joint Advisory Committee) recognises that a good transport network is essential to the future well-being of those living in the AONB, to enable continued sustainable and sensitive development of the local economy. This should include a road infrastructure that can support the needs of local farming, forestry, tourism, recreation and other rural businesses. Currently 92.5% of the highway infrastructure is managed directly by Lincolnshire County Council, with 7.5% within the jurisdiction of North East Lincolnshire Council.

INDICATOR 29: The average annual average daily traffic flow (AADT) range for all vehicles and commercial vehicles on the Lincolnshire Wolds A and B roads.

Results:

A Roads	Lowest range	Highest range	Average % CV	Mean AADT	B Roads	Lowest range	Highest range	Average % CV	Mean AADT
2010	3,170	7,670	-	5,420	2010	1,340	4,320	-	2,830
2013	6,235	7,965	7%	7,100	2013	2,330	-	3%	2,330
2015	4,255	8,465	8%	6,360	2015	-	-	-	-
2016	3,510	11,115	9.5%	7,313	2016	1,355	2,800	9%	2,078
2017	3,435	11,430	9%	7,433	2017	-	-	-	-

(Note: Figures supplied from LCC; typically comprising data from between 3 to 7 counting stations within or immediately adjacent to the AONB).

Review of road traffic data: The above figures indicates that there has been a significant increase in road traffic through the AONB on the A Roads, with a >35% increase in annual average daily traffic flows since 2010. This reverse pattern would appear to be the case for B roads through the Wolds with the median figure showing a <30% drop in vehicle movements, although less surveys have been conducted on these roads. Taking the results as a whole the total number of vehicle journeys on the Wolds AONB roads has increased over the seven year period from 2010.

INDICATOR 30: The number and frequency of bus services through the AONB.

Further evidence required - there are currently four InterConnect routes (Nos. 3, 6, 9 and 51) which run within or very close to the Wolds. There are further additional bus routes radiating from Louth and a service linking Alford and Spilsby (part of a wider Skegness-Boston service). CallConnect services continue to remain very important for more bespoke journeys.

INDICATOR 31: Broadband/Mobile phone coverage:

Further evidence required – the AONB Partnership has sought to support and encourage the appropriate roll-out of both broadband and mobile phone coverage across the Lincolnshire Wolds. Digital and mobile phone services are clearly very important for both local residents and visitors to the area and a clear constraint for developing and enhancing our rural businesses. Government guidance highlights a presumption in favour of approving telecommunication applications – however in the context of the AONB impact upon the area's natural beauty must be reviewed on a case by case basis as planning applications come forward. The Partnership advocates the need to minimise potential harm to the designation through a range of measures, including maximising infrastructure (mast) sharing, careful site selection, robust justification statement, high quality design and landscaping for schemes. Landscape and Visual Impact Assessments (LVIA) provide an important tool to aid and assist the decision making process and help inform subsequent recommendations and conditions.

Several schemes have come forward under the Mobile Infrastructure Project (MIP) to help tackle areas of particularly poor telecommunications coverage. Post 2014-15 eight new mast sites were proposed, five of which were within the AONB. Four sites were deemed to be broadly acceptable but one site was in a very exposed location, immediately adjacent to the Viking Way, and was subsequently withdrawn.

INDICATOR 32: Farm types – Lincolnshire Wolds AONB:

Context: The character of the Lincolnshire Wolds remains heavily shaped by farming, with field sizes and cropping patterns reinforcing local landscapes and having an intrinsic impact upon the visual landscape character. Farming practices in turn, be they cultivation or livestock management, can often have a dominating impact upon the wider health of the AONB environment - its soils, water, biodiversity, heritage assets, carbon storage and climate change resilience.

The annual census of farming, carried out each June provides a range of data for protected landscapes – the latest figures currently available are for 2013 which showed 231 registered farm holdings for the Lincolnshire Wolds AONB. Due to changes in various collection and grouping methodologies from 2010, applying comparisons with earlier census data can be misleading, although still useful as a proxy measure.

Farm Types - Lincolnshire Wolds AONB

Farm Types (number of farms) 2013				
Cereals	General cropping	Specialist Poultry	Grazing Livestock (lowland)	Mixed
113 (48.9%)	36 (15.6%)	10 (4.3%)	42 (18.2%)	20 (8.7%)
Farm Types (number of farms) 2010				
Cereals	General cropping	Specialist Poultry	Grazing Livestock (lowland)	Mixed
117 (50.6%)	39 (16.8%)	8 (3.5%)	39 (16.8%)	19 (8.2%)

Defra metadata - June Agricultural Census 2010 & 2013.

