



Drawing No:	1256/2511
Revision:	V2
Date:	07 Nov 2012
Project:	The Hills Farm Wind Turbine
Drawing Title:	Proposed Turbine Location
Scale:	1:2,500 @ A2

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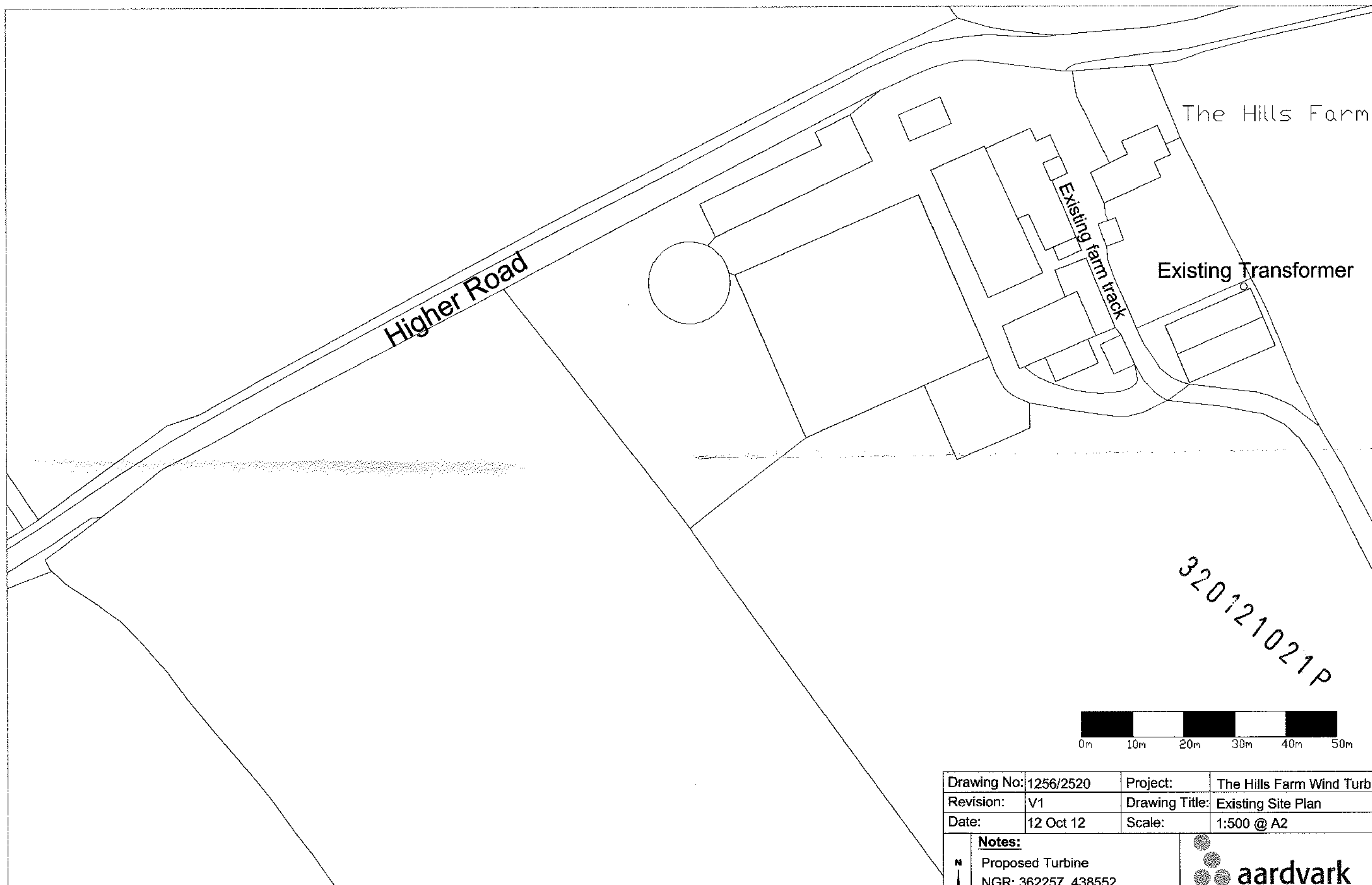
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Notes:

- ☐ Application Area
- ☐ Land ownership boundary

Proposed Turbine
NGR:362257,438552

File:Z:\Data 2012\1256 Tonn Proctor Wind Turbine Application\Date 8
Drawings\Proposed Site Plans.dwg
Drawn By: JGP Checked By: PC



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Drawing No:	1256/2520	Project:	The Hills Farm Wind Turbine
Revision:	V1	Drawing Title:	Existing Site Plan
Date:	12 Oct 12	Scale:	1:500 @ A2

Notes:

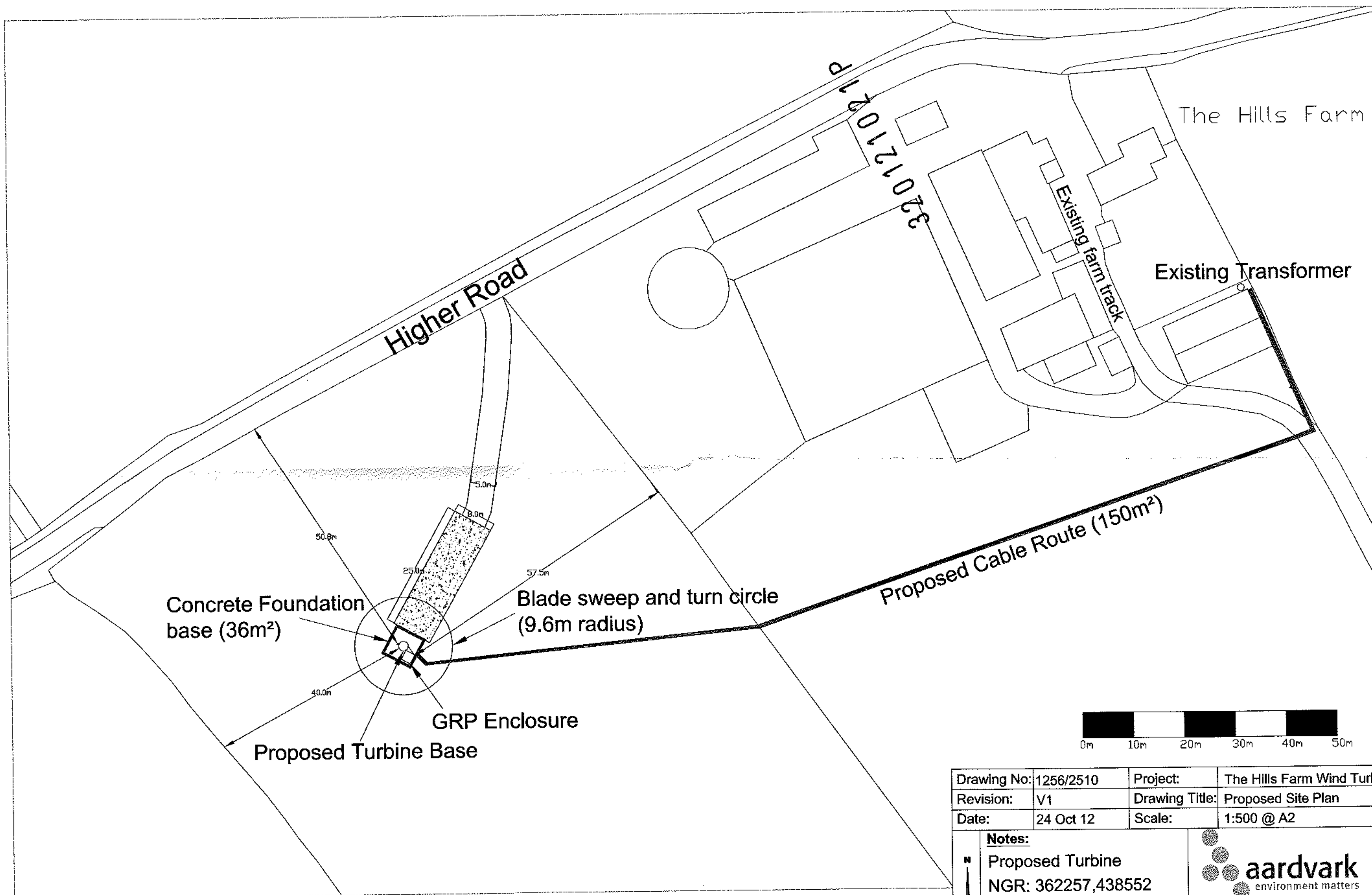
Proposed Turbine
NGR: 362257, 438552

File: 1256/2520 20121256 Tom Proctor Wind Turbine Application Data & Drawings/Proposed Site Plans.dwg
Drawn By: JGP Checked By: PC



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Drawing No:	1256/2510	Project:	The Hills Farm Wind Turbine
Revision:	V1	Drawing Title:	Proposed Site Plan
Date:	24 Oct 12	Scale:	1:500 @ A2

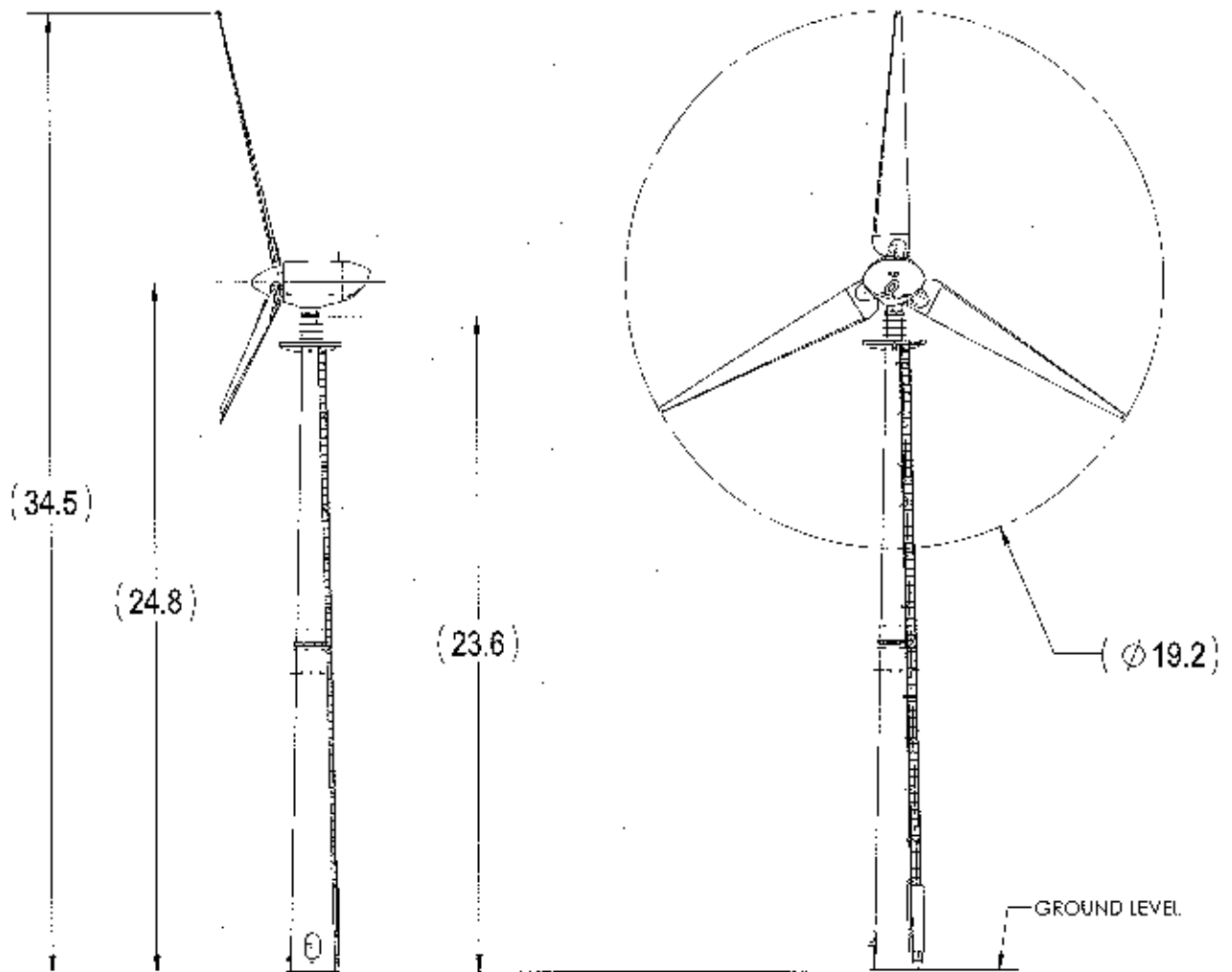
Notes:

Proposed Turbine
NGR: 362257,438552

File: A2: Data 2012\1256 Tom Proctor Wind Turbine Application\Data &
Drawings\Proposed Site Plans.dwg
Drawn By: JGP Checked By: PC

