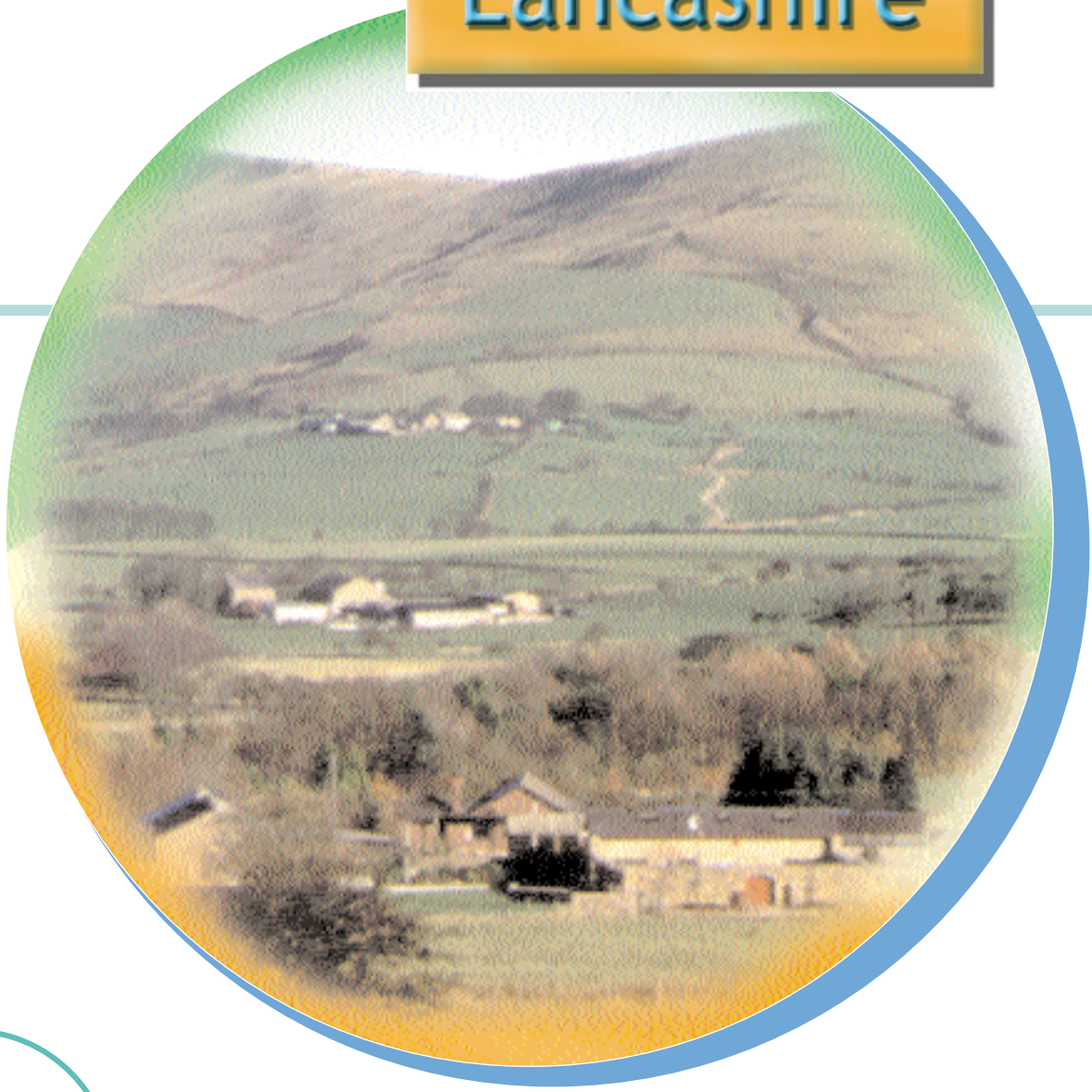
A Landscape Strategy for Lancashire



Landscape Strategy

Lancashire County Council
Environment Directorate

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Geological Map based on
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1 Introduction

In October 1999, Environmental Resources Management (ERM) were commissioned by Lancashire County Council, in partnership with the Countryside Agency, District Councils, Blackburn with Darwen Unitary Authority, North Yorkshire County Council and Craven District Council, to undertake a comprehensive integrated landscape assessment of Lancashire including the urban areas and to produce a landscape strategy informed by the landscape character assessment process.