INDICATOR 33: Farm sizes – Lincolnshire Wolds AONB:

Farm Sizes Classification

Farm Sizes (number of farms) 2013				
<5 ha	5 - <20	20 - <50	50 - <100	>100
15 (6.5%)	36 (15.6%)	26 (6%)	31 (13.4%)	123 (53.3%)
Farm Sizes (number of farms) 2010				
<5 ha	5 - <20	20 - <100	50 - <100	>100

11 (4.8%)	43 (18.6%)	24 (10.4%)	32 (13.9%)	121 (52.4%)
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Defra metadata - June Agricultural Census 2010 & 2013.

INDICATOR 34: Land Use in hectares (% listings in respect of the total area of the AONB)

Land Use	2007	2010	2013
Total cereals	24,950 (44.6%)	24,889 (44.5%)	26,428 (47.3%)
All other arable crops	11,998 (21.5%)	11,784 (21.1%)	13,150 (23.5%)
Horticultural crops	1,375 (2.5%)	811 (1.4%)	898 (1.6%)
Crops & bare fallow	38,900 (69.6%)	38,918 (69.6%)	42,973 (76.9%)
Permanent grass	6,195 (11.1%)	6,334 (11.3%)	6,358 (11.4%)
Temporary grass	1,190 (2.1%)	1,539 (2.8%)	1,507 (2.7%)
Rough grazing (sole right)	277 (0.5%)	278 (0.5%)	198 (0.4%)
Woodland	1,372 (2.5%)	1,529 (2.7%)	1,786 (3.2%)
Other land	1,330 (2.4%)	1,140 (2%)	1,151 (2.1%)
Set-aside	3,295 (5.9%)	-	-
Total Area (Defra registered)	52,558 (94%)	49,750 (89%)	53,962 (96.5%)
Total GIS area for AONB	55,898 (100%)	55,898 (100%)	55,898 (100%)

Defra metadata - June Agricultural Census 2010 & 2013.

INDICATOR 35: Breakdown of Farm Labour (number of personnel)

	2007	2010	2013
Farmers full-time	180	191	195
Farmers part-time	235	183	186
Salaried managers full-time	56	32	39
Salaried managers part-time	39	14	11
Employees full-time	192	203	226
Employees part-time	81	73	79
Casual workers	45	38	61
Total Labour	828	734	798

Defra metadata - June Agricultural Census 2010 & 2013.

Review of farmland data: Almost half of the 231 registered farms in the Wolds AONB are focused on cereal production, with over 75% of the area in cultivation. There remains an important proportion (>25%) of typically smaller farm units, that operate primarily as either mixed farming or lowland grazing units. These holdings are very important for their contribution to the local economy, environment and wider landscape, helping for example to maintain the lowland and rougher grazing pastures that characterise steep hillsides or the wetter valley bottoms. Some 16% of employment in the AONB is in the farming sector, which helps to support many full-time workers, and a significant number of farmers and farm managers.

INDICATOR 36: The total Rural Development Programme for England (RDPE) and LEADER investment in landowner, business and community partnership projects across the Lincolnshire Wolds.

Context: The RDPE has provided a wide range of financial support to the agri-environment businesses in and around the Lincolnshire Wolds AONB – typically providing support to landowners to help raise productivity, support employment and help aid farm diversification projects. The Wolds are also within the wider Lindsey Action Zone (LAZ) which has operated as the Local Action Group for the LEADER programme since its inception in 2007. The LAZ is made up of local representatives from the public, private and civic sectors and has provided funding for local businesses, farmers, foresters, land managers and communities for projects that create jobs and benefit the rural economy.

Results – RDPE additional investment: Within/adjacent to the AONB the RDPE has supported four Countryside Productivity small grant projects to enable farmers to purchase equipment to improve on-farm nutrient management, animal health and welfare and forestry productivity. A further £75,000 has recently been awarded for a national 'best practice and innovation' project funded via the European Innovation Partnerships, also under the RDPE. This project aims to undertake trials and analysis to investigate the effects of cover crops in vining pea rotations to improve soil health, soil structure and soil organic matter content; ultimately to improve productivity and yields in a sustainable manner.

Leader investment: The Lindsey Action Zone funding mechanism is ongoing, and projects from businesses both within and adjacent to the Lincolnshire Wolds are continuing to come forward with eligible schemes. From the previous programme (closed in 2014) some £451,273 of grants were provided in support of seven projects that directly benefited the AONBs economy, communities and environment. Three of the projects were directly aiding farm diversification, three were concerned with tourism enhancements and one was an international collaboration project with a Normandy Leader scheme with a focus on water management. This investment figure excludes a number of projects which were supporting businesses in the adjacent market towns of the Wolds, and thus understates the full benefits of the LAZ support to the area.

Review of RDPE and Leader investment: As suggested above, both of these Defra funding mechanisms have been very important in providing an added grant incentive for farm and rural enterprises. It has often made the difference in terms of a local business or third party organisation deciding to take the risk in extending and or diversifying their business operations through for example renewing or enhancing various capital assets. The end result has been enhanced sustainable development appropriate to the special character of the Wolds.