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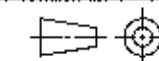
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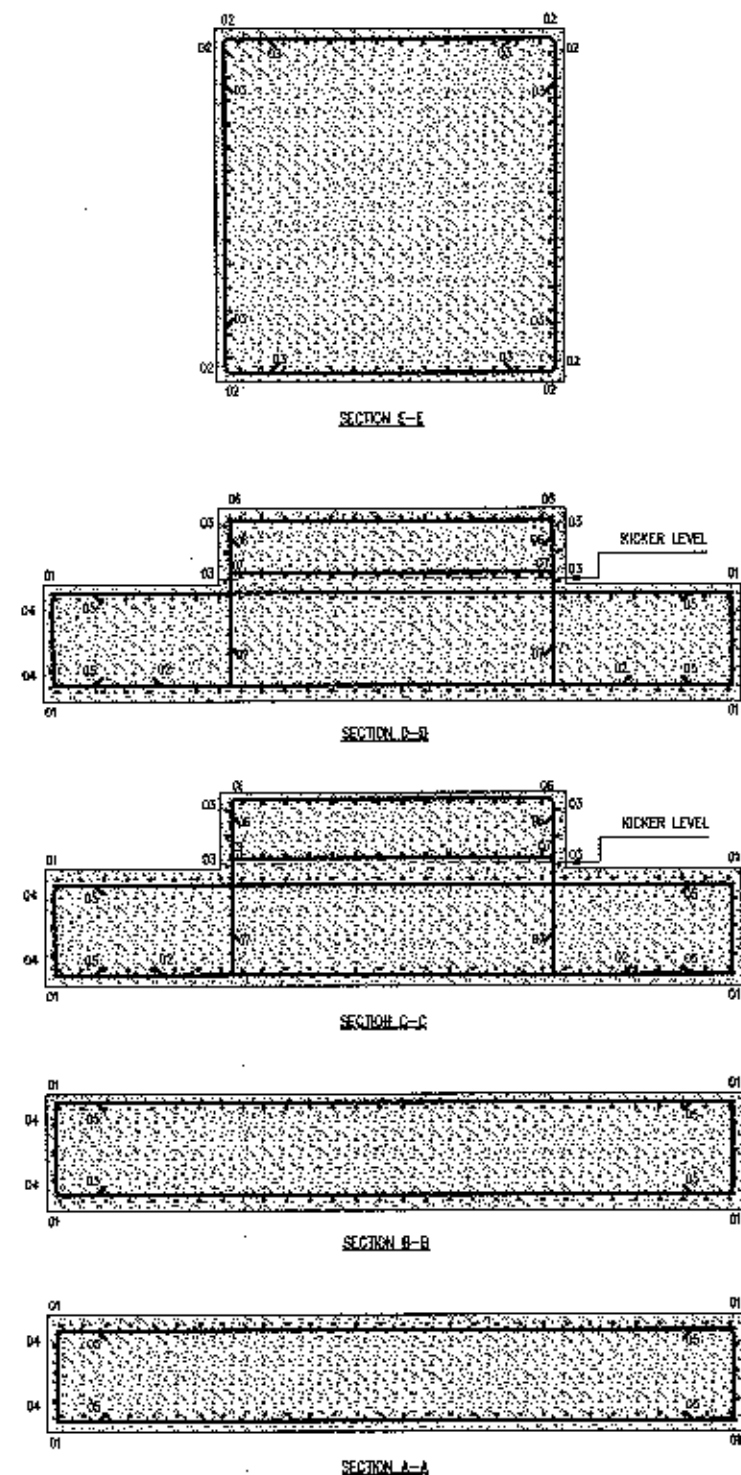
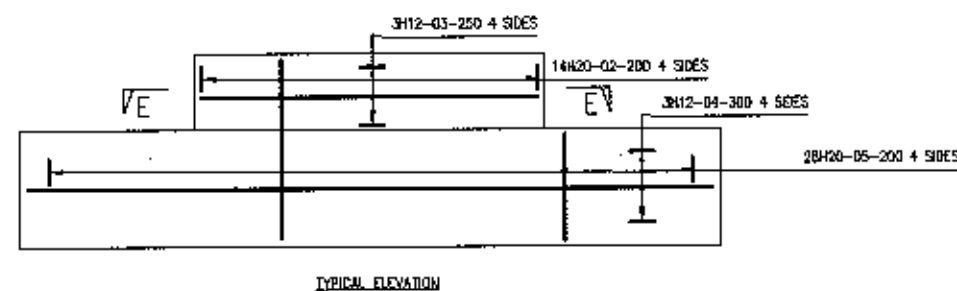
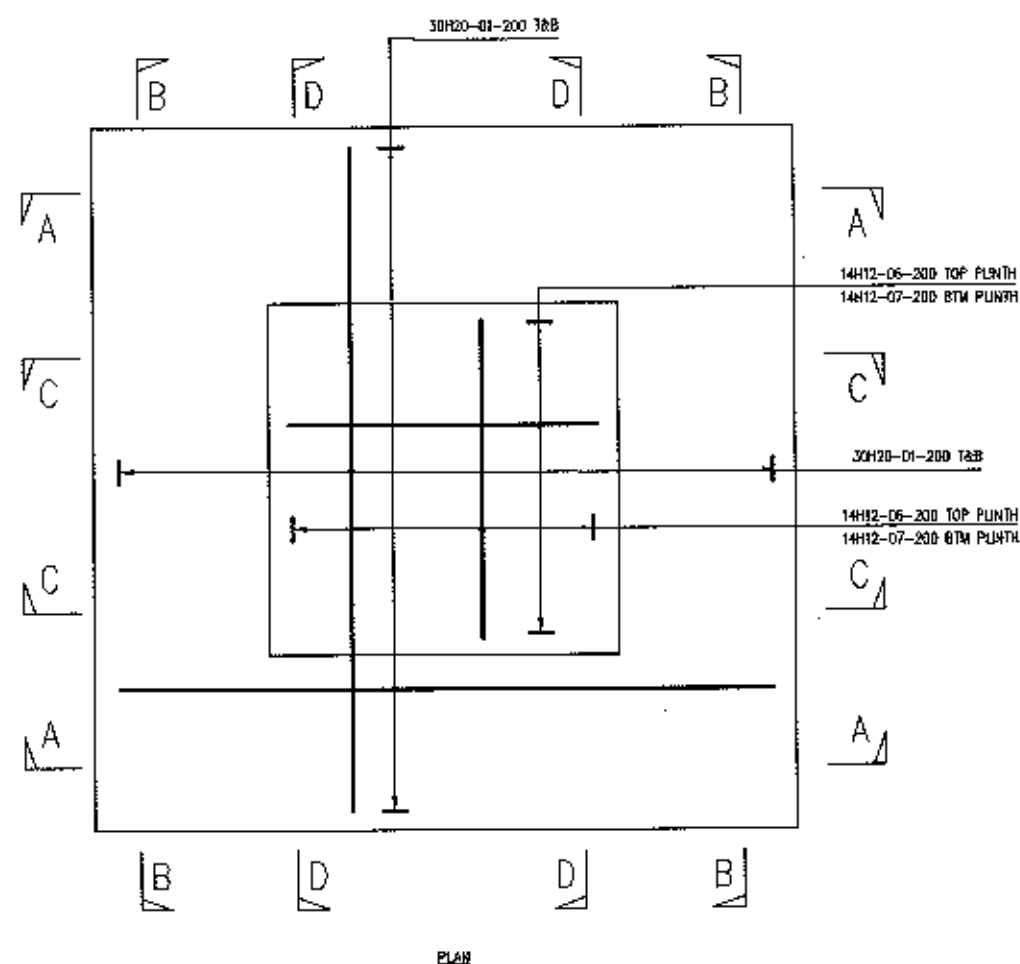
NOTE:
DIMENSIONS APPROXIMATE AND PROVIDED FOR PLANNING
PURPOSE ONLY. FINAL CONSTRUCTION ELEVATIONS ARE
AVAILABLE IN A PERMITTING PACKAGE ON A PER-TOWER BASIS.

ALL DIMENSIONS ARE IN METERS

DRAWN BY RAJESH (CPT)	2011-10-17	SCALE 1:250	FORMAT A4
APPROVED BY	 This document is the exclusive property of Endurance Wind Power and shall not be disclosed or reproduced, either in complete or partial form, by any person or company without the written consent of Endurance Wind Power.		
TITLE	E-3210 Elevation, 24m, Monopole		
PART NUMBER 001598	REVISION 1	DATE (PRINTED) 22/Nov/2011	SHEET 1 / 1



SITE REF: -



REINFORCED CONCRETE NOTE

1. THIS DRAWING IS TO READ IN CONJUNCTION WITH RELEVANT FOUNDATION DRAWING.
2. FOUNDATION SHALL BE FOUNDED ON APPROVED SUB-GRADE, CAPABLE OF WITHSTANDING A MINIMUM BEARING PRESSURE OF 100 kN/Sq.m.
IN GROUND WHERE THERE IS A POSSIBILITY THAT WATER LEVELS WILL BE HIGHER THAN 300mm ABOVE FOUNDATION SOFFIT, SUITABLE PERMANENT DRAINAGE MUST BE PROVIDED.
DESIGN ENGINEER TO BE CONSULTED PRIOR TO POURING OF CONCRETE, WHERE GROUND IS FOUND TO BE SOFT, RUNNY, LOOSE OR VARIES SIGNIFICANTLY ACROSS FORMATION. ALSO IN AREAS OF SEVERE CONTAMINATION, OR WHERE HIGH SULPHATE LEVELS ARE FOUND TO BE PRESENT.
3. CONTRACTOR SHALL SITE CHECK ALL RELEVANT DIMENSIONS AND LEVELS PRIOR TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE ACCURACY OF ALL WORK AND THE CORRECT SETTING OUT ON SITE.
4. BARS LISTED ON BENDING SCHEDULE.
5. REINFORCING BARS TO BE GRADE B500A, B500B, OR B500C DEFORMED IN ACCORDANCE WITH BS 8686:2005. (F_y=500N/mm²)
6. ALL STRUCTURAL CONCRETE TO BE FND2 CLASS 2 SULPHATE RESISTANT CONCRETE MIX WITH "VERY SEVERE EXPOSURE" CONDITIONS AS DEFINED IN BS EN 1992-1-1:2004.
7. MINIMUM COVER TO ANY BAR SHALL BE:-
60mm TO TOP OF FOUNDATION
60mm TO SIDES OF FOUNDATION
75mm TO UNDERSIDE OF FOUNDATION

NOTE! Bar mark 8 is a chair to be used to assist in the spacing of the main top and bottom layers of reinforcement, if required. There are sufficient chairs scheduled to employ at minimum 1 metre centres at approx. 1.2 metres in from the perimeter of the foundation.

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Bar mark 8 optional. See note.

MEMBER	BAR MARK	TYPE AND SIZE	No. OF MEMBERS	No. IN EACH	TOTAL No.	LENGTH OF EACH BAR mm	SHAPE CODE	A mm	B mm	C mm	D mm	E mm
FOUNDATION	01	H20	1	120	120	5850	00	5850				
FOUNDATION	02	H20	1	56	56	1925	11	1475				
FOUNDATION	03	H12	1	12	12	3425	21	300	2875			
FOUNDATION	04	H12	1	12	12	6425	21	300	5875			
FOUNDATION	05	H20	1	112	112	1425	21	350	840			
FOUNDATION	06	H12	1	28	28	3200	21	200	2850			
FOUNDATION	07	H12	1	28	28	4100	21	650	2850			
FOUNDATION	08	H16	1	16	16	2625	98	450	800	450	800	(450)

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DO NOT SCALE FROM THIS DRAWING.

IF IN DOUBT ASK.

REV	DESCRIPTION	DRAWN	APPD	DATE
G	Bar mark 8 shape code corrected.	L.B.	L.B.	24.11.11
C	For Construction	L.B.	AF	8.4.11
D	Chair schedule and note added.	L.B.	AF	29.8.11
E	Notes and EWP drawing number revised.	L.B.	DB	24.10.11
F	Ground drain note added.	L.B.	DB	16.11.11

MATERIAL:

FINISH:

HUTCHINSON ENGINEERING LTD.

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FABRICATION
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Tel: +44 (0)151-422-9990
Fax: +44 (0)151-420-5100CLIENT: ENDURANCE WIND POWER
PROJECT: 24m, 50kW INSTALLATION
DRAWING TITLE: FOUNDATION - DETAILSDRAWER: L.B. APPD: L.B. CHKD: GQ
SCALES: - N/A DATE: 11.2.2011
DRAWING No: EWP50_24m_F_002

EWP DRAWING No: 000782

A3

REV
G

Renewable Energy Position Statement

1.1 Introduction

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1.1 Under the Climate Change Act of 2008 the Government is committed to delivering an 80% reduction of greenhouse gas emissions by 2050, including a 34% reduction by 2020. In order to achieve these reductions a number of actions will need to take place, notably improving energy efficiency and reducing the demand for power. In addition the UK is committed to increasing the percentage of power that it produces from renewable sources to 20% by 2020, and reducing its dependence on fossil fuels. Supporting micro-renewables, i.e. small scale and local power generation, is an important part of this equation.

1.2 The Forest of Bowland Area of Outstanding Natural Beauty (AONB) is a statutory protected landscape, and as such each local authority within the Forest of Bowland AONB has a duty of care to ensure that the landscape is not affected by unsightly development. Current legislation (section 85 of the Countryside and Rights of Way Act 2000) requires that 'in exercising or performing any functions in relation to, or so as to affect land' within the designated landscape an 'authority shall have regard to their statutory purposes'; i.e. to 'conserve and enhance the natural beauty of the area.'

1.3 The Government's Planning Policy Statement on renewable energy (PPS22) states that "planning permission for renewable energy projects should only be granted where it can be demonstrated that the objectives of designation would not be compromised and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the environmental, social and economic benefits."

1.4 The Forest of Bowland AONB, like everywhere else, is affected by climate change, and its impact will increase as greenhouse gas emissions continue to build up in the atmosphere. It is important that the Forest of Bowland AONB plays its part in reducing emissions and this includes the small scale generation of energy from renewable sources.

2. The purpose of this Position Statement

2.1 This document sets out the Forest of Bowland AONB Joint Advisory Committee's position with regard to the siting of renewable energy developments, both within and adjacent to the boundaries of the Forest of Bowland AONB. This guidance is intended to assist in the determination of planning applications submitted to the planning departments of local authorities in the AONB partnership i.e. the districts of Craven, Lancaster, Pendle, Preston, Ribbles Valley, and Wyre.

2.2 The document is also intended to offer advice to potential developers, and any business, community or resident who is seeking to install micro or small scale renewable systems within the Forest of Bowland AONB.

2.3 The Forest of Bowland AONB is a designated landscape not a planning authority. This role remains with the relevant local authority and it is they who are expected to carry out the duty of care mentioned in paragraph 1.2 and ensure that development within the AONB is in accordance with the requirements of national, regional and local planning policy

2.4 This document should be read in conjunction with:

- ⊗ Forest of Bowland AONB Management Plan
- ⊗ Forest of Bowland AONB Landscape Character Assessment
- ⊗ Landscape Sensitivity to Wind Energy Development in Lancashire
- ⊗ A Landscape Strategy for Lancashire
- ⊗ Landscape and Heritage Supplementary Planning Guidance

2.5 Development and other activities within the Forest of Bowland AONB is guided by a partnership comprising six local authorities (see paragraph 2.1), plus Natural England, other statutory agencies, voluntary groups, communities, businesses and landowners with an interest in the area. The partnership is managed by a Joint Advisory Committee (JAC) which is made up of representatives of these partners and which meets twice a year. A small number of staff are employed to prepare, implement and review the statutory Management Plan, in conjunction with the partnership.