The overall study consists of two separate reports, a *Landscape Character Assessment* and a *Landscape Strategy*. This report, the landscape strategy, builds upon the landscape character assessment, but does not deal with the urban landscape character types. It provides an overview of forces for change affecting the landscape of the study area as a whole; a landscape evaluation, strategies and recommendations for each individual landscape character type; and broad guidance on priorities and actions for implementing the landscape strategy as a whole.

The timescale of the *Landscape Strategy* is to be concurrent with and reviewed during the review period of the next Joint Lancashire Structure Plan 2001-2016.

1.1 Scope and Purpose of the Strategy

The study area *(Figure 1)* includes all of the administrative county of Lancashire and Blackpool and Darwen Unitary Authority, and part of the Craven District of North Yorkshire up to the boundary of the Yorkshire Dales National Park. For the purpose of the report, the study is referred to as a *Landscape Strategy for Lancashire*. The landscape character assessment, on which the strategy is based, describes the evolution of the landscape (highlighting distinctive features) and describes the specific character of each of the twenty one landscape character types (and three urban landscape character types) that occur.

The purpose of the landscape strategy is to inform the new Structure Plan and local plan policies on landscape, inform supplementary planning guidance, to guide and inform the development control process, to guide and inform project planning and landscape management by the Lancashire Countryside Service and others, and to promote public awareness of landscape character and the importance of conservation and enhancement of landscape.

Recommendations made in this *Strategy* should not be construed as necessarily representing present or future planning or other policy of the local authorities concerned.

The strategy report has three main objectives:

- *to review the forces for change that are affecting the landscape, highlighting key issues and implications of different forms of development and land use change for landscape character and quality;*
- *for each landscape character type, to identify key environmental features and the specific implications of change, as well as appropriate strategies and actions to manage and guide landscape change in a positive way;*
- *to produce an overview of strategic issues for Lancashire, identifying the key actions that need to be taken to bring about positive landscape change, including the development of landscape indicators and targets for change.*

1.2 Approach and Methodology

Preparation of the landscape strategy has involved extensive research, analysis, evaluation and consultations, as well as workshops with representatives of the partnership authorities. In particular, the partnership authorities have given guidance on the format for the strategy, to ensure that it is as useful and accessible as possible for a wide range of different applications, from planning and environmental assessment through to day to day land management. The methodology used is in accordance with the new Interim Landscape Character Assessment Guidance [1]. The principal stages in the process of preparing the strategy have been:

- *to identify changes in the landscape that have taken place this century and that are anticipated to occur in the foreseeable future, through a combination of field observations*

(1) Countryside Agency and Scottish Natural Heritage (1999) Interim Landscape Character Assessment Guidance.

(from the landscape character assessment), desk study and consultations with a wide range of local authority and government agency staff;

- *to evaluate the key environmental features of each landscape character type, encompassing not just visual and aesthetic features, but the full range of 'environmental capital' associated with each type - that is habitat, historic, built environment and recreational features; and cultural and perceptual qualities such as wilderness and tranquillity;*
- *to explore the implications for each landscape character type of development, land use change and other factors, assessing the specific effects on landscape character, quality and key environmental features; and developing strategies and recommendations to counter adverse landscape change and optimise beneficial landscape change;*
- *to formulate a general vision for the landscapes of the County in discussion with the partnership authorities, focusing on themes of local distinctiveness, accommodating landscape change, an integrated approach, and monitoring landscape change - providing broad guidance on priorities, actions and responsibilities.*