Discovering the Wolds (Theme 3)

Context: The Lincolnshire Wolds plays an important role in providing opportunities for access, recreation and tourism. The special qualities of the AONB include its rich cultural heritage and inspiring scenic rural landscapes, and the pervading ambience of peace and solitude which in itself is widely appreciated by local communities and visitors. The primary purpose of the AONB designation is to protect and enhance the natural beauty of the area, so unlike our National Parks, there is no statutory duty to promote the area for the purposes of recreation. However in recent years there has been an increasing recognition from the Partnership of the benefits of supporting appropriate infrastructure to help inform and assist both residents and visitors who wish to experience, enjoy and further their understanding of the Lincolnshire Wolds.

The tourism profile for the area needs to be carefully balanced, but clearly enhancing the range and quality of the offer in a sustainable way (e.g. enhancing and not detracting from the area's special qualities) can bring added benefits to the local communities notably through helping to support local businesses and services and encouraging participation in outdoor recreation with resulting health benefits for the general public. The AONB Partnership has linked up with relevant local authorities and local businesses to help develop and promote the new Love Lincolnshire Wolds tourism partnership and its accompanying Destination Management Plan. A key aim of the group is to help promote the area as an all-year-round destination.

INDICATOR 37: The total number of visitors to the wider Lincolnshire Wolds Destination Plan Area*

	2014	2015	2016
Total number of visitors	3.26 million	3.46 m	3.44 m

INDICATOR 38: The total number of day and staying visitors to the Lincolnshire Wolds*

	2014	2015	2016
Total number of day visitors	3.02 million	3.21 m	3.19 m
Total number of overnight visitors	243,000	250,800	250,200

INDICATOR 39: The estimated economic contribution from tourism across the Lincolnshire Wolds*

	2014	2015	2016
Total number of visitor days	3,825,000	4,053,000	4,055,000
Estimated Economic impact on tourism to the Wolds	£153 million	£163.83 m	£166.58 m

Review of tourism data: Indicators 37 - 39 have been collected through the 2017 STEAM Trend Report undertaken by consultants Global Tourism Solutions (UK) Ltd, commissioned by East Lindsey District Council.

The STEAM analysis data search area includes all of the Lincolnshire Wolds AONB and the wider hinterland areas recognised as the Lincolnshire Wolds Destination Plan Area*; significantly this includes all of the surrounding Wolds' market towns, the area known as the Spilsby Crescent which includes visitor sites such as Snipe Dales Country Park and Old Bolingbroke Castle, and the northern Wold extending to the M18-Humberside Airport zone.

The study reveals the important contribution that tourism makes to the Wolds economy with a modest upward trend in visitor days per annum to in excess of 4.05 million in 2016. There is an opportunity, with careful marketing and further sustainable infrastructure enhancements, to further develop the over-night stay offer – which currently represents just over 7% of the total visitor numbers.

The Love Lincolnshire Wolds partnership has highlighted the following key messages from the report:

- *Between 2014 and 2016 the visitor economy has grown by 8.87%*
- *More visitors are opting for non-serviced accommodation for their breaks*
- *There has been a 5% increase in visitor numbers between 2014 and 2016.*

INDICATOR 40: Number and condition of gateway roadsigns for the Lincolnshire Wolds

The LWCS undertook an audit in 2016 to review the conditions of the Lincolnshire Wolds boundary signs that had been installed as part of the Lincolnshire Wolds Interpretation Strategy Pilot Projects. Of the 20 signs installed over 15 years ago, 18 were found to still be in their original location, one had been moved and one had been lost. Most of the signs remain in a good physical condition (i.e. still sound), although some were not particularly prominent on account of overhanging vegetation and a small number were found to be in a general shabby condition.

Review of signage: The current stock of boundary signs are subject to renewal - with designs, funding and permissions pending. The design agreed and adopted at the time was of a basic style to ensure compliance with the Highway regulations. The style of the signs in their current form clearly does not include the revised LWCS logo, or the additional link to the wider National Association for AONBs.

INDICATOR 41: Number of Promoted Circular Walking Routes

Context: Since the Lincolnshire Wolds Interpretation Strategy in 2001, the AONB team has focused on the development of a wide range of circular walk and rides across the Wolds. Many have been subsequently produced with the direct involvement and support from a wide range of community and interest groups. These are available both in leaflet and electronic formats and are regularly reviewed and updated.

Results: As of September 2017 the LWCS has in print, or available electronically 15 Wolds Walk routes; 22 Gateway Walk routes from the Market Towns of Market Rasen, Louth and Alford. Lincolnshire County Council has produced a further series of walks for the town of Horncastle. There are a further 11 routes available that link directly with the Interconnect Bus Services (Lincoln < > Grimsby and Lincoln < > Skegness respectively).