2.6 Within the Forest of Bowland AONB Management Plan, chapter 19 is devoted to 'Responding to Climate Change' with an overall vision: unpolluted air, soil and water to allow the landscape and wildlife of the AONB to be sustained; reduce CO2 emissions that exceed Government targets; the Forest of Bowland AONB is recognised as a place of best practice in responding to climate change.

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3. General Guidance

3.1 Renewable energy developments can take the form of both heat and power generation:

- ⊗ Electricity can be generated by hydro systems (water), photovoltaics (solar) and by wind turbines.
- ⊗ Heat can be generated via the burning of wood fuel and other biomass products; using anaerobic digestion; solar thermal; and by using underground, water, and air source heat pumps.

3.2 For the purposes of this position statement the following definitions are used:

Technology	Micro	Small scale	Medium scale	Large scale
Wind turbines	25m tall or less to blade tip	25-60m to blade tip	60-90m to blade tip	90m+ tall
Wind farm	single	1-5	6-10 turbines	11+
Hydro power	< 100kW	< 10MW	Over 10MW	Over 10MW
Biomass	household	Household, business or farm based	Over 10MW Electricity not consumed on site	Electricity not consumed on site
Photovoltaics	Household, < 5kW	Household, business or farm based < 10kW	10 - 50kW arrays. Electricity not all consumed on site	Over 50kW Electricity not consumed on site
Anaerobic Digestion	Household or farm based	Cluster of farms, site < 0.5ha	Site over 0.5ha, serving many farms	
Heat Pumps	household	Business or farm based		

3.3 The Forest of Bowland AONB Joint Advisory Committee considers that medium to large scale renewable energy development is not appropriate within the Forest of Bowland AONB (or in locations beyond the boundary where development would affect its setting and character) as it has significant potential to adversely affect the natural beauty of the AONB and to compromise the purpose of the statutory designation.

3.4 However, the Forest of Bowland AONB Joint Advisory Committee considers that micro and small scale renewable energy development may be appropriate within the designated area.

3.5 It is essential that renewable energy is developed in a way that is consistent across local authority boundaries, is in harmony with the landscape and in the interests of those who live and work in it, or visit it for pleasure.

3.6 Obviously some of these developments are considered to be more suitable to the Forest of Bowland AONB landscape than others. However, **this position statement is not intended to discourage the development of any form of micro and small scale renewables within the Forest of Bowland AONB.** In all instances, the acceptability of specific renewables development proposals in landscape terms should be demonstrated by developers through detailed investigation, analysis and careful siting, layout and design to ensure that they are done in a sensitive and appropriate manner.

4. Guidance for micro and small scale renewable energy schemes to be sited within the Forest of Bowland AONB

4.1 The Government's Planning Policy Statement on renewable energy (PPS22) states that as part of a national policy framework "small scale development should be permitted within AONB's provided that there is no serious environmental detriment to the area concerned." In addition the PPS confirms that "planning permission for renewable energy projects should only be granted where it can be demonstrated that the objectives of designation of the area will not be compromised by the development".

4.2 When reviewing applications for micro and small scale renewable energy installations within the Forest of Bowland AONB: our advice is to view any scheme on its own merits. Being sited within, or near to, the Forest of Bowland AONB should not be the sole reason for refusal of micro or small scale renewable energy schemes, unless significant environmental impacts are envisaged.

4.3 This guidance is for micro and small scale schemes only as the Forest of Bowland AONB Joint Advisory Committee will object to all plans to develop medium and large scale schemes.

This guidance is therefore provided for:

- ⊗ Single micro and small wind turbines (up to 60m to blade tip) and small scale wind energy development
- ⊗ Micro hydro schemes (up to 100kW)
- ⊗ Small scale photovoltaics (up to 10kWp array)
- ⊗ Small scale biomass (up to 10MW) and AD systems, and small scale heat pumps

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4.4 Wind turbines

4.4.1 Where appropriate, micro and small scale wind energy development may be accommodated within the Forest of Bowland AONB landscape. Micro scale wind energy development particularly in locations where there would be a strong functional relationship with existing development such as farm buildings and views of it would be constrained by the topography is likely to be the most appropriate form of wind energy development for the AONB. Small scale wind farms may be appropriate for the AONB provided that they do not cause unacceptable harm to the natural beauty and special quality of the landscape. In all instances, micro and small scale wind energy development should:

- ⊗ be of a form and design that is appropriate for the landscape and visual characteristics of the location
- ⊗ be an appropriate scale for the location
- ⊗ not be sited on a skyline or close to a prominent feature or within the setting of important historic features or landscapes
- ⊗ not have significant cumulative impacts with other operational or consented wind energy development

4.4.2 The Forest of Bowland AONB Landscape Character Assessment and the Landscape Sensitivity to Wind Energy Development in Lancashire study should be consulted when assessing suitable sites.

4.4.3 Environmental impact assessments will usually be required if the application is for more than two turbines or if height exceeds 15m.

4.5 Micro hydro

4.5.1 The Forest of Bowland AONB has relatively high rainfall, fast flowing streams and rivers and a history of water power. This suggests that there may be some potential for micro hydro (less than 100kW) and smaller scale (up to 3MW) electricity generation within the Forest of Bowland AONB. A feasibility study prepared by Inter Hydro Technology will report in summer 2011 on the most favourable sites.

4.5.2 A micro hydro scheme would be likely to be acceptable in landscape terms where it appears as a minor, isolated feature within a large scale landscape or in locations where there is a direct relationship with existing development such as settlements and access routes.

4.5.3 Buildings and other associated developments should be of an appropriate scale, be carefully sited and be sympathetic to the local vernacular. Where existing historic structures are to be used and/or the site is in a designated Conservation Area, advice should be sought from the local planning authority's building conservation officer. Buildings, access roads, water transporting systems and power lines should be carefully sited.

4.5.4 Whilst mitigation of landscape and visual impacts is encouraged, care should be taken to ensure that screen planting, for example, does not highlight the development in an open landscape.

4.5.5 Environmental impact assessments will be required for schemes generating over 500kW, and consents from the Environment Agency must be obtained in all cases.

4.6 Biomass

4.6.1 Business and domestic scale biomass systems can normally be assimilated into existing buildings and as such may not require planning consent. New buildings housing biomass systems will require planning permission, and should be of an appropriate scale, be carefully sited and constructed in a vernacular style. Where existing historic structures are to be used and/or the site is in a Conservation Area, conservation advice should be sought from the local planning authority's building conservation officer.

4.6.2 Systems utilising locally sourced woodfuel can be seen as having a positive impact on the local landscape as they are generating a supply for wood products from positively managed woodlands.

4.6.3 Whilst mitigation of landscape and visual impacts is encouraged care should be taken to ensure that screen planting for example does not highlight the development in an open landscape.

4.6.4 Environmental impact assessments will be required if the site exceeds 0.5 hectares.

4.7 Photovoltaics and Solar Thermal

4.7.1 Small scale photovoltaics (PVs) are now within permitted development for residential buildings.

4.7.2 Small scale installations, usually up to 10kW arrays, on commercial, farm or community buildings that have minor landscape and visual impacts should not normally be objected to within the Forest of Bowland AONB. Careful siting can minimise the visual impact of arrays, and panels can be integrated into the building design, especially on new build properties. Planned installations on historic buildings, or within conservation areas, should seek advice from the local planning authority's building conservation officer.

4.7.3 Solar farms, or large numbers of PV arrays set up at ground level or on large scale farm roof systems, which may or may not move to track the sun, and which normally export electricity generated away from the site, will not normally be suitable for installation within the Forest of Bowland AONB as reflection of the sun's rays is likely to make such installations highly visible, detracting from the natural landscape character of the area.

4.7.3 Solar thermal systems, which heat domestic hot water using flat panes or evacuated tubes mounted on a roof, are usually classed as permitted development. Larger scale schemes heating water for use on site, for example for dairy farms, will normally be considered to be appropriate within the AONB and will not be objected to by the JAC provided they are of an appropriate scale, are not visually intrusive and suitable mitigation of landscape and visual impacts are provided which ensures the natural beauty of the area is not adversely affected.

4.8 Anaerobic Digestion

4.8.1 Anaerobic Digestion (AD) plants, serving a single or small number of farms, may be sited within the Forest of Bowland AONB provided that the development can be incorporated within the farmstead, is of an appropriate scale, is

not visually intrusive, is constructed from appropriate materials and suitable mitigation of landscape and visual impacts is provided which ensures the natural beauty of the area is not adversely affected.

4.8.2 It is important that the level of traffic associated with the installation does not markedly increase vehicle movements to and from the site, and that land use in the proximity is not altered to 'feed' the plant with crops such as maize which are not normally cultivated in the area.

4.9 Heat Pumps

4.9.1 Heat pumps, using ground or water, are usually classed as permitted development for a residential dwelling. However air source pumps do currently require planning permission.

4.9.2 If purpose built associated buildings are required, eg to house the pumps, these may require planning permission. These developments should be of an appropriate scale, not be visually intrusive, and be constructed from appropriate materials. Suitable mitigation of landscape and visual impacts must be provided to ensure the natural beauty of the area is not adversely affected, and any such developments would normally be deemed appropriate to the AONB if they are within the area of an existing development, and use traditional materials in the vernacular style.

4.9.3 If extensive excavation is required for a ground source it is important that both historical and biodiversity experts are consulted as to the suitability of the area, and in any case that excavated areas are sensitively restored.

5. Additional advice, contacts and guidance for the siting of renewable energy developments within the Forest of Bowland AONB

5.1 General advice from the Forest of Bowland AONB is to locate developments:

- ✘ where they are appropriate to the landscape character type that they are situated within
- ✘ where they would not be a dominant feature in the landscape
- ✘ well back from upland edges or scarps
- ✘ away from viewed skylines, summits, prominent landforms and other distinctive landscape features
- ✘ away from remote and wilder areas
- ✘ where they make sympathetic use of existing buildings, tracks and other infrastructure
- ✘ where there would be no significant cumulative impacts with similar or other developments
- ✘ where there are opportunities to mitigate landscape and visual impacts and compensate for any unavoidable losses
- ✘ away from key amenity and heritage assets
- ✘ where they respect and are sensitive to important cultural associations
- ✘ away from public view – i.e. roads, footpaths or public open space – if at all possible
- ✘ within existing built areas – e.g. farmstead or settlement – where a strong functional relationship would be established rather than in isolated locations away from other built structures

5.2 The exact physical siting of micro renewable energy technologies on domestic, community, farm or business premises; be it hydro, solar or wind power, will determine its efficiency. For example, solar thermal panels and PVs work best on south facing roofs; whilst wind power will be maximised in more exposed and open sites. However, within the AONB, the distinctive natural beauty, landscape tranquillity, highly scenic views, biodiversity and historical features are all important elements of landscape quality and the impact on these will need to be balanced against maximising the efficiency of an installation.

5.3 Specialist advice and guidance from the Environment Agency, Lancashire County Council, English Heritage and local authority planning officers should be sought as appropriate. In addition the AONB's own Landscape Character Assessment should be used to identify the landscape character type/area of the location and its key features/forces for change and to note and act on any limitations listed within the management guidance for that classification.

5.4 A Landscape Impact Assessment may be required for some developments, and a consideration of other potential sites and opportunities for mitigation and compensation will be required as part of any application.

5.5 The Forest of Bowland AONB Manager, and Lancashire County Council's Landscape Unit may be contacted for advice at the addresses below.

5.6 In addition, the following guidance has been adopted by the grants panel of the Forest of Bowland AONB's Sustainable Development Fund. It is suggested that this stance is also adopted by planning authorities when viewing planning applications for small scale renewable energy projects within the AONB.

- ⊗ Ensure all renewable energy technologies are investigated so that the most appropriate system is installed to meet the needs of the applicant and the specific location. Technologies should also be quality assured by the Microgeneration Certification Scheme as this ensures quality products and installation, and provides eligibility for the Feed in Tariff and the Renewable Heat Incentive scheme.
- ⊗ Evidence should be provided to show that energy efficiency of the development has already been maximised – via insulation, energy efficient appliances, and waste minimisation measures
- ⊗ Monitoring of the installation should be encouraged in order to evaluate its efficiency – e.g. by recording the energy generated and calculating any savings made

5.7 In addition to this position statement the Forest of Bowland AONB will also be including examples of good practice in the siting of photovoltaics and solar thermal roof panels as part of its forthcoming Design Guide.