1.3

Structure of the Report

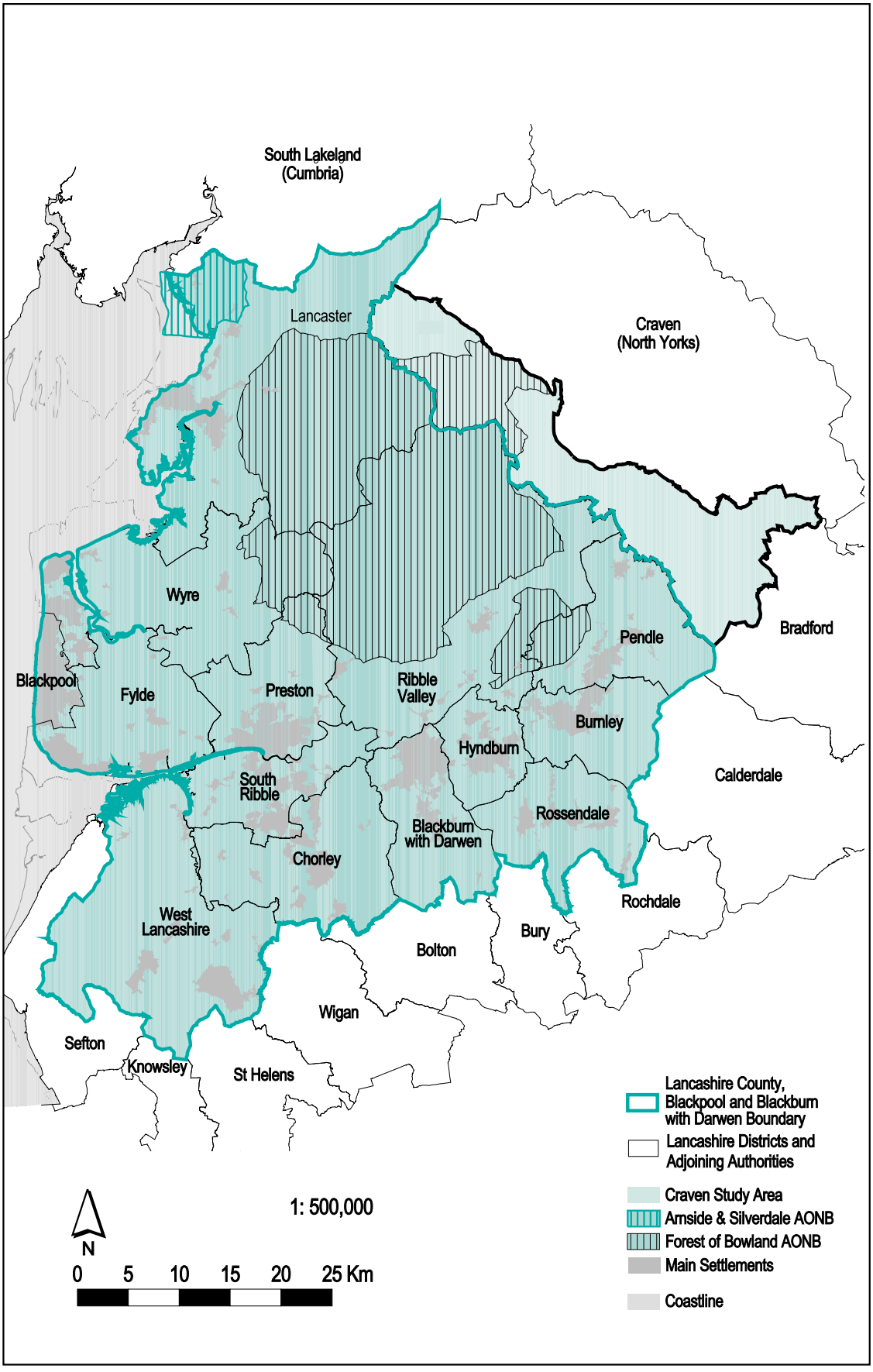
Following this *Introduction*:

Section 2 presents an analysis of the ongoing forces for change to the County's landscape. Each sub-section summarises the key issues rising from each force for change.

Section 3 introduces the key environmental features, forces for change and implications, strategies and recommendations for each landscape character type, and presents potential local indicators of landscape change based on key characteristics.

Section 4, the final section, describes how and by whom the strategy should be used. It gives an overview of strategic issues and priorities for Lancashire, indicating the main actions and responsibilities of the partner organisations, community groups and individuals who may be involved in the implementation of the *Strategy*. It concludes by presenting a proposed programme for monitoring the implementation of the landscape strategy.

Figure 1: Study Area



2.

Forces for Change

2.1

Introduction

The landscape, ecological and historical resources of Lancashire are constantly changing in response to human activity and natural processes. Throughout the county's long history, changes in agriculture, industry, society and the environment have had a profound and lasting influence over the landscape. In recent decades, change has been driven by a diverse range of increasingly international forces, such as global climate change or agri-environmental policy dictated by the European Union (EU).