INDICATOR 42: Number of Long Distance Trails

Results: There are seven long distance routes that pass through the AONB: The Viking Way, National Sustrans Cycle Way, SilverLincs Way, Lindsey Loop, Lindsey Trail, Lincs Wolds Way and the Greenwich Meridian Trail.

INDICATOR 43: Number of special feature maps and leaflets

- As of September 2017 the LWCS has in print five Wonders of the Wolds Leaflets – namely for Geology, Heritage, Water, Ritual & Religion, and the very latest on Wildlife.
- The LWCS has also produced two very popular general leaflets promoting the AONB and its attractions and facilities e.g. Enjoy the... and Making the Most of... the Lincolnshire Wolds.
- Louth Cycle Routes - a pack of six cycling routes (on and off-road)
- North and South Wolds Cycling Maps
- The Lindsey Trail - specialist horse-carriage route (on and off-road)

Review of recreational resource data: As evidenced, there is currently a wide range of walking and to a lesser extent cycling literature available across the Wolds that has been produced by the LWCS on behalf of the AONB Partnership. These are widely available in both leaflet and pdf forms and are in a clear and professional format. The Love Lincolnshire Wolds tourism group are currently developing an online resource, summarising key routes on an electronic map that will be accessible through Smart technology, and supplementing existing website access. With further local support and engagement there may be further opportunities to develop further routes, and there is a known demand for new off-road cycling and horse-riding trails.

INDICATOR 44: Number of AONB specific interpretation panels

Over 15 years ago Lincolnshire County Council coordinated the installation of a suite of interpretation panels on behalf of the AONB Partnership. Many were showing signs of general wear and tear so during 2014-15 seven were replaced in a new house style. A further 11 panels were updated in 2015-16. Three additional panels have been installed in collaboration with local community groups and relevant partners including sites at Nettleton, Utterby and Walesby. Four more site panels are being refurbished in 2017-18.

Review of interpretation data: As detailed, a modest investment has been undertaken to help refresh the interpretation panels across the AONB for the benefit of residents and visitors. The panels are located at some of the more popular vantage points across the Wolds – they are frequently used to highlight the area's national designation and raise awareness of the Wolds special qualities, its 'natural beauty' and sense of place.

INDICATOR 45: Number of people engaged in AONB activity through guided walks, events, shows and volunteering.

Throughout 2016-17 approximately 11,250 people were engaged in AONB walks, events, shows and volunteering including the annual Lincolnshire Wolds Walking Festival (3,000+ in attendance) and Lincolnshire Chalk Stream Festivals (250+ in attendance).

Review of practical engagement data: Year-on-year the LWCS and partners commonly makes direct contact with over 10,000 people through event and activity programmes and also through support and involvement in a number of locally organised community events. The challenge has always been to reach out to new audiences and to widen debate and interest in rural issues among the wider population.

INDICATOR 46: Number of visits to the Wolds AONB website.

During 2016-17 the LWCS website was visited 57,749 times of which 79% were new visitors to the site. 94% of visits were from the UK followed by the USA, Germany, Netherlands and Australia.

INDICATOR 47: Google Maps Rating for the Lincolnshire Wolds AONB.

As of September '17 the Lincolnshire Wolds AONB had received 453 independent review postings with an average score rating of four and a half out of five.

- 70.6% had scored as five
- 18.9% had scored as four
- 6.4% had scored as three
- 1.9% had scored as two
- 1.9% had scored as one.

INDICATOR 48: Trip Advisor Rating for the Lincolnshire Wolds AONB.

As of September 2017 the Lincolnshire Wolds AONB had received 59 independent review postings and had an average score rating of five out of five stars.

- 52 had scored as excellent
- 6 had scored as very good
- 1 had scored as average.

Review of website data: The LWCS operates a dedicated website and this has been a very useful tool for disseminating information, increasing interest and ultimately enabling participation in the wider work of the AONB Partnership. Further on-line activity via Google Maps and Trip Advisor is also providing a very useful tool for the recording of independent and unprompted feedback.

These outlets are commonly frequented by first time visitors to the area and as summarised, on the whole the responses have been very positive – many enjoy the views, tranquillity and special charm of the area. The more critical comments see the Wolds as a sleepy back-water with few attractions and facilities and a poor transport infrastructure.

Developing the Wolds (Theme 4)

Context: The AONB Partnership recognises that the Lincolnshire Wolds, whilst affording national protection on account of its high scenic natural beauty, should not be preserved in aspic – the visual character is clearly a combination of generations of interaction between people, communities and the natural environment – it is very much a living and working landscape. The challenge for strategic planners, developers, land managers, land owners and local communities is to continue to ensure that future development is sustainable.