Contact Details:

Forest of Bowland AONB
The Stables
4 Root Hill Estate Yard
Dunsop Bridge
Clitheroe, Lancashire
BB7 3AY
01200 448000

Lancashire County Council
Landscape Unit
Senior Landscape Architect
Steven Brereton
Steven.brereton@lancashire.gov.uk
01772 534135

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NCA 33: Bowland Fringe & Pendle Hill Key Facts & Data

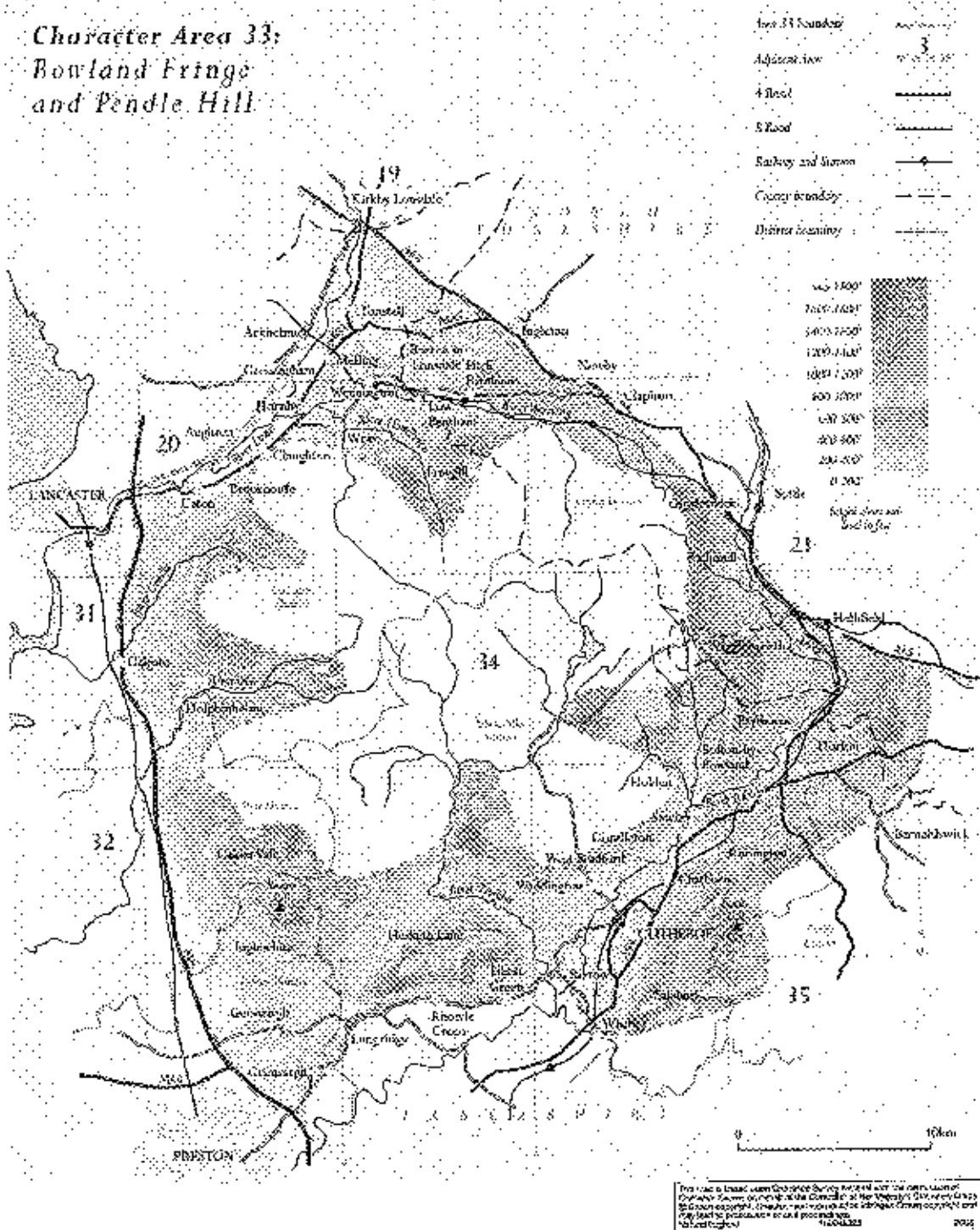
This document provides a summary of environmental data collected for the NCA. It is intended to help guide anyone making decisions that may affect the local environment. The information contained here is collated from the best available national datasets. It is recognised local information may provide additional detail and that this will not always

correspond to national data. If you have any questions about the Key Facts and Data, please contact: ncaprofiles@naturalengland.org.uk. Your feedback will help shape the content of the full NCA profiles, which will be published from September 2012 onwards.

Map of Bowland Fringe & Pendle Hill

Total Area:

74,090 ha



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The above map is provided from the Countryside Character Area description pending completion of NCA maps. It is recognised that the content of this map may now be out of date in some cases and is included for general reference only. New maps will include updated content and be provided within the full NCA profiles, due to be completed by 2013

1. Landscape and Nature Conservation Designations

52% of the NCA (38,175 ha) falls within the Forest of Bowland Area of Outstanding Natural Beauty (AONB). The Forest of Bowland AONB Management Plan provides a policy framework and identifies a 5-year programme of actions (April 2009 - March 2014) to help guide the work of the AONB partnership organisations towards achieving the purpose of this plan - to conserve and enhance the natural and cultural beauty of the Forest of Bowland landscape. The management plan can be downloaded at:

http://www.forestofbowland.com/cons_managementplan

Less than 1% of the NCA (181 ha) falls within the Yorkshire Dales National Park. Please see NCA 21 Yorkshire Dales for further details.

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Designated Site(s)	Area in NCA	Proportion of NCA
International	n/a	n/a	0 ha	0%
European	Special Protection Area (SPA)	Bowland Fells SPA	1,453 ha	2%

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	Special Area of Conservation (SAC)	Calf Hill and Crag Woods SAC; North Pennine Dales Meadows SAC	41 ha	<1%
National	National Nature Reserve (NNR)	n/a	0 ha	0%
National	Site of Special Scientific Interest (SSSI)	A total of 28 sites wholly or partly within the NCA	2,267 ha	3%

Source: Natural England (2011)

Please Note: (i) Designated areas may overlap (ii) all figures are cut to Mean High Water Line, designations that span coastal areas/views below this line will not be included.

Within the NCA a total of 2,267 ha is under European or National Designation.

The Bowland Fells SPA and Bowland Fells SSSI comprise the same area, and 9% of this area falls within the NCA.

The North Pennine Dales Meadows SAC comprises 3 SSSI meadows 1 of which (Langcliff Cross Meadow SSSI) is wholly within the NCA, part of Bell Sykes Meadows SSSI is also within the NCA.

Calf Hill & Crag Woods SSSI and SAC comprise the same area and all but the southern tip of Calf Hill Wood is within the NCA.

There are 347 Local sites in Bowland Fringe and Pendle Hill NCA covering 5,139 ha which is 7% of the NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at:
<http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm>
- Details of Local Nature Reserves (LNR) can be searched
http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp
- Maps showing locations of Statutory sites can be found at
<http://magic.defra.gov.uk/website/magic/> -select 'Rural Designations Statutory'

1.1.1 Condition of designated sites

SSSI Condition Category	Area in NCA	Percentage of NCA SSSI Resource
Unfavourable declining	15 ha	<1%
Favourable	591 ha	26%
Unfavourable no change	358 ha	16%
Unfavourable recovering	1,298 ha	57%

Source: Natural England (March 2011)

- Details of SSSI condition can be searched at:
<http://www.sssi.naturalengland.org.uk/Special/sssi/reportIndex.cfm>

2. Landform, Geology & Soils

2.1 Elevation

The NCA is a transitional landscape which wraps around the upland core of the Bowland Fells. Elevation ranges within this NCA from 9m above sea level to 577m.

Source: Natural England 2010

2.2 Landform & Process

This is an undulating and rolling landscape with local variation created by numerous river valleys and by the moorland outliers of Beacon Fell (266m), Longridge Fell (350m) and Pendle Hill (577m) on the south side of the area.

Source: Bowland Fringe & Pendle Hill Countryside Character Area description

2.3 Bedrock Geology

The transition from plain to fell landscape is rapid and reflects the existence of a substantial boundary fault which separates the soft Permo-Triassic rocks from the harder Carboniferous rocks. In the south where the Brock Valley crosses the area, the coarse-grained sandstones of the Millstone Grit of Bowland give way to the softer calcareous mudstones, with limestone beds of the Carboniferous Limestone. The broad Ribble and Hodder Valleys broadly pick out the less resistant mudstones and limestones from the Millstone Grit rocks which form the fells. Within the valleys, strong moundy outcrops of reef knolls form distinctive landscape features which give the area its special character.

Source: Bowland Fringe & Pendle Hill Countryside Character Area description

2.4 Superficial Deposits

The rapid transition from plain to fell landscape is softened by the presence of thicker glacial deposits around the edge of the upland area. The mouths of the valleys are commonly filled by broad, flat alluvial fans. Ribbons of alluvial sand, gravel and silt follow the courses of these streams. The solid rocks are overlain by a complex of glacial deposits comprising mainly thick tills but with extensive areas of moundy sand and gravel deposited from glacial meltwater. Distinctive

drumlins form a characteristic landscape within the river valleys to the north and east.

Source: Bowland Fringe & Pendle Hill Countryside Character Area description

2.5 Designated Geological Sites

Designation	Number of Sites
Geological Site of Special Scientific Interest (SSSI)	6
Mixed Interest SSSIs	0

There are 25 Local Geological Sites within the NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at
<http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm>

2.6 Soils and Agricultural Land Classification

Poorer quality soils (Grade 4) occur in the higher areas around the Bowland Fells fringe and on the east side of the NCA. The better quality (Grade 3) soils occur around the north south-west and south. There are 8 main soilscape types in this area: Slowly permeable seasonally wet acid loamy and clayey soils, covering 57% of the NCA. Slowly permeable wet very acid upland soils with a peaty surface (15%); Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (6%); Very acid loamy upland soils with a wet peaty surface (6%); Freely draining slightly acid loamy soils (5%); Freely draining

floodplain soils (3%); Loamy and clayey floodplain soils with naturally high groundwater (3%) and Freely draining lime-rich loamy soils (1%).

Source: Natural England 2010

The main grades of agricultural land in the NCA are broken down as follows (as a proportion of total land area):

Agricultural Land Classification	Area in NCA	Proportion of NCA
Grade 1	0 ha	0%
Grade 2	39 ha	<1%
Grade 3	27,540 ha	37 %
Grade 4	36,019 ha	49%
Grade 5	9,773 ha	13%
Non-agricultural	342 ha	<1%
Urban	378 ha	<1%

Source: Natural England (2010)

3. Key Water Bodies & Catchments

3.1 Major Rivers/Canals

The following major rivers/canals (by length) have been identified in this NCA.

River Name	Length in NCA
River Ribble	40 km

River Wenning	21 km
River Hodder	20 km
River Lune	15 km
River Wyre	13 km
River Brock	11 km
River Greta	11 km
River Hindburn	11 km
Tosside Beck	11 km
River Conder	9 km
River Calder	7 km
Leck Beck	3 km
Sabden Brook	<1km

Source: Natural England (2010)

Please Note: other significant rivers (by volume) may also occur. These are not listed where the length within the NCA is short.

13 Rivers flow through the NCA totalling 173 km. The NCA surrounds the Bowland Fells and contains the middle part of rivers that drain the upland area with its steep topography and narrow floodplains.

The northern part of the NCA contains the River Lune and its tributaries the River Hindburn (which drains the northern slopes of the Bowland Fells NCA), the River Wenning (which drains northern slopes of the Bowland Fells NCA and south west parts of the Yorkshire Dales NCA), and the River Greta and Leck Beck (which drain the south west parts of the Yorkshire Dales NCA).

The River Lune itself has its source further north in the uplands of the Cumbria High Fells and Howgill Fells NCAs.

The western part of the NCA contains rivers which drain the western and south west slopes of the Bowland Fells - the River Wyre and its tributaries the Rivers Calder and Brock as well as the River Conder which flows directly to the Irish Sea.

The southern and eastern parts of the NCA contain the River Ribble, which has its source in the Yorkshire Dales NCA, and its tributaries the River Hodder and Tosside Beck which drain the southern and eastern slopes of the Bowland Fells NCA.

3.2 Water Quality

The total area of Nitrate Vulnerable Zone is 43,541 ha, 59% of the NCA.

Source: Natural England (2010)

3.3 Protected Areas

- to be completed in consultation with the Environment Agency (full document only).

3.4 Water Framework Directive

- to be completed in consultation with the Environment Agency (full document only).

4. Trees and Woodlands

4.1 Total Woodland Cover

The NCA contains 4,160 ha of woodland (6% of the total area), of which 1,165 ha is ancient woodland.

Source: Natural England (2010)

4.2 Distribution and size of woodland and trees in the landscape

Extensive areas of predominantly ancient semi-natural woodland are concentrated on the ridges, slopes and valley sides of the many rivers present throughout the area. Woodlands here are dominated by oak, ash and birch with extensive amounts of wych elm and wild gean, especially along the Ribble with alder and willow beside the Brock, Wyre and Calder. Areas of semi-natural woodland are commonly associated with managed estates and parkland. Several large blocks of conifer plantation are present, mainly in the south and north west.

Source Bowland Fringe & Pendle Hill Countryside Character Area description

4.3 Woodland Types

A statistical breakdown of the area and type of woodland found across the NCA is detailed below.

Area and proportion of different woodland types in the NCA (over 2 ha)

Woodland Type	Area in NCA	Proportion of NCA
Broadleaved	1,761 ha	2 %
Coniferous	1,043 ha	1 %
Mixed	994 ha	1 %
Shrub / young trees	177 ha	<1%
Felled/land for prepared planting	176 ha	<1%
Coppice	10 ha	<1%

Source: Natural England (2010)

Area and proportion of Ancient Woodland and Planted Ancient Woodland within the NCA

Woodland Type	Area in NCA	Proportion of NCA
Ancient semi-natural woodland	903 ha	1%
Ancient re-planted woodland (PAWS)	262 ha	<1%

Source: Natural England (2004)

5. Boundary Features & Patterns

5.1 Boundary Features

Medium to small-scale fields are defined by hedgerows with mature hedgerow trees, growth of which is particularly vigorous in the north. Dry stone walls are also common in some areas. Metal railings around estate boundaries are characteristic of the southern and western edges of the NCA.

Source: *Bowland Fringe & Pendle Hill Countryside Character Area description; Countryside Quality Counts (2003)*

5.2 Field Patterns

Principally an area of intricate small-medium scale fields reflecting a long process of piecemeal colonisation and assortment. Ancient (pre 1600) enclosure has widespread survival, but is particularly concentrated to the south. Post Medieval (1600-1850) enclosure patterns, similarly irregular, are the dominant field form in the area. Much of the higher common land and the lower fellsides especially to the west of the Bowland fells remained unenclosed until taken into large rectilinear grazing enclosures under Parliamentary Acts in the 18th and 19th centuries.

Source: English Heritage Historic Profiles; Countryside Character Area description; Countryside Quality Counts (2003)

6. Agriculture

The following data has been taken from the Agricultural Census linked to this NCA.

6.1 Farm Type

This is characteristically a livestock grazing area. In 2009 there were 400 commercial livestock grazing holdings in the LFA (37%) and 159 in the lowlands (15%). There were also 254 dairy holdings (23%), 22 specialist poultry holdings (2%), 10 horticultural holdings (1%) and 7 specialist pig holdings (<1%). Survey data from 2000 to 2009 shows a 29% increase in the number of grazing farms in the LFA whilst grazing farms in the lowlands have decreased by 7% and dairy farms have decreased by 41%.