The pace of change is rapid and the implications for change are difficult to assess. Change which is regarded as negative by some may be seen as an improvement by others; perceptions and values change with time; and new elements introduced to the landscape may eventually be regarded as valuable landscape features. Guardians of the landscape must therefore be democratic and transparent about their decision making processes, ensuring that all changes are managed to retain and enhance the qualities which make the Lancashire landscape so special.

The Rio Earth Summit set a global agenda for sustainable development and was a catalyst for action on environmental policy and biodiversity in the UK. In recent years, there has been a strong commitment to nature conservation and planning for biodiversity which is reflected in the UK Biodiversity Strategy, European Union designations such as Special Protection Areas and Ramsar sites, and grant funding for schemes such as Countryside Stewardship and the Woodland Grant Scheme. The emphasis is on providing incentives to counteract the destruction and fragmentation of habitats; there is also increasing emphasis on providing public access to the countryside and on encouraging the involvement of communities in decisions about their local environment (Local Agenda 21).

This section examines the driving forces behind landscape change in Lancashire, setting change in a long term context and analysing trends for the future. It is based upon a desk review of relevant planning and policy documents and upon wide consultation with local authorities, agencies and interest groups.

2.2

BUILT DEVELOPMENT

Increased personal mobility and advances in telecommunications technology have made all rural areas relatively accessible. These trends, in combination with an enhanced perception of rural life and a decline in the importance of agricultural land, are placing increasing pressures upon the Lancashire countryside to accommodate built development.

2.2.1

Residential Development

Today, housing represents the main pressure for built development in the county (Lancashire is second only to Greater Manchester in the figures for net additional dwelling provision 1991-2006 for the North West Region). The county is expected to accommodate a maximum of 63,200 new dwellings between 1996 and 2016, representing 21.8% of the regional total of 321,000.[1]

Draft Regional Planning Guidance for the North West states that Lancashire has the capacity to accommodate its own housing requirements without placing pressure on the Green Belt or the best and most versatile agricultural land. However the national trend towards smaller household units is having a significant impact and will increase the land take required.[2] This is leading to pressures for the use of greenfield sites in the future, with consequences for loss of landscape character, historical and ecological resources. This is particularly important in the Fylde (15d) where the cumulative impacts of past and present suburbanisation places more importance on those areas which retain their rural characteristics.

As a region the North West suffers from relatively low confidence about high quality residential design. Most developments are a standard product, with no reference to local landscape character, regional styles and building materials. This is a particular concern in

(1) RPG 13, HMSO 1996 in Lancashire Structure Plan 1996-2016 (8th Draft).
(2) Lancashire Structure Plan 1991-2006, 1997.

relation to recent housing developments on the fringes of existing settlements as standardised designs and layouts are a threat to the identity and individuality of Lancashire's towns and villages. Such developments may have a detrimental landscape impact, but new developments may also represent a positive opportunity to enhance the appearance of settlements by the adoption of careful and considered design and choice of materials which reflect the positive characteristics of the locality.

Changes in the county's industrial base and the continuing decline of traditional manufacturing industry, coupled with the condition of some of the building stock and the requirements of modern living ensures that there will be increased pressure for substantive change within urban areas. Draft RPG for the North West op cit indicates that at least 74,000 dwellings will need clearing over the next 25 years. A similar pressure has already been witnessed in relation to redundant industrial and commercial buildings, particularly mills, as well as chapels and halls. Growing demand for residential housing and retail space within urban areas will contribute further to that pressure.

More recently, the Government's Urban Task Force (1) has highlighted regeneration of urban areas, the 'recycling' of existing land and buildings and brownfield development as some of the key means to engender an urban renaissance. However there is a risk that the essentially 19th century urban character of much of Lancashire's older towns may be virtually lost in the absence of a positive regeneration policy that takes account of this heritage. Further guidance is anticipated in the forthcoming Urban White Paper.

Photo 1 New residential development in an upland rural landscape.