In essence we must successfully balance the need for economic and social growth and cohesion with the highest quality of protection and enhancement for the natural beauty of the AONB. A constant should be to ensure that we secure the right type of development, of the right size and in the right location – whilst upholding the highest regard for the designation and also importantly its setting. The views both to and from the AONB are highly prized, but are especially vulnerable to development on account of the areas low profile and its juxtaposition with very flat and low lying ground, especially to the east (Lincolnshire Coastal Grazing Marshes) and to the west (Lincolnshire Clay Vale).

INDICATOR 49: Total investment and projects supported via the Wolds AONB Partnership's Sustainable Development Fund (SDF) and Small Grants Scheme (SGS):

Results: The Lincolnshire Wolds Sustainable Development Fund (SDF) administered by LWCS staff was launched initially in 2004-05 with support from East Midlands Development Agency. With Defra's continuing core grant support for the AONB, partnership funding has continued to support the programme. To date the SDF has successfully awarded over £600,000, supporting 113 local projects across the Wolds and helping to bring in over 1.1 million in match-funding.

Since April 2013 the SDF has supported 21 projects – with an investment of £68,624 securing match-funding of £73,022. Over the same period the SGS has supported 57 projects – with an investment of £38,363 securing match-funding of £53,589.

Review of SDF/SGS data: The SDF has sought to sustain and enhance the social wellbeing and economic viability of communities and local businesses within the Lincolnshire Wolds, along with seeking to conserve and enhance the local characteristics of farming, land management, culture, wildlife, and ultimately landscape. The programme remains important in providing a catalyst to enable innovative sustainable development at the grass-roots level.

The SGS has sought to encourage and support projects that protect, enhance and encourage interest in the Lincolnshire Wolds landscape and its special features and has helped to kick-start numerous local projects across the AONB, with many farmers, landowners and businesses utilising the scheme with guidance and support from the LWCS team.

Further details on individual SDF and SGS projects are detailed within the Lincolnshire Wolds AONB Annual Reviews. (available at www.lincswolds.org.uk)

INDICATOR 50: Number of neighbourhood plans

There are currently no known neighbourhood plans for settlements directly within the Lincolnshire Wolds AONB. Several have been produced for the neighbouring settlements of Caistor and Horncastle and also more recently the smaller settlement of Legbourne.

INDICATOR 51: Number of local design guides

Local village design guides and local histories have been produced on a regular basis by a number of Wolds communities, often under the auspices of local history groups.

There are currently very few local design guides – Tealby is one example.

INDICATOR 52: Number of new affordable homes

Further evidence required.

INDICATOR 53: Number of new flood management schemes to aid water management and /climate change

- Major new flood alleviation scheme installed within the River Lud catchment in 2017, to help protect the town of Louth from extreme rainfall events.

INDICATOR 54: Number of planning applications or appeals approved contrary to the advice of the LWCS (AONB Staffing Unit) and Natural England.

Indicator 54 is a new measure initially suggested by ELDC, and would be monitored from May 2018. Currently LWCS comments on a wide range of planning applications at the invitation of the respective planning authority. This has included AONB Partnership representation at the appeal stage. Natural England is more likely to get involved in applications for major developments within or adjacent to the Wolds. LWCS worked closely to support the relevant authorities in upholding WLDC's decision to refuse two large single wind turbine applications, both in close proximity to the western edge of the Wolds – the impact upon the views and setting of the AONB were significant reasons for the ongoing refusal of the applications on appeal.

Partnerships in the Wolds (Theme 5)

Context: The Lincolnshire Wolds AONB is managed through the Lincolnshire Wolds Joint Advisory Committee (JAC) body - a partnership of public, private and third sector (voluntary) bodies. The Lincolnshire Wolds Countryside Service (LWCS) operates as the AONB staffing unit and works on behalf of the JAC, helping to coordinate and facilitate the partnership's production, review and implementation of the AONB Management Plan. The Plan is a statutory document which sets out both the Strategy and Action Plan for protecting and enhancing the Lincolnshire Wolds through a programme of collaboration. Additional guidance and scrutiny is provided via the Lincolnshire Wolds Joint Management Group, which comprises the key local authority funding partners and Natural England.

INDICATOR 55: The LWCS will compile and publish an annual review summarising AONB Partnership activity undertaken.

The Lincolnshire Wolds AONB Annual Review (2016-17), the 13th annual report, has been completed and well received both locally and nationally.

INDICATOR 56: All JAC partners will complete annual updates against key Management Plan policies and objectives as detailed within the five year indicative Action Plan.

The last review was undertaken in April-May 2017. The next review will commence in March 2018 in advance of the adoption of the Revised Management Plan.

INDICATOR 57: The key local authorities will review and sign a local Memorandum of Agreement to help ensure continuing financial support.

- A three year MoA agreement is currently in place and due for renewal in March 2018.

INDICATOR 58: The JAC will continue to support, influence and promote the wider family of AONBs – primarily via the work of the National Association for AONBs (NAAONB), under the Landscapes for Life banner.