Source: Agricultural Census, DEFRA (2010)

6.2 Farm Size

There is a fairly even distribution in farm size with, in 2009, 184 (17%) <5 ha, 207 (19%) 5-20 ha, 234 (22%) 20-50 ha, 246 (23%) 50-100 ha and 216 (20%) >100 ha. Between 2000 and 2009 the number of commercial holdings decreased overall by 7% from 1,172 to 1,087. This decrease was across all size bands with the exception of the smallest (<5 ha) and largest (>100 ha) holdings both of which showed a slight increase. (Note: these figures do not include the access that many farms have to common grazing on the moors).

Source: Agricultural Census, DEFRA (2010)

6.3 Farm Ownership

2009: Total farm area = 66,610 ha; owned land = 36,723 ha

2000: Total farm area = 65,786 ha; owned land = 39,016 ha.

In 2009 55% of the total farmed area was owner occupied. Between 2000 and 2009 there has been an increase in the total farmed area of 824 ha (1%) although there has been a slight decrease in the number of holders from 1,860 to 1,657.

Source: Agricultural Census, DEFRA (2010)

6.4 Land Use

The predominant land use in this NCA is grass and uncropped land mainly for sheep and some cattle and pig rearing.

Source: Agricultural Census, DEFRA (2010)

6.5 Livestock Numbers

Sheep are the most numerous livestock type in this landscape (a total of 295,900 in 2009 in comparison to 81,300 cattle and 4,200 pigs).

Between 2000 and 2009 sheep numbers decreased by 90,600 (23%), cattle numbers decreased by 12,300 (13%) and pig numbers decreased by 4,900 (54%).

Source: Agricultural Census, DEFRA (2010)

6.6 Farm Labour

In 2009 the majority of holdings are run by Principal Farmers (1,657) with only 18 Salaried Managers being employed. Between 2000 and 2009 the number of Salaried managers remained static at 18, full time workers decreased slightly from 228 to 225, part time workers increased from 218 to 255 and casual / gang workers decreased from 218 to 104.

Source: Agricultural Census, DEFRA (2010)

Please Note: (i) Some of the Census data is estimated by Defra so will not be accurate for every holding (ii) Data refers to Commercial Holdings only (iii) Data includes land outside of the NCA belonging to holdings whose centre point is within the NCA listed.

7. Key Habitats and Species

7.1 Habitat distribution / coverage

Small to medium sized hay meadows and permanent pasture fields are defined by stone walls immediately adjacent to the Bowland Fells which become hedgerows within valley bottoms and areas around settlements. Mature oak, ash and alder trees are common components of hedgerows. The species rich hay meadows with pignut, yellow rattle, great burnet, ox-eye daisy and lady's mantle provide a splash of colour during the summer and attract large numbers of butterflies. At higher elevations the improved pastures give way to areas of rough grazing and field patterns become more regular, with stone walls predominating. Here, wet rushy pastures are of particular importance for breeding waders such as lapwing, snipe, curlew, redshank and oystercatcher. Extensive areas of predominantly ancient semi-natural woodland are concentrated on the ridges, slopes and valley sides of the many rivers present throughout the area. Woodlands here are dominated by oak, ash and birch with extensive amounts of wych elm and wild gean, especially along the Ribble, with alder and willow beside the Brock, Wyre and Calder. The woodlands on the northernmost side of the Fells are particularly important for their rich assemblage of mosses and lichens. Pied and spotted flycatchers, redstart, tree pipit, tawny owl, great spotted woodpecker and sparrow hawk are all characteristic bird species associated with these woodlands. Numerous rivers and watercourses provide habitats for salmon, brown and sea trout, as well as birds such as kingfisher, dipper, grey wagtail, common sandpiper and oystercatcher. Otters are also present along rivers on the northern side of the Fells. The rivers make a significant contribution to the area together with the Lancaster canal which supports an

interesting array of locally rare aquatic plants such as flowering rush, greater spearwort, white water lily and various pond weeds. A number of reservoirs and disused gravel pits along the Wyre valley are also important as habitat for breeding great crested grebe and wintering wildfowl, whilst the high density of field ponds between Preston and Garstang provide an important habitat for aquatic plants, freshwater invertebrates and amphibians. Formal parkland surrounding modest country houses adds to the intensely managed character of the area. Typically consisting of open grassland with ponds and lakes, scattered trees of oak, ash, sycamore and lime, enclosed by blocks of secondary woodland, the parklands are particularly important for their dead wood invertebrates, mosses and lichens. Several heronries are also present

Source: Bowland Fringe & Pendle Hill Countryside Agency Summary Statements; Forest of Bowland Natural Area Profile

7.2 Biodiversity Action Plan (BAP) Priority habitats

The NCA contains the following areas of mapped priority habitats (as mapped by National Inventories). Footnotes denote local/expert interpretation. This will be used to inform future national inventory updates.

UK BAP Priority Habitat	Area in NCA	Proportion of NCA
Broadleaved mixed & yew woodland (Broad Habitat)	1,791 ha	2%
Upland heathland	1,747 ha	2%
Coastal & floodplain grazing marsh	1,278 ha	2%
Blanket bog	973 ha	1%
Lowland meadows	363 ha	<1%

Purple moor-grass & rush Pasture	351 ha	<1%
Lowland calcareous grassland	132 ha	<1%
Upland hay meadow	129 ha	<1%
Fens	103 ha	<1%
Upland calcareous grassland	92 ha	<1%
Lowland raised bog	82 ha	<1%
Lowland heathland	32 ha	<1%
Lowland dry acid grassland	22 ha	<1%

Source: Natural England (2011)

Maps showing locations of UK BAP Priority Habitats are available at

- <http://magic.defra.gov.uk/website/magic/> select 'Habitat Inventories'

7.3 Key species and assemblages of species

- These are listed in Annex 1 (full document only)
- Maps showing locations of S41 species are available at <http://data.nbn.org.uk/>

8. Settlement and Development Patterns

8.1 Settlement pattern

The settlement pattern is of small villages with isolated houses and farms dotted around the winding country lanes. Many of the smaller villages and hamlets are linear in character and commonly take the form of terraced stone cottages along the main road.

Source: Countryside Character Area description; Countryside Quality Counts (2003)

8.2 Main Settlements

There are many villages dating from the 16th to 18th century, together with hamlets, farmsteads and also country houses and halls set in parkland. The largest settlements within the NCA are: Clitheroe; Longridge; Bentham; Whalley; Caton; Grimsargh; Goosnargh. There are also many small villages and hamlets with populations of <1,000. The total estimated population for this NCA (derived from ONS 2001 census data) is: 55,281.

Source: Countryside Character Area description; Countryside Quality Counts (2003), Natural England (2012)

8.3 Local vernacular & building materials

Isolated stone villages tend to be nestled into the escarpments and are commonly characterised by distinctive becks, greens and mills each with its own unique charm. On higher ground traditional stone barns are commonplace. The predominant building materials are stone and roofs are made of slate or, less commonly, stone flags. There has been some, limited, expansion of villages but this has been done sympathetically using local materials.

Source: Countryside Character Area description; Countryside Quality Counts (2003)

9. Key Historic Sites & Features

9.1 Origin of historic features

The history of the landscape is evident in the long history of piecemeal colonisation reflected in the intricate small-medium scale fields with widespread post medieval and ancient fields, particularly around Preston, and larger rectilinear Parliamentary enclosures. There are many archaeological sites particularly on the moorland fringes and in valleys where agriculture has been less intensive as well as corridors such as the Ribble and Lune valleys which were important routes since

the Roman period, the latter with small motte and bailey castles. A small number of industrial terraced settlements, eg Oakenclough, Dolphinholme and Galgate, are characteristic of the Calder Vale while lead mining remains and derelict lime kilns are found in the Ribble valley. Aspects of history likely to be most evident to the general public include, Stonyhurst College, Gledstone Hall, Clitheroe Castle, large country houses set in their own parkland, such as Abbeysted, Ellel Grange, Waddow Hall, Bolton Park and Leagram Hall and smaller landscape features such as stone bridges.

Source: Countryside Quality Counts Draft Historic Profile, Countryside Character Area description

9.2 Designated Historic Assets

This NCA has the following historic designations:

- 3 Registered Parks and Gardens covering 95 ha
- 0 Registered Battlefield/s covering 0 ha
- 39 Scheduled Monuments
- 1274 Listed Buildings

Source: Natural England (2010)

- More information is available at the following address:
<http://www.english-heritage.org.uk/caring/heritage-at-risk/>
- <http://www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/>

10. Recreation and Access

10.1 Public Access

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6% of the NCA 4,728 ha is classified as being publically accessible.

The table below shows the breakdown of land which is publically accessible in perpetuity:

Access Designation	Area in NCA	Proportion of NCA
National Trust (Accessible all year)	0 ha	0%
Common Land	1,371 ha	2%
Country Parks	110 ha	<1%
CROW Access Land (Section 4 and 16)	4,728 ha	6%
CROW Section 15	540 ha	1%
Village Greens	7 ha	<1%
Doorstep Greens	0 ha	0%
Forestry Commission Walkers Welcome Grants	100 ha	<1%
Local Nature Reserves (LNR)	18 ha	<1%
Millennium Greens	0 ha	0%
Accessible National Nature Reserves (NNR)	0 ha	0%
Agri-environment Scheme Access	3 ha	<1%
Woods for People	197 ha	<1%

Sources: Natural England (2011)

Please Note: Common Land refers to land included in the 1965 commons register; CROW = Countryside and Rights of Way Act 2000; OC and RCL = Open Country and Registered Common Land.

10.2 Rights of Way

There are 1,537 km of Public Rights of Way at a density of 2 km per km².

There are 1 National Trails within NCA. 19 km of the Pennine Bridleway falls within this NCA.

Sources: Natural England (2010)

11. Experiential Qualities

11.1 Tranquillity

Based on the CPRE map of Tranquillity (2006) the lowest scores are around the main settlements and road routes.

A breakdown of tranquillity values for this NCA are detailed in the table below:

Tranquillity	Tranquillity Score
Highest Value within NCA	127
Lowest Value within NCA	-78
Mean Value within NCA	11

Sources: CPRE (2006)

- More information is available at the following address:
<http://www.cpre.org.uk/what-we-do/countryside/tranquil-places/in-depth/item/1688-how-we-mapped-tranquillity>

11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that the main points of intrusion are around the urban areas of Clitheroe and Longridge, the M6 corridor and the main routeways A59 and A65. A breakdown of intrusion values for this NCA are detailed in the table below.

Intrusion Category	1960s	1990s	2007	Percentage change (1960s-2007)
Disturbed	8%	21%	23%	15%
Undisturbed	92%	79%	76%	-16%
Urban	<1%	<1%	<1%	<1%

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are an increase in intrusion particularly along the M6 corridor and around Longridge, Clitheroe and the A59

- More information is available at the following address:
- <http://www.cpre.org.uk/resources/countryside/tranquil-places>

12 Data Sources

- *Forest of Bowland Natural Area Profile, Natural England (English Nature)*
- *Bowland Fringe and Pendle Hill Countryside Character Description, Natural England (Countryside Commission/Countryside Agency 1998/1999)*

- *Countryside Quality Counts, Natural England (Countryside Agency 2003)*
- *Agricultural Census June Survey 20002009, Defra (2010)*
- *Intrusion Map, CPRE (2007)*
- *Tranquillity Map, CPRE (2006)*
- *Draft Historic Profiles, English Heritage (2004)**
- *For further information on Natural England data sources please see the [Key facts and data interpretation note](#)*

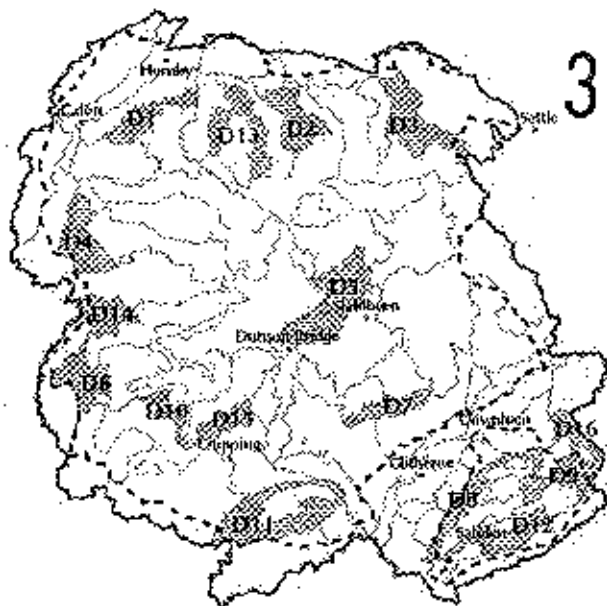
Please note all figures contained within the report have been rounded to the nearest unit. For this reason proportion figures will not (in all) cases add up to 100%. The convention <1 has been used to denote values less than a whole unit.

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Front Cover: Looking west towards Langdon Beck, Winter (c) Charlie Hadley

LANDSCAPE CHARACTER TYPE D: MOORLAND FRINGE



Key Characteristics



D: MOORLAND FRINGE

CHARACTER ASSESSMENT

Location

- 1.1.1 The Moorland Fringe Landscape Character Type occurs in several locations throughout the Study Area and on the Pendle Hill outlier. This Landscape Character Type usually forms the setting for either the Unenclosed Moorland Hills (B) or Enclosed Moorland Hills (C) Landscape Character Types.