Unlike areas of the Midlands and the South, Lancashire retains a large number of traditional barns which have not yet been converted. The county archaeology service advises on around 600 such applications per year. The relatively high level of barn conversions in Lancashire can be regarded as a positive opportunity to increase the county's rural housing stock without the need for new buildings. Converted farm buildings may provide an ideal location for rural businesses to act as a catalyst for local training and employment and they represent a means for preserving historic structures which are important local landscape features. However the trend may lead to negative landscape impacts in sensitive, remote and often prominent rural locations and also to the loss of key features related to architecturally or historically important barns. Barn conversions also place considerable pressure on dwindling populations of barn owls and various species of bats. Most historic building conversions are subject to strict design guidance, but planners may find it more difficult to control the incremental development of the immediate surroundings. Ornamental garden plants, garden fences, driveways, car parking and power lines all contribute to the suburbanised character that often accompanies this sort of development. Barn conversions are currently a particularly significant force for change in the Ribble Valley and Pendle Districts *(Landscape Character Areas 5e, 6a, 13a,)* where the relative proximity of urban centres, good roads and a large number of derelict agricultural buildings has resulted in a high proportion of applications for the conversion of barns to housing.

Regional Planning Guidance places strong emphasis upon making best use of the existing road network, particularly strategic transport corridors, for the location of new development. This has significant implications for the disproportionate expansion of villages

(1) Towards an Urban Renaissance, Urban Task Force, 1999, E and FN Spon.

Photo 2. Development on the M6 at Junction 34.

and towns within these corridors and has led to particularly strong pressures for development in rural settlements in Landscape Character Types 5, 6, 14, 15 and 12.

2.2.2

Industry, Leisure and Retail Developments

The strategic transport corridors are also attractive locations for large out-of-town retail, industrial and leisure complexes. Large retail and leisure developments may have a significant landscape impact if they are sited near motorway junctions in rural areas and in landscapes with a relatively open character, such as the Fylde *(15d)*.

New commercial development will continue to be essential as Lancashire's traditional industrial base is restructured. The Lancashire Structure Plan 1991-2006 states that 1,225 ha are expected to be required within the plan period. There will be particular emphasis on areas within the strategic transport corridors which are close to a potentially large workforce and where there are good roads for the import and export of raw materials and finished goods. The trend in recent years has been away from large employers to a larger number of small enterprises. Industrial development may have a particularly high landscape impact in areas such as the Ribble Valley, where buildings with reflective roofs may be overlooked in views from the surrounding hills.

There is little evidence at the present time that the expansion of existing large-scale industry is a significant force for change. Lancashire accommodates some very large industrial producers including BAE Industries, Leyland Trucks, ICI and BNFL. The proposed Lancaster Southerly Bypass may initiate the expansion of port activities.

2.2.3

Summary of Key Issues

The most significant pressures from built development are:

- *expansion of suburban character and/or disproportionate growth in particular settlements close to the strategic transport corridors and infill development in rural areas which may be at odds with traditional settlement patterns;*
- *development of standardised designs on the fringes of existing settlements which compromises their distinctive characteristics and landscape setting;*
- *the introduction of a profuse variety of building materials and styles and the lack of reference to traditional rural styles of siting and design;*

- *barn conversions in rural locations which may detract from the local landscape character - most are for residential development, although they would represent an ideal opportunity for rural employment;*
- *a legacy of older buildings in urban areas in need of adaptation or modernisation - there is particular scope for urban regeneration in Lancashire, with pressures for the appropriate re-use of historic buildings;*
- *potential for loss of urban character through continuing clearance programmes;*
- *expansion of industrial, leisure and retail developments and their concentration in strategic transport corridors.*

2.3
INFRASTRUCTURE

2.3.1
Road Expansion and Improvements

Despite government policy favouring the widening and improvement of the existing road network rather than the construction of new routes, there remains potential for road improvements to have significant impacts on landscape character and on ecological and historical resources. Such improvements are a response to the forecasted massive increase in car ownership nationally - the number of cars could rise by 150,000 in the period 1991-2006 and road traffic could increase by between 33% and 66% [1].

Expansion of the road network, particularly in the *'Strategic Transport Corridors'* [2] may further fragment the countryside destroying valued landscapes, landscape patterns and historic and habitat features. Increased accessibility in one area may lead to a loss of tourism, jobs and services elsewhere, although the relative inaccessibility of some sensitive areas (such as *Arnside and Silverdale* and *The Forest of Bowland*), which have a network of narrow lanes, helps to retain their characteristic isolation.