- National updates on relevant performance indicators are submitted annually.
- Submissions are provided to aid development of the NAAONB Strategic Plan.
- AONB staff continue to maintain active links with Basecamp as a e-sharing tool to aid learning.

Review of local and national partnership management data: The five-yearly Management Plan continues to provide a key focus for collaborative engagement across environmental, social and economic interests. As well as looking ahead, the LWCS Annual Review continues to be published to celebrate the many achievements and highlight the positive work being undertaken on the ground. A large number of projects are reliant upon ongoing partnership and community engagement. With continuing pressures on public resources the challenge remains on securing active involvement from all stakeholders, including key government agencies.

CASE STUDY 1 – RIVERFLY MONITORING PROJECT

The Riverfly surveying scheme is a national aquatic invertebrate surveying scheme involving standardised training and the use of standard equipment. Volunteers are trained to identify 8 key indicator species of aquatic invertebrates e.g. mayfly larvae and freshwater shrimp. Numbers are estimated and then totals are given a score of 1, 2, 3 or 4 for each species based on abundance. These totals are added up to give an overall score. A 'trigger' level is calculated by the relevant river authority (in this case the Environment Agency). If the overall score of a sample is below the trigger level the Environment Agency is told and relevant action taken. The surveys are carried out on a recommended monthly basis at allocated sites. Each volunteer surveys the same allocated site every time. The data is fed into a national database.

Environment Agency + Lincolnshire Chalk Streams Project + Pilot Project

LCSP Partners at the Lincolnshire and Northamptonshire Environment Agency, Chris Extence and Richard Chadd, have developed a new scoring system based on an augmented list of aquatic invertebrates to extend the Riverfly Monitoring Initiative surveying model.

To implement the new system the Lincolnshire Chalk Streams Project with their partners at the Environment Agency have been working with their existing Riverfly volunteers to pilot the project on Lincolnshire's chalk streams in the Lincolnshire Wolds AONB. Existing volunteers were given a day's training by Richard Chadd and Chris Extence hosted by the Lincolnshire Chalk Streams Project, first to emphasise the key problems with local rivers, then to demonstrate how the identification of particular invertebrates can highlight issues such as poor water quality, sedimentation and low flows.

The surveying method remains the same, a kick sample is taken at an allocated river section every month by volunteers and invertebrates are collected, numbers estimated and recorded. The list of invertebrates has been extended to 26 from 8 to give a more in depth evaluation of the issues within the river. The 8 key invertebrates on the standard Riverfly Partnership list are included on the new list.

Standard Riverfly sites: Nos 3, 5 -7, 10 & 11.

Pilot Project sites: Nos 1-2, 4, 8-9.

Survey Sites in the AONB:

1. Mid Bain - Mill Donington on Bain
2. Upper Bain - Biscathorpe 1 (Upper)
3. Upper Bain - Biscathorpe 2 (Lower)
4. Upper Waithe Beck - Kirmond le Mire
5. Upper Waithe Beck - Swinhope Church
6. Upper Waithe Beck - Moorhouse Farm
7. Upper River Lud - Welton Beck, Welton le wold
8. Nettleton Beck - Dunn Deal Tea Rooms
9. River Lymn - Salmonby bridge
10. Long Eau - Ketsby near Mill Farm
11. Burwell Beck - Burwell headwaters
12. Rain Beck/Double Dyke - Tetford
13. River Rase - Bully Hill. Tealby.

Case Study 2 – Traditional Farmstead and Landscape Assessment Report (Locus Consulting, 2017).

The Locus Consulting report provides guidance to support the sustainable development and conservation of the historic farming landscapes of the Lincolnshire Wolds. With direct links to the original Greater Lincolnshire Farmstead Guidance (for Lincolnshire, North Lincolnshire and North East Lincolnshire) the study provided greater detail and clarity on the AONB farmstead resource. In addition to a review of the evidence base the report produced a Farmstead and Landscape Statement for the Lincolnshire Wolds AONB which seeks to enhance understanding of the local distinctiveness and significance of traditional rural building in the AONB. (Further information available on request via www.lincswolds.org.uk)