Landscape Character Description

- 1.1.2 The transitional rolling enclosed landscape of the Moorland Fringe skirts the edges of the Moorland Hills, usually at an elevation of more than 200m, and links the upland to the lowland landscape. There is an increasing impact of human activity here, with more dry stone walls, improved pastures, scattered farmsteads and stone out-barns.
- 1.1.3 The Moorland Fringe is still largely gritstone, although there are small but significant areas of limestone in the Hodder Valley. The rolling landscape provides 'in-bye' pasture for sheep and some cattle, and their movements mark the seasons of the year. Traditional meadows provide rich habitats, and the patches of heather moorland, occasional windswept trees and small woodlands offer variety in the texture of these lower hills. Damp pastures are colonised by wading birds in the spring and early summer, when the calls and sights of curlew and lapwing dominate the scene. Hares are also relatively common in these areas.
- 1.1.4 Small landscape features such as sheepfolds, tramways and tracks, quarries, mines, field barns and stiles provide local distinctiveness and signs of a more industrial past within a still expansive and atmospheric landscape. Farmsteads are isolated, often strung along a track following a contour of the hill, and drystone walls still form the majority of field boundaries, with distinctive through and coping stones creating strong patterns in the landscape, and reflecting the underlying geology. The distinctive calls of wading birds including lapwing, curlew, snipe and redshank

contribute to recognisable sense of place. There are still dramatic open views afforded from these flanks of the fells – towards the villages and valleys of the lowlands, and often featuring reservoirs and parkland in the foreground.

Key Environmental Features

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Physical

- 1.1.5 The fringes of moorland areas are transitional enclosed landscapes between the inhospitable moorland fells and the more intensively farmed land of the lowlands. The Moorland Fringes are underlain by a combination of rocks of the Millstone Grit Series and limestone. The solid geology is overlain by soils whose thickness varies according to elevation and topography; the gentler, more sheltered slopes and broad terraces above the valleys have a thicker covering of soils than the moorland summits. This Landscape Character Type occupies the high ground fringing the main moorland blocks, typically at an altitude of between 215 and 250 m above sea level, sometimes extending to 300m or above. Little Mearley Clough, on the steeply sloping western side of Pendle Hill (which falls partly within this Landscape Character Type) is designated as a SSSI for its considerable geological interest. It provides excellent exposure of rock layers originally laid down during the Namurian period of geological history about 320 million years ago. It has been proposed as the standard for this interval of geological time and is thus a site of National importance.

Ecological

- 1.1.6 The land within this Landscape Character Type which remains as unimproved agricultural grassland is extremely valuable for nature conservation and, with the moorlands, forms an intimate part of the rich mosaic of upland habitats within the AONB. Manchester Treble-bar, and a rare spider, *Clubiona norvegica*, have both been recorded on Caton Moor. Of the drier calcareous meadows, the few which are traditionally managed to produce a summer hay crop, support a range of characteristic plants including lady's mantle, sneezewort and adder's tongue. Myttons Meadows (approximately 1km to the north-west of Slaidburn) are designated as a SSSI because they represent an example of traditionally managed, species-rich meadow in Lancashire. Where parts of the in-byre land are still undrained, moisture loving plants such as marsh marigold, yellow iris, ragged robin and marsh thistle thrive. Traditionally managed meadows also provide feeding

grounds valuable for twite, while the wet rushy pastures support nationally important populations of birds such as curlew, redshank, lapwing and snipe. Upland rushy pastures were formerly hay meadows which provided a valuable habitat for breeding waders. Acidic grasslands are also important for the survival of several upland bird species. The lower slopes of the moorland fringes show a gradual transition to the verdant grasslands of the Undulating Lowland Farmlands. Bright green 'improved' pasture fields are a feature of the landscape. Within this landscape, flushes, fens, streams and roadside verges also provide key ecological habitats.

Cultural and Historical

- 1.1.7 The hillside areas, which are set above the densely wooded valleys and below the exposed summits of the open moors, have a long history of land use and settlement. The comparatively small size of some land holdings results from the system of land inheritance whereby land was divided equally between sons. On good farmland this has created a landscape of scattered farmhouses in relatively close proximity. A large number of farmhouses are distinctive 'laithe houses' which were part house, part stall/hay loft. In places, vaccaries (large, open areas which were used to graze livestock and were created by feudal landowners to make economic returns on their 'waste's' beyond the boundaries of the Deer Parks) are also features of the Moorland Hills. The tenancies of the vaccaries were often held by the same families for many years and were later broken up into smaller holdings for rent. Vaccaries were primarily used in the 13th to 15th centuries. The pace of enclosure grew during the 16th and 17th centuries and continued as a result of the Parliamentary Enclosure Acts of the 18th and 19th centuries. Whilst some may have an ancient origin, possibly dating back to the prehistoric period, the network grew from industrial pressures and the need to transport finished goods and raw materials between urban centres. The packhorse ways associated with the transport of salt, lime and wool, form particularly distinctive features of the landscape. Recent land use has focused upon sheep grazing; most farms have rights for summer grazing on the open moorland which forms an integral part of the hill farming system. The land has traditionally been used as in-bye land for winter grazing and to make hay in the summer to feed livestock through the winter months.

1.1.8 The lower gentler slopes comprise older enclosures distinguished by their small size and irregular shape. On the higher slopes and steeper areas the later Parliamentary Enclosures are represented by large regular rectangular fields enclosed by robust walls. In the late 20th century, big bale silage replaced hay making and many of the upland fields were improved by drainage and reseeded to enhance productivity. Changes in farming practices ensure that damp pastures and hay meadows are now rare. With the decline in upland farming, more marginal farms have been abandoned and the fields taken over by rushes. Increasingly, farmers are seeking to diversify to supplement falling incomes. Diversification (in the 18th and 19th centuries) is evident in occasional weavers' cottages which incorporated a weaving workshop. There is good preservation of archaeological sites in these marginal locations as a result of the non intensive agricultural practices adopted.

Development, Settlement and Buildings

- Isolated stone farmsteads which are usually constructed from gritstone (the local vernacular material);
- A network of narrow, winding roads, often at the foot of slopes;
- General absence of hamlets or villages;
- Other built elements within this landscape include stone field barns and walls.

Landscape Character Areas

Landscape Character Areas within this Landscape Character Type include:

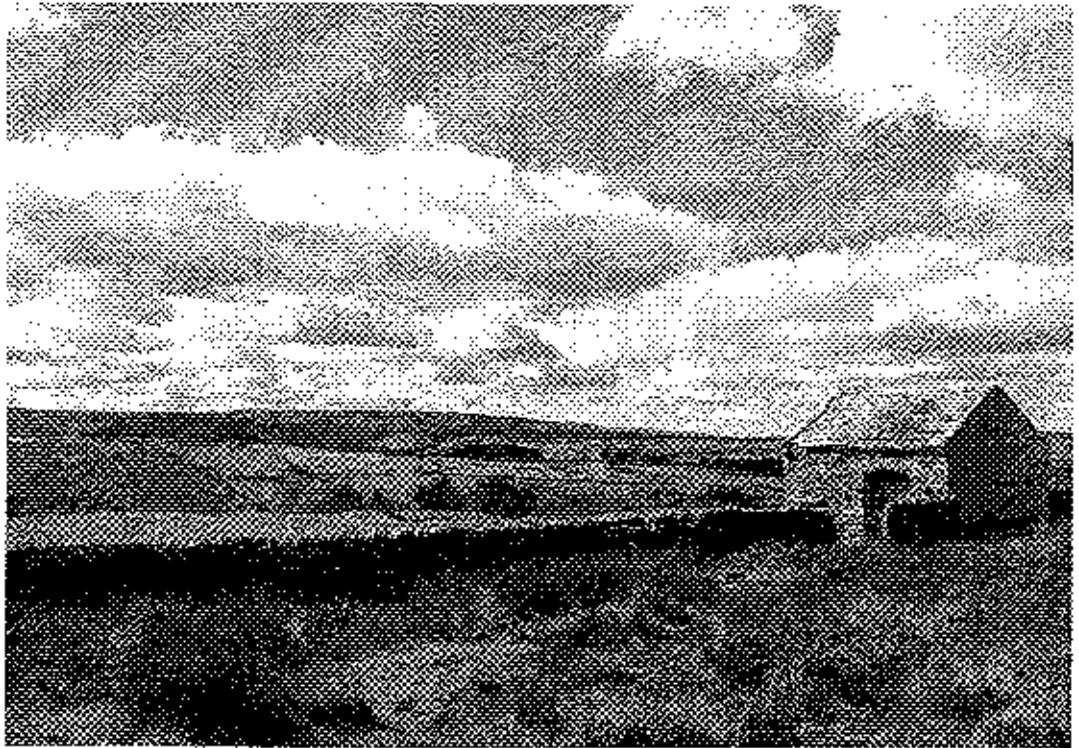
D1 Caton Moor	D12 Upper Sabden Valley
D2 Tatham	D13 Park House
D3 Kettlebeck	D14 Abbeystead
D4 Hare Appletree	D15 Wolf-Burnslack
D5 Beatrix to Collyholme	D16 Middop
D6 Nicky Nook	
D7 Moorcock	
D8 Pendleton	
D9 Wheathead	
D10 Bleasdale	
D11 Longridge	

D1: Caton Moor



- Open views southwards towards the wind farm on Caton Moor Enclosed Moorland Hills, which is a landmark;
- Extensive, open, panoramic views northwards across the wide floodplain of the River Lune. Views are, however, interrupted in places by patches of woodland within adjacent areas of Undulating Lowland Farmland;
- The distinctive aerial ropeway and associated metal pole structures is a distinctive feature within this area, which contributes to an instantly recognisable sense of place. The ropeway is still used to transport shale to Claughton brickworks associated with the nearby Claughton Moor quarries;
- Visible steps in the landscape where moorland has been quarried for clay to make bricks (at Claughton Moor quarries)

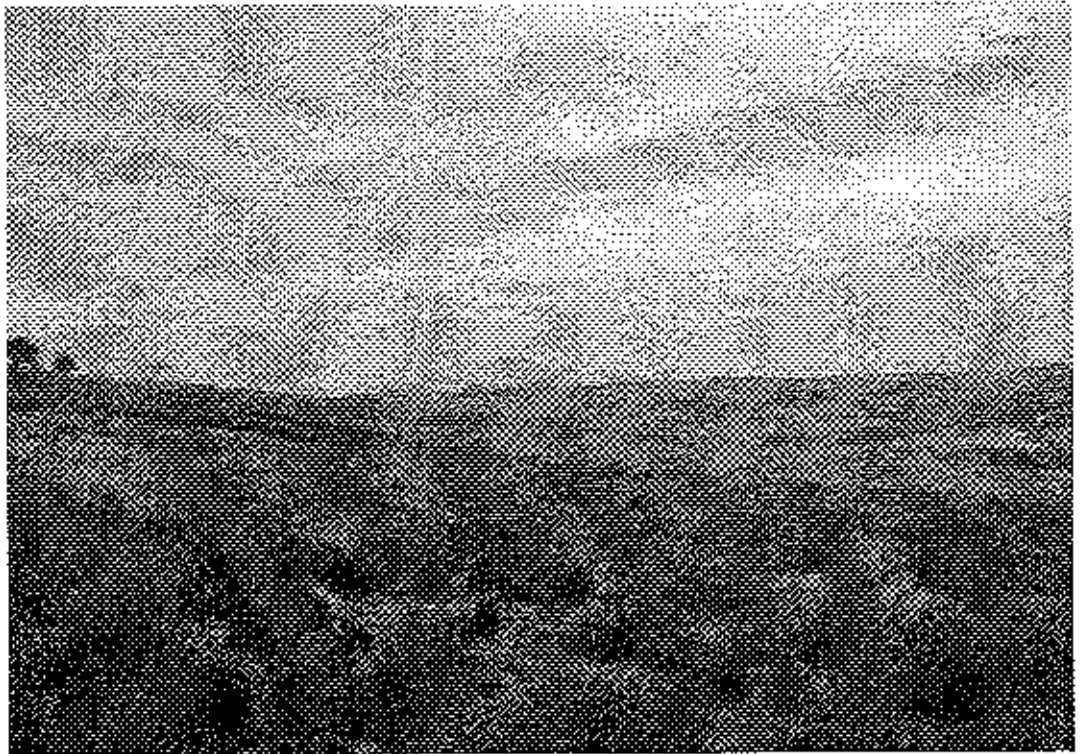
D2: Tatham



- Open views eastwards towards the Great Stone of Fourstone within Croasdale to Lythe Landscape Character Area;
- Traditional stone field barns are landmark features within views across this area;
- A network of minor roads cross the area, running in an east-west direction, providing access to this area and introducing a source of noise and movement;
- Plantation woodland near Bank End brings regularity to the landscape and introduces a recognisable landscape feature within views;
- A network of gritstone walls contributes to recognisable landscape pattern;
- The sheep folds (neat circular stone wall enclosures) at the edge of Lythe Fell, by Green Syke contribute to distinctive landscape pattern;
- Visual contrast within views between the pattern and sense of enclosure of the Moorland Fringe and more open landscapes of the adjacent Unenclosed Moorland Hills

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D3: Kettlebeck



- Open views north-eastwards towards the distinctive rolling topography of the adjacent drumlin landscapes;
- Open views northwards towards Ingleborough and other peaks within the Craven Dales;
- Relatively strong sense of openness;
- Windswept trees are a key feature of certain locations within this area;
- Keasden and Clapham commons are key landscape features, with their associated sense of openness, unfenced roads and distinctive pattern of farmsteads

D4: Hare Appletree



- Small belts of linear woodland contribute to an intermittent sense of enclosure, however there is also a relatively strong sense of openness within much of the landscape;
- Jubilee Tower is landmark feature on the horizon within views eastwards;
- From higher points within this area, such as Quernmore Brow, panoramic, open views westwards across lower undulating farmland towards Morecambe Bay and Black Combe (within the Lake District) can be gained;
- Low stone walls, hedgerows and single deciduous trees contribute to landscape pattern;
- The traditional field barn on Quernmore Brow is also a key landscape feature;
- Large skies and wide panoramas are typical of this area;
- Evidence of traditional vaccaries

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D5: Beatrix to Collyholme



- The rocky outcrop of Knot or Sugar Loaf disused quarry is a distinctive landscape feature within this character area;
- Belts and patches of deciduous and coniferous woodland provide an intermittent sense of enclosure within this area;
- Dramatic open views into the Lower Hodder Valley from the western edges of the area contribute to recognisable sense of place;
- Pockets of mature single deciduous trees, such as those close to Beatrix Farm, contribute to landscape pattern;
- The dilapidated field barn at Back of Hill is also a landscape feature;
- The landscape is incised by a network of cloughs and sykes which add variety and texture to the landscape;
- Sled tracks (relating to past quarrying and peat cutting activities) are a key historic landscape feature on Dunsop and Burn Fells, which are still visible today, set against the smooth moorland backdrop;
- Beatrix hamlet (an ancient settlement, which is older than Dunsop Bridge), is a feature of the lower end of the valley;
- Hedgerows are a feature of the landscape in places (for example at Burn House)