Proposed strategic improvement of the Fylde coast easterly bypass, the Lancaster southerly bypass and improvements to the Trans Pennine Route threaten to increase built development on the fringes of many settlements and the recent extension of the M65 between Blackburn and Clayton Brook has increased pressure for development close to the new junctions. However, if they are managed carefully, modern road verges and embankments can introduce significant areas of semi-natural habitat into landscapes which otherwise contain very little.

Minor road improvements in rural areas tend to have an urbanising influence as they bring additional lighting, signage and an element of standardisation to the countryside. For instance, road developments in the *Industrial Foothills* and *Valleys (Landscape Character Areas 6a and 6b)* have had a degrading influence on the rural landscapes fringing large settlements as the new roundabouts , kerbs and engineered embankments have created a standard 'roadscape' which could be anywhere in the country. Traffic calming and safety measures designed to reduce rural speeding and improve sightlines also tend to have a similar homogenising influence. Some of Lancashire's rural junctions have a distinctive pattern of railings. These and historic wayside markers are particularly vulnerable to the impacts of new road schemes.

2.3.2
Railways

Rail travel has significant advantages over private road transport in terms of its impact on the environment.

Improved access to the rail network by the planned move to open rural stations, agreed in principle with the rail industry [3] will give more people the opportunity to travel by train, with positive benefits to landscape and environment. Line-side improvements for nature conservation would make a valuable addition to wildlife corridors and improvements to the physical appearance and setting of stations would be a positive contribution to many settlements. A number of disused railway lines have already become valuable wildlife habitats.

2.3.3
Overhead Transmission Lines and Communications Masts

Overhead transmission lines are particularly prominent in open and isolated landscapes.

(1) Lancashire Structure Plan 1991-2006, Lancashire County Council, 1997.
(2) Lancashire Structure Plan 1991-2006, Policy 33, Lancashire County Council, 1997.
(3) Lancashire Structure Plan 1991-2006, Lancashire County Council, 1997.

On a smaller scale they may also be visually intrusive where they appear on the skyline of ridgetops, for example in *Landscape Character Areas 7a* and *7b, Mellor Ridge* and *Upholland Ridge.*

Single high communication masts or towers are associated with civil aviation, defence industries and the telecommunications industry. Many have permitted development rights and are not necessarily subject to planning constraints.

Telecommunication masts can be particularly intrusive in landscapes with a remote rural character and high points are under particular pressure *(for instance in Landscape Character Types 1,2 3 and 4)*. National policy on telecommunications is designed to facilitate the growth of existing systems. The rapid expansion of the mobile telephone network has already had a significant landscape impact in remote, rural landscapes, such as *Landscape Character Areas 20a (Arnside and Silverdale)* and *5i, 12a,* and *7c* where a number of masts seem visually intrusive.

It is difficult to predict whether the development of new masts will continue to be a significant force for change in the future as this technology is constantly being updated. Policy in the Lancashire Structure Plan 1991-2006 seeks to minimise the impact of new development by encouraging multiple use of masts and existing structures.

2.3.4

Wind Turbines

Lancashire's extensive upland areas in the Forest of Bowland and the Pennine fringes together with the County's coastline have high wind speeds and are locations favoured by the wind energy industry for wind turbines. However, many of these areas are highly visible from centres of population and in attractive rural locations so new wind farms could potentially have a wide visual impact. The existing windfarms on hill sides at Coal Clough, Caton Moor and near the Chelker Reservoir, are man made elements on bleak remote hillsides, which have varying degrees of impact on the surrounding landscape.

As the finite resources of fossil fuels dwindle and wind turbine technology improves, it is likely that wind turbines will become more commercially viable.[1] However, the predominance of urban development on the coast may be a significant constraint on the approval of large wind turbine developments in this area. However, parts of the Fylde, the areas around Morecambe Bay and the east

Photo 3. Coal Clough Windfarm near Holme Chapel.

(1) New and Renewable Energy - Prospects for the 21st Century. Conclusions in Response to the Public Consultation, Department of Trade and Industry, 2000.

Lancashire uplands are relatively undeveloped and therefore may be the subject of pressure for extensive turbine developments.

2.3.5

Underground Cables

Extensive new and replacement cabling schemes for information and digital technology, gas and electricity can pose significant threats for hedges, roadside and hedgerow mature trees and occasionally other features and habitats.