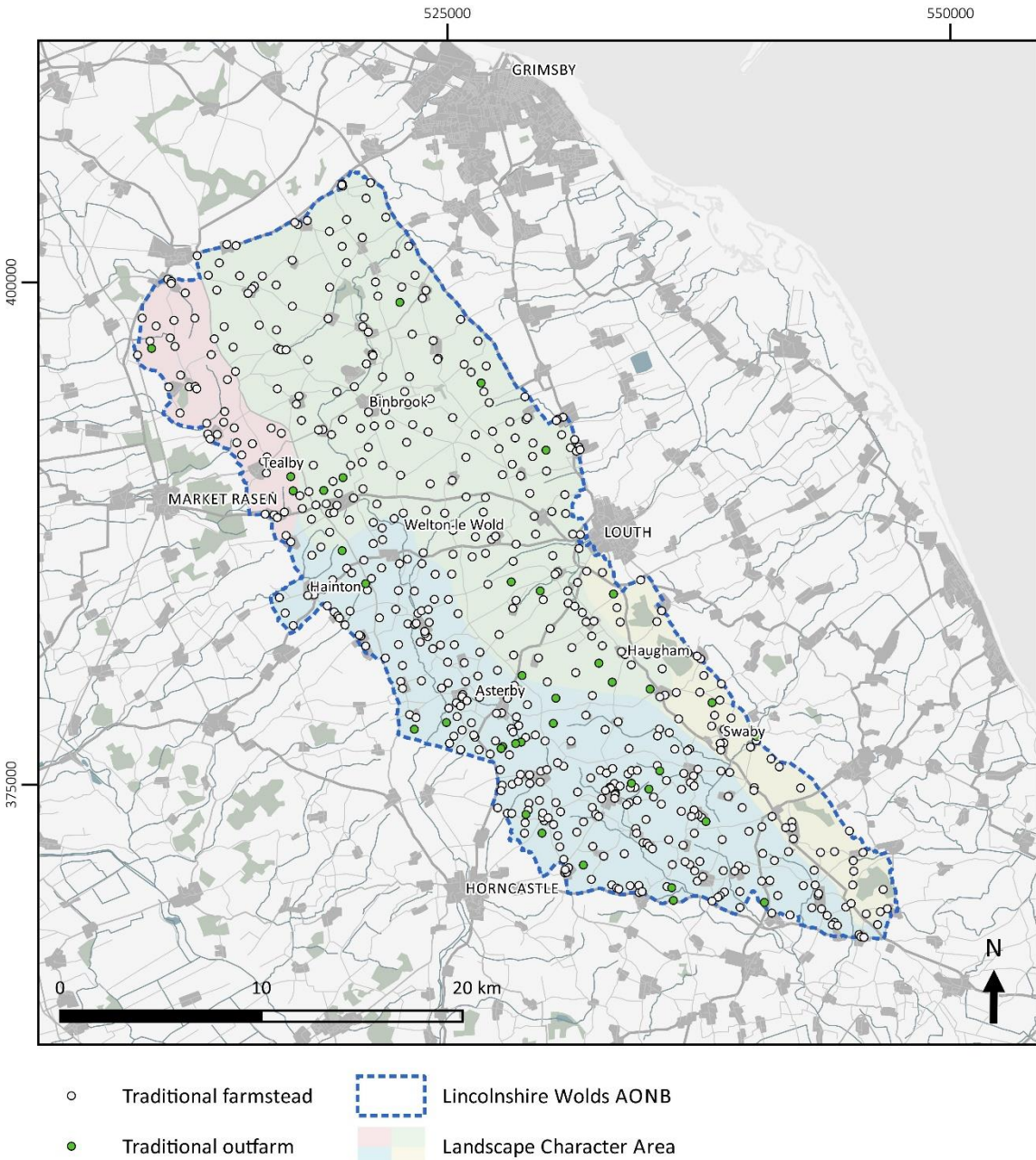
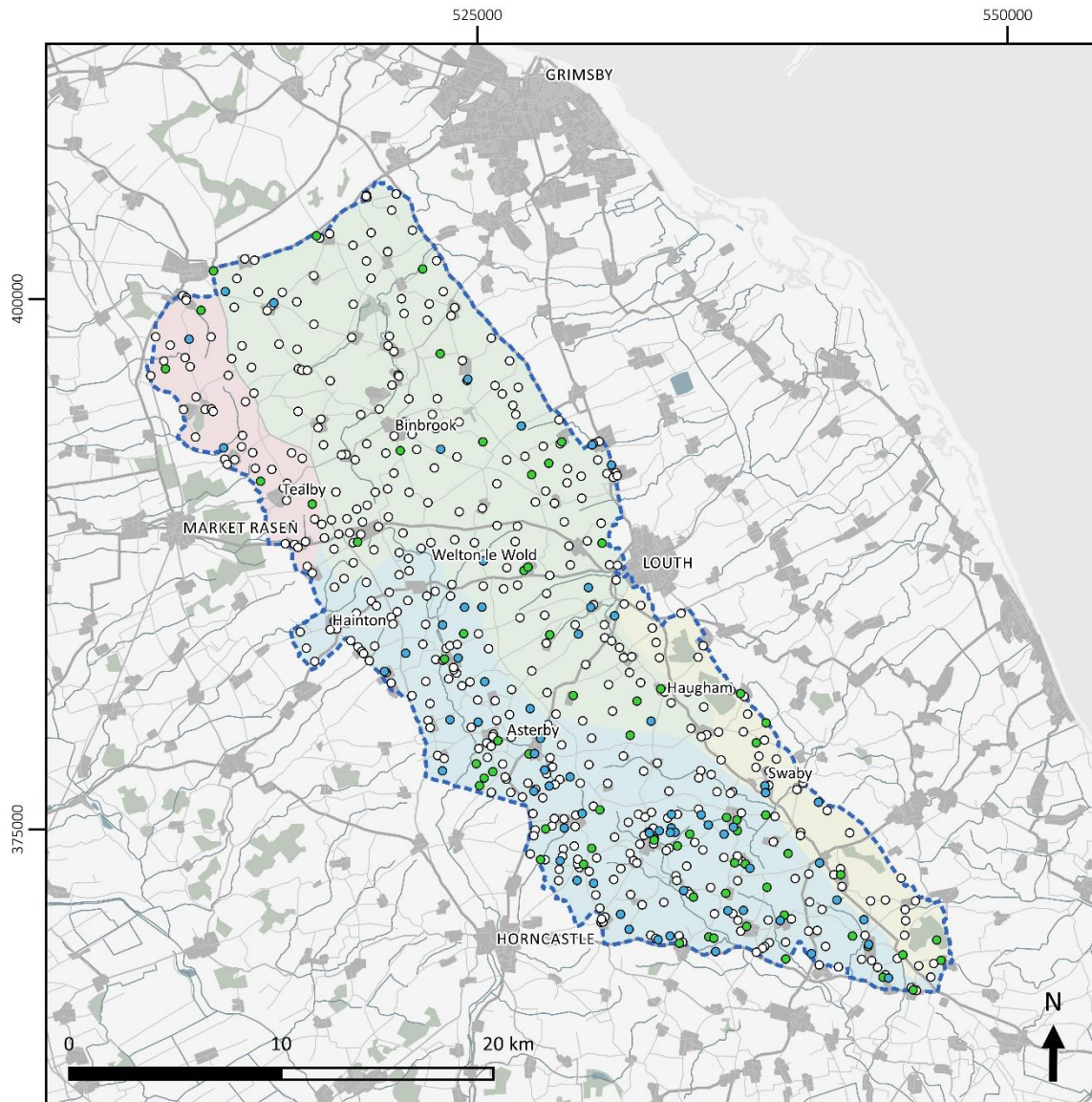