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D6: Nicky Nook



- Panoramic open views westwards across the Fylde Plain towards Morecambe Bay and eastwards towards the dramatic rising backdrop of Bowland Fells (Harrisend Fell) to the east;
- Jubilee Cairn (a circular stone tower built to commemorate Queen Victoria's Golden Jubilee) and the tarn on Nicky Nook are landmarks within views across the area, which contribute to recognisable sense of place and orientation;
- The expanses of water within Grizedale Lea and Barnacre reservoirs, which have an engineered character, provide visual contrast to the surrounding patchwork of roughly grazed fields;
- This area has a long history of estate management, which is reflected in the colour of landscape features, such as gates, and other land management techniques;
- Pheasant shooting also has a significant influence on the management of the area;
- The landscape is delineated by a network of hedgerows and drystone walls;
- The distinctive calls of snipe, curlew, oystercatcher, lapwing, redshank and the movement of flocks of starlings contribute to recognisable sense of place

03/02/2018

D7C Moorcock



- Relatively strong sense of enclosure provided by patches of woodland;
- Open views northwards to Waddington Fell and southwards towards Pendle Hill (across Clitheroe urban area), with Pendle Hill as a backdrop

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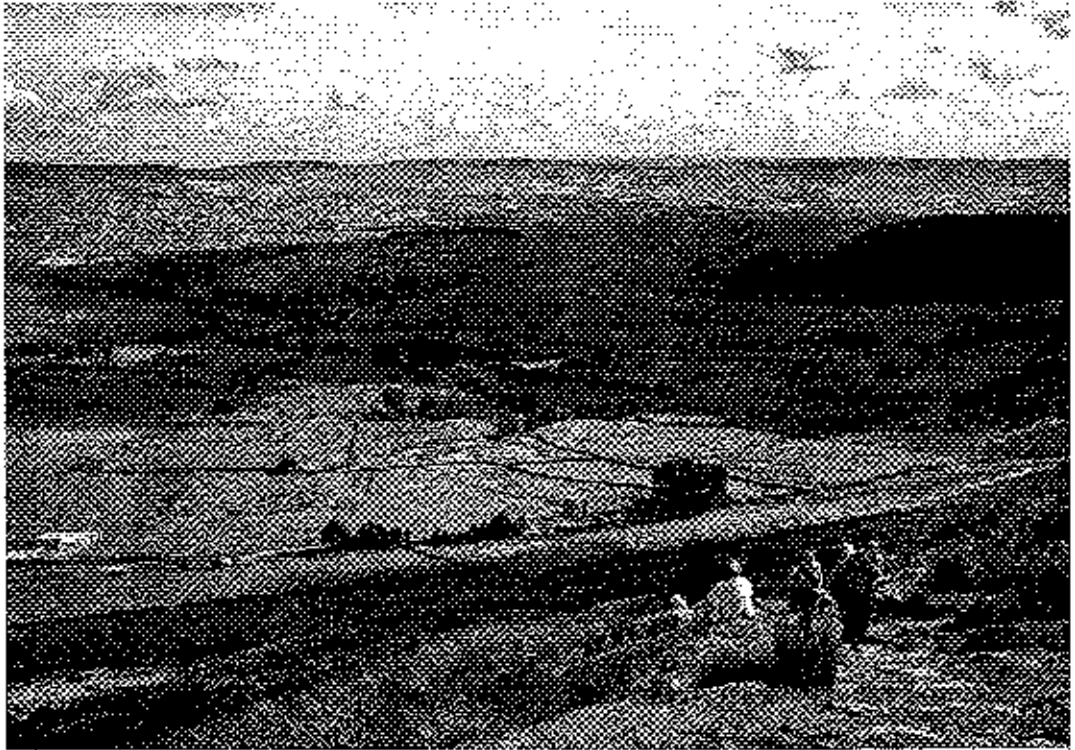
D8: Pendleton



- Open views northwards across the Ribble Valley, with its patchwork of deciduous trees and hedgerows;
- This area provides the setting to Pendle Hill (Unenclosed and Enclosed Moorland Hills) and is the foreground landscape seen within many views to the area from surrounding landscapes to the north;
- Minor road corridors tend to be lined with stone walls and hedgerows;
- 'Spring line' farmsteads are also a key feature of this area

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D9: Wheathead



- Patchwork of pastoral fields delineated with stone walls;
- Traffic on Black Moss Road and Wheathead Lane introduce a source of noise and movement, however the overall sense of tranquillity and remoteness is strong;
- Dramatic views southwards towards the expanses of water within Lower Ogden and Lower Black Moss reservoirs, against a backdrop of patches of coniferous woodland

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D10: Bleasdale



- This area has a long history of estate management (encompassing the Bleasdale and Claughton estates), which is visible within several landscape features, for example, the colour of gates and signs;
- Distant sense of enclosure within this landscape, which is provided by the backdrop of surrounding Moorland Hills to the north;
- Patches of mixed and coniferous woodland provide an intermittent sense of enclosure;
- Single deciduous trees and a network of stone walls and hedgerows at field boundaries contribute to recognisable landscape pattern;
- A network of surfaced and unsurfaced tracks cross the Bleasdale Estate;
- On the Bleasdale Estate, beech hedgerows along roadsides and surface tracks are recognisable landscape features;
- The drystone walls within this area comprise rough blocks of varying shapes and sizes, which usually have two or three courses of through stones, and are generally higher than within other Landscape Character Areas;
- Isolated traditional stone farmsteads are dotted throughout the landscape and are often associated with mature deciduous trees;

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- A series of stream corridors and stone bridges, such as the Packhorse bridge crossing the River Brock, are key landscape features;
- Activity associated with pheasant, partridge and duck shoots has an influence on this landscape;
- Bleasdale circle, surrounded by mature trees, is also a landmark feature within views across the landscape;
- The Bleasdale 'bowl', formed by the hills around the headwater of the River Brock, Fairsnape, Oakenclough Fell and Beacon Fell, and centred on the village of Bleasdale, with its traditional stone church is a key landscape feature within this area;
- The rising mass of Beacon Fell dominates the horizon in views southwards across the area;
- Road corridors are generally lined with walls and/or hedgerows

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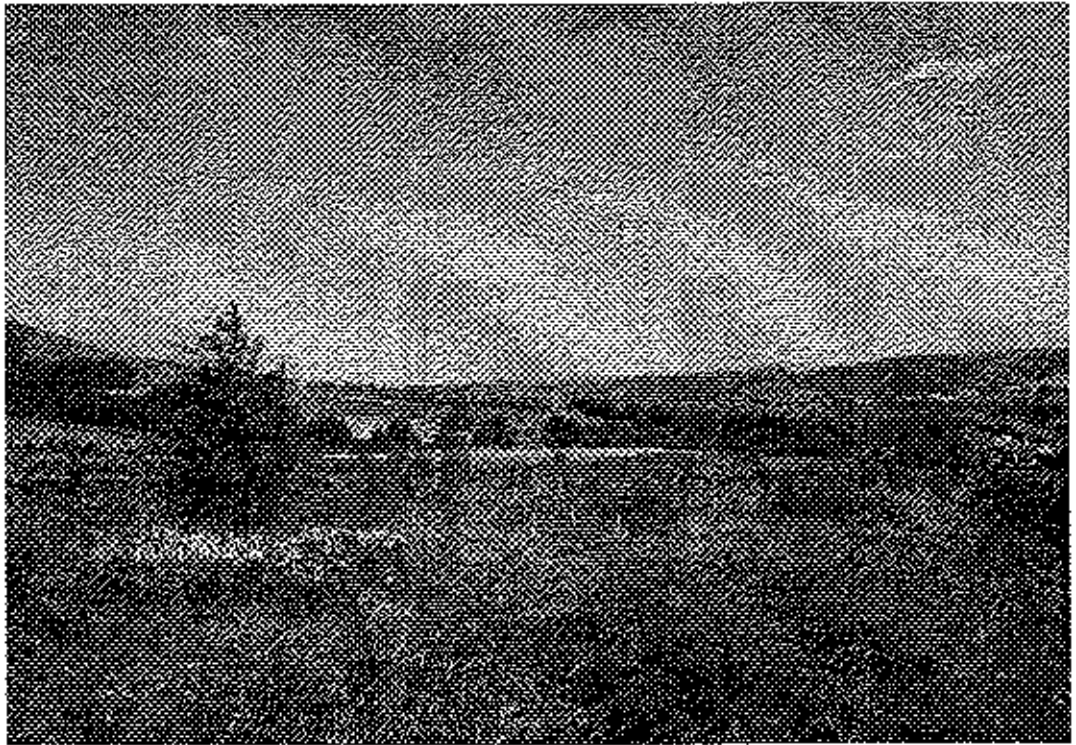
D11: Longridge



- This area provides the northern setting for Longridge Fell and is therefore the foreground within many views southwards from character areas to the north;
- The small, linear hamlet of Walker Fold at the southern boundary of this area encompasses a row of gritstone cottages, several of which have grey-painted window and door frames;
- Views northwards to Longridge Fell are dominated by the dense cover of coniferous woodland

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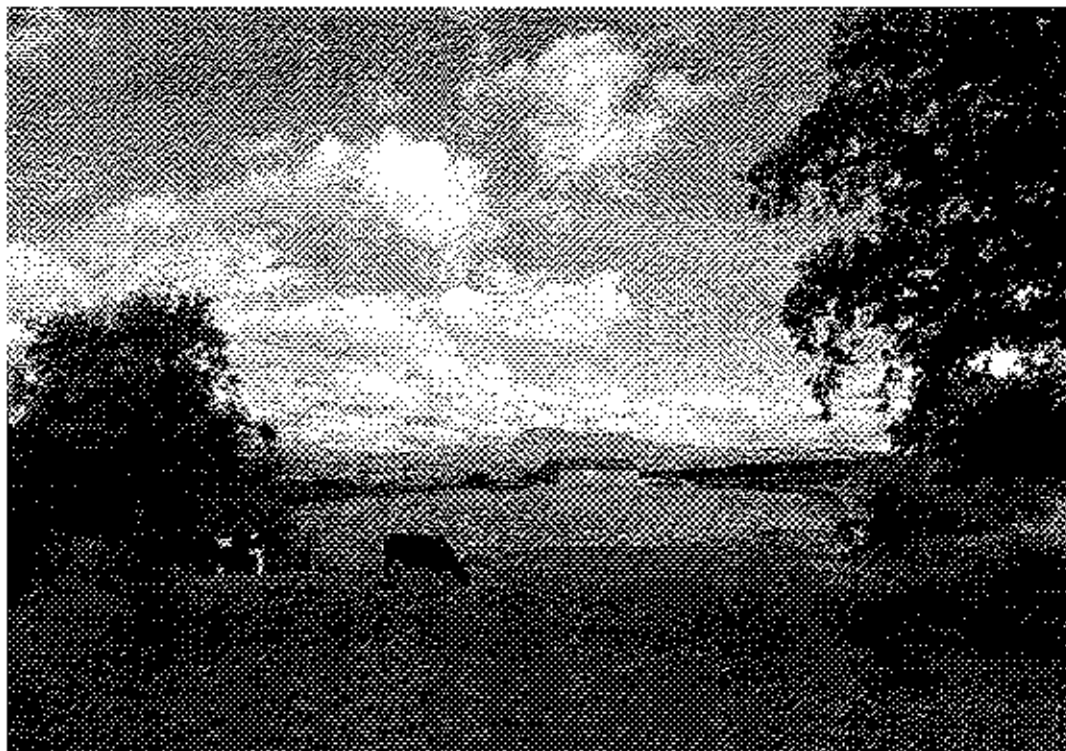
D12: Upper Sabden Valley



- The village of Newchurch in Pendle, with its rows of white cottages is a feature within views across this area; as is the small settlement of Spen Brook with its mill tower, nested against the rising moorland hill backdrop with patches of coniferous woodland;
- The traditional field barn at Sabden Fold is a key landscape feature;
- The landscape is delineated by a network of drystone walls and electricity poles are also a feature in places;
- Views southwards and eastwards across the lush, improved pastures of the Calder Valley, with a network of hedgerows and post and wire fences on the lower slopes towards urban areas of Barrowford and Colne to the southeast are characteristic of this area;
- A highly textural landscape; gorse, rushes, wind blown trees and upland stone walls all contribute to the character of this area;
- Ancient farmsteads (for example, the remains of the vaccary at Sabden Fold) and old houses are a feature of this area;
- The wide floodplain of Sabden Brook contains distinctive patchwork of pasture meadows