Figure 1: Farmstead classifications



- Regular courtyards
- Loose courtyards
- Other plan-types
- ▭ Lincolnshire Wolds AONB
- ▭ Landscape Character Area

Figure 2 - Farmstead Types

FARMSTEAD TYPES			
Layout	# in AONB	% in AONB	Greater Lincs' avg.
Regular courtyards	434	79%	76%
Loose courtyards	59	11%	14%
Others (including dispersed and linear arrangements)	56	10%	10%

LOCAL VARIATION IN FARMSTEAD CHARACTER ACROSS THE LINCOLNSHIRE WOLDS

Greater Lincolnshire	AONB	North West Scarp	Ridge and Valleys SW	South East Claylands	Chalk Wolds	
Numbers of traditional farmsteads and outfarms identified during the Greater Lincolnshire Traditional Farmstead project						
Traditional farmsteads	10497	549	43	262	48	196
Traditional outfarms	361	37	3	20	3	11
Farmstead types						
Regular courtyard	76%	79%	88%	73%	79%	85%
Loose courtyard	14%	11%	5%	13%	13%	9%
Others (including dispersed and linear arrangements)	10%	10%	7%	14%	8%	7%
Regular courtyard arrangements						
L-Plan	50%	37%	32%	43%	37%	30%
E-Plan	7%	16%	21%	6%	17%	29%
U-Plan	33%	40%	42%	40%	46%	38%
Others (including F, H, T and Z)	10%	7%	5%	11%	0%	1%
Farmstead location within the landscape						
In an isolated position	67%	71%	67%	74%	83%	75%
Within or associated to a high-status group, church or manor	3%	6%	0%	6%	8%	9%
Within or associated to a village or hamlet	21%	18%	33%	18%	15%	16%
Within a cluster of farmsteads	9%	1%	0%	2%	0%	0%
Levels of survival of traditional farmsteads						
Extant – no apparent alterations	10%	11%	19%	10%	8%	13%
Partial loss – less than 50% change	33%	37%	40%	37%	35%	36%
Significant loss – more than 50%	19%	25%	26%	27%	23%	23%

change						
Farmhouse only survives	9%	4%	2%	3%	6%	6%
Total loss or demolition of traditional buildings and plans	29%	21%	14%	22%	27%	22%
Scale of traditional farmsteads						
<i>(measured in metres, diagonally across the farmstead plan)</i>						
Average	42.8	52	51.7	47.6	48.8	58.8
Median	39	47	50	41	43.5	57