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D13: Park House



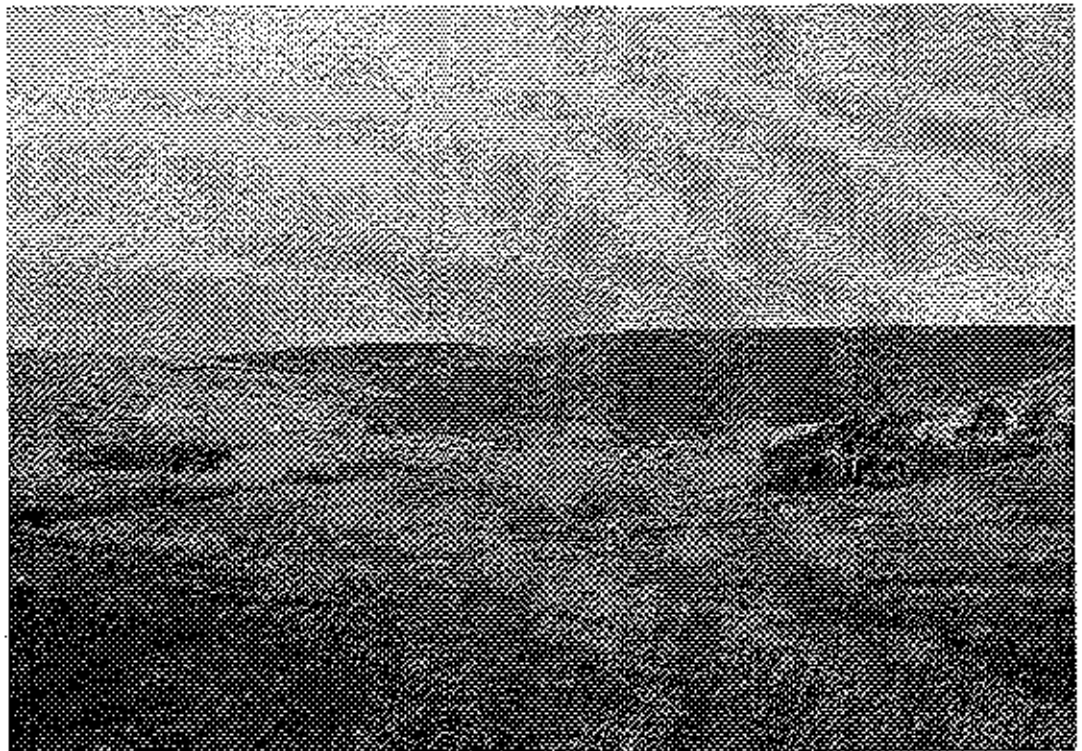
- Patchwork of grazed fields which are delineated by drystone walls, hedgerows and occasional post and wire fences;
- Mature deciduous trees line Park House Lane road corridor;
- Framed views into Roeburndale Valley to the west and Hindburndale Valley to the north;
- A distinctive pattern of farms within the area, which generally start at the river bottoms of the Roeburndale (Landscape Character Area I2) or Hindburndale (Landscape Character Area I3) Wooded Rural Valleys and finish with the common rights on Goodber Common (Landscape Character Area B9);
- There is evidence of bell pit mining within the landscape;
- Most of the land within this area is difficult to farm, resulting in a patchwork of semi-improved pastures, meadows and rushy pastures;
- The rising mass of Goodber Common provides a dramatic, smooth backdrop to views southwards and contributes to recognisable sense of place

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Df4: Abbeystead



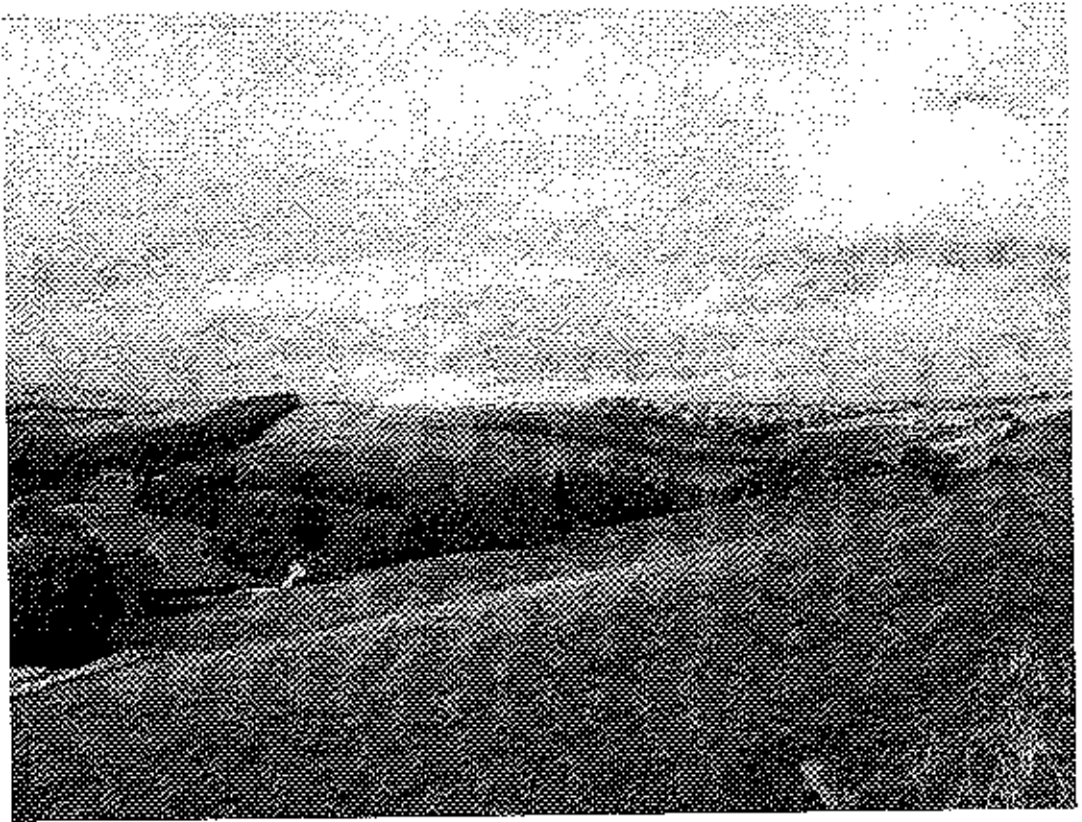
- From the northern half of the area, open views into the intimate valley corridor of the Marshaw Wyre contribute to recognisable sense of place within this Landscape Character Area;
- To the south, a strong sense of enclosure is provided by dramatic rising masses of Catshaw and Hawthornthwaite Fells;
- There is a relatively strong sense of remoteness and tranquillity within this landscape;
- Landscape pattern comprises a patchwork of large-scale, regular pastoral fields which are delineated with a combination of hedgerows and drystone walls



- From the south of this area, open views across Leagram Hall, with its associated parkland landscape contributes to recognisable sense of place;
- The landscape is crossed by several north-south running brook (or stream) corridors, which run from the higher Moorland Hills to the north into the lower Undulating Farmland to the south;
- In the western half of the area, plantations associated with Wolfen Hall provide a sense of enclosure;
- There is a relatively strong sense of tranquillity throughout this landscape, within which, road corridors are generally absent;
- Wolf, Saddle and Burnslack Fells provide a strong sense of enclosure to the north, and provide a dramatic moorland backdrop to views northwards

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D16: Middop



- Within views westwards from this area, the rising mass of Pendle Hill is a dominant landscape feature, which provides instantly recognisable sense of place and orientation;
- Looking eastwards, there is a relatively strong sense of enclosure as a result of the White Moor hills, which outside the eastern boundary of the Study Area;
- The landscape is predominantly cloaked by a patchwork of marginal pasture fields. In the north of the area, these fields provide the transition between the higher Moorland Hills to the south and the more open, lower drumlin fields to the north;
- In the north of the area, from Middop Hill, open views across lower undulating farmland and drumlin landscapes to the north contribute to recognisable sense of place;
- Occasional isolated farmsteads are dotted within this landscape, which is otherwise devoid of settlements

CURRENT AND FUTURE LANDSCAPE CHANGES

AND OPPORTUNITIES

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Forces for Change

Past Landscape Changes

1.1.9 Observable changes in the past include:

- Improved pasture surrounded by stone walls where intensive farming has spread onto higher ground;
- Outside of protected nature conservation areas ecological interest has been depleted through agricultural improvements;
- Evidence of historic settlement in the form of stone terraced cottages and laithe houses;
- Increase in traffic levels, particularly the number of delivery wagons and buses.

Current Landscape Condition

1.1.10 The overall condition of the Moorland Fringe Landscape Character Type is considered to be moderate. Stone walls are generally well maintained, although there is evidence of lack of management in places, which has led to the introduction of barbed wire fences to act as stock proofing where walls have deteriorated. There is also evidence of erosion of roadside verges along the minor road corridors and suburbanisation of traditional farmsteads. Although much of the land within the Moorland Fringe is agriculturally improved, patches of rare ecological habitat remain (for example, species-rich meadows and patches of acid grassland).

Future Landscape Changes and Opportunities

1.1.11 In the short-term it is likely that there will be continued positive changes in the form of on-going management of SSSI's. Negative changes may include reduced budgets of national agencies and organisations to actively conserve protected areas and continued decline of valuable habitats and features within the wider landscape. There is also pressure for the conversion of distinctive vernacular buildings to residential use and a loss of the small scale field pattern of scrub and pasture due to farm abandonment or amalgamation of farm units.

1.1.12 Longer-term changes (20+ years) will be dependent on prevailing incentives and policies and it is therefore challenging to be prescriptive. The AONB Management Plan will provide a key tool in managing change and ensuring a positive future for the area. Potential longer-term changes and key guidelines within this Landscape Character Type are outlined below:

- *Agricultural Change and Land Management* - Stream corridors are vulnerable to pollution and run-off associated with the adjacent predominantly pastoral fields. Stone walls on higher ground are vulnerable to any moves to more extensive farming of livestock. These key landscape features could be lost through neglect or removed to enable the amalgamation of adjacent fields. Increased financial pressures and reduced availability of higher level agri-environment payments leading to field boundaries, sheepfolds, limekilns, walls and hedges and traditional farm buildings suffering from lack of management.
- *Climate Change* - In this area, climate changes are likely to be less marked and provide for a more gradual change in for example, species composition or habitat characteristics.
- *Development*- Increasing traffic associated with tourism and recreation could put pressure on the road system. This could lead to inappropriate highway improvements and signage, or large scale schemes that permanently alter the character of the landscape. Large-scale renewable energy developments on the skyline and in key views could erode the open and generally undeveloped character of this Landscape Character Type. Loss of vernacular building styles and use of inappropriate building materials may also result in a loss of local landscape characteristics.

Sensitivities and Capacity for Change

1.1.13 Overall, this Landscape Character Type is considered to have moderate ecological sensitivity. Although ecological habitats have been depleted in places by agricultural improvement, valuable ecological habitats include traditionally managed meadows and acid grassland which support a diverse range of bird species. Cultural and historic sensitivity is high as a result of the numerous scattered, isolated, traditional historic farmsteads, the presence of packhorse ways and parish boundary markers, which are still visible within the present landscape. As a result,

landscape character sensitivity is considered to be high. There is strong intervisibility with adjacent Landscape Character Types, giving high visual sensitivity. Other sensitivities within the landscape include the distinctive pattern of stone walls which exhibit traditional construction styles and wall copings, stunted hawthorns and small, semi-natural clough woodlands, which are landscape features. As a result, this Type is considered to have high landscape character sensitivity. Overall, the Moorland Fringe Landscape Character Type has limited to moderate capacity to accommodate change without compromising key characteristics.

GUIDELINES FOR MANAGING LANDSCAPE CHANGE

- 1.1.14 The overall strategy for the Moorland Fringe Landscape Character Type is to conserve the remote, multi textured character of upland habitats including acid grassland, herb rich meadows and rush dominated pasture; and the existing recognisable pattern of drystone walls, hedgerows and settlements, and to enhance these features where they are depleted. There is also a need to conserve open views across adjacent Landscape Character Types.

- 1.1.15 Specific guidelines include:

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Physical Character

- **Actively manage** the changing landscape in order to ensure that key landscape features and attributes are not lost through climate change or other significant agents of landscape change;
- **Seek** sustainable management options for areas of abandoned farmland to ensure that neglect does not lead to adverse change in landscape or ecological terms

Ecological Character

- **Improve** the structure and condition of existing woodland resource through active management¹;
- **Ensure** that new woodland planting is delivering Biodiversity Action Plan objectives and is sympathetic to local topography²;
- **Manage** grazing to facilitate natural regeneration of woodland³;

¹ Lancashire Woodland Vision, Lancashire County Council, Forestry Commission and TEP.

² Lancashire Woodland Vision, Lancashire County Council, Forestry Commission and TEP.

³ Lancashire Woodland Vision, Lancashire County Council, Forestry Commission and TEP.

- **Improve** water quality within the surrounding upland catchments to protect and conserve aquatic habitats;
- **Conserve** existing species-rich meadows, acid grassland and damp pastures for wading birds;
- **Encourage** the management of permanent pasture to maximise its ecological value by avoidance of ploughing, re-seeding, artificial fertiliser, drainage and other potentially damaging farm operations as well as encouraging appropriate stocking levels and land use cycle;
- **Encourage** the reversion of improved grassland within the higher enclosure to an acid grassland/heathland cover, with the long term aim of extending the moorland landscape downslope;
- **Where possible**, remove invasive, non-native species;
- **Conserve** the pattern of sparse tree cover, stunted hawthorns and trees associated with farmsteads;
- **Restore and re-create** herb-rich grassland.

Cultural and Historic Character

- **Conserve and enhance** existing buildings and farmsteads by repair and maintenance using local gritstone and limestone as appropriate, as well as removal of rubbish and derelict machinery;
- **Conserve** the pattern of drystone walls and distinctive construction styles;
- **Encourage** maintenance of gritstone or limestone walls and associated banks and ditches with gritstone or limestone in areas where it is the predominant underlying rock type;
- **Conserve** distinctive historic features such as parish boundary feature, earthworks, packhorse tracks and sheepfolds to maintain a rich cultural landscape;
- **Protect** traditional farm buildings, limekilns, sheepfolds and archaeological features which are key features of the landscape;
- **Encourage** a built form which respects the simple architecture of farmsteads and cottages and reflects the characteristic settlement pattern of small, isolated clusters of dwellings and individual farmsteads;
- **Target** agri-environment schemes to conserve and enhance valuable landscape features, including traditional farm buildings, limekilns, sheepfolds, clough woodlands and field boundaries, including hedgerows;

- **Maintain** the strong landscape pattern through active management and enhancement of stone walls, hedgerows and other boundary features;
- **Ensure** that highway improvement schemes respect and reflect local character and **encourage** the use of traditional signage where possible;
- **Conserve** traditional roadside features, including boundary markers (stone/metal) and signposts;
- **Seek** design solutions to road safety issues which retain the character of the enclosed narrow lanes, walls and verges;
- **Conserve** and maintain the historic network of footpaths and packhorse trails;
- **Promote** informal recreation through appropriate signage and management.

Aesthetic and Perceptual Character

- **Encourage** the implementation of traditional signposts and resist excessive signage and lighting along road corridors where safe to do so;
- **Protect** uncluttered skylines and key views to and from the area from tall, vertical and large-scale developments that may erode the character of the area

For more information about the Forest of Bowland AONB landscape character assessment please visit

http://www.forestofbowland.com/landscape_character

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