2.3.6

Summary of Key Issues

The most significant pressures for infrastructure which have implications for landscape are:

- *ongoing, piecemeal road improvements, such as widening and straightening, insensitive design of signs and roadside furniture and traffic calming, which together have a cumulative impact;*
- *growth in levels of rural traffic which has an impact on tranquillity and remoteness;*
- *the fragmentation of habitats and historic landscape patterns as a result of linear infrastructure developments;*
- *the homogenising influence of road landscapes on local landscape character;*
- *the opening of rural rail stations may have a positive impact by reducing traffic levels;*
- *additional pylons, overhead transmission lines and communication masts;*
- *increasing pressure to establish large wind turbine developments.*

2.4

MINERAL EXTRACTION AND LANDFILL

2.4.1

Mineral Extraction

Lancashire contains extensive mineral resources, some of which are of national and regional significance. The most important of these are construction minerals such as limestone, gritstone, sand and gravel, and shale which are used as crushed rock aggregates or in the production of building products such as cement or bricks. The policy framework for control of new mineral developments is provided by the Lancashire Structure Plan and the emerging Lancashire Minerals and Waste Local Plan. National policy (1) has determined the levels of aggregate provision to be made in each region. The Lancashire Structure Plan sets out the contribution to be made in Lancashire 1992-2006. This amounts to 11 million tonnes of sand and gravel (20% of regional total) and 88.8 million tonnes of crushed rock (74% of the regional total).

Minerals can only be worked where they occur. Detailed policies for the control of new mineral workings are included in the emerging Lancashire Minerals and Waste Local Plan. Planning decisions on proposals will be made having regard to their overall environmental impact and landscape impact will be an important determining consideration. There is potential for extended or new mineral operations to have negative implications for visual amenity, landscape character, archaeological and ecological resources, although detailed restoration plans are always required. Landscape impacts can also result from quarry traffic.

Restoration of completed mineral workings offers a positive opportunity to bring land back into productive use and/or to maximise its amenity or ecological value. A fine example is the Mere Sands Nature Reserve, a former sand pit. However, where extensive sand and gravel extraction is restored as part of a leisure complex, permanent structures, infrastructure, gardens and sports facilities may diminish rural character and nature conservation value.

Lancashire has limited peat resources and only one large scale extraction site and a small number of smaller extraction sites. The Lancashire Minerals and Waste Local Plan reflects national policy (as set out in PPG 13), which states that any future peat extraction should be restricted to areas which have already been damaged by recent human activity or are of no nature conservation value. Peat extraction is a particularly negative, though limited, force for change both in visual terms and because peat often conserves valuable organic archaeological remains which

(1) Mineral Planning Guidance 6: Guidelines for Aggregate Provision in England, April 1994.

Photo 4. Mere Sands Wood Nature Reserve in former sand pit.

are indicators of Lancashire's past climate and land use.

At present Lancashire has no deep or opencast mining operations and only a small number of drift mines are worked. Future deep mining is unlikely to be a consideration, although new open cast coal mining (should it be permitted) would represent a significant force for change in the future, particularly in the *Industrial Foothills* and *Valleys*.

2.4.2

Abandoned Mineral Workings

Abandoned quarry landscapes are common in Lancashire, particularly in the east where the quarrying industry has left an indelible mark on the landscape around Rossendale. Large areas remain abandoned and opencast and underground workings, spoil heaps, hushings, tramways and inclined planes are dramatic indicators of past activity. Whilst important features may have been lost through reclamation schemes in the past and also through neglect, the heritage associated with these sites can contribute to exciting opportunities for positive restoration and protection - many are a catalyst for local economic regeneration [1] .

2.4.3

Landfill and Waste Disposal

Disposal of waste by landfilling in disused mineral workings or by landraising on the coastal plain has been the primary means of waste management in Lancashire. However, European and UK Government policy is requiring a reduction in the use of landfilling and an increase in other more sustainable forms of waste management such as recycling or incineration. The Lancashire Minerals and Waste Local Plan proposes a reduction of 25% in land filling by 2006: the plan indicates overall that no new landfill sites are needed before 2006, but safeguards two particular sites for future land filling in the longer term. In the longer term it is anticipated that further reductions in landfilling of degradeable waste will be sought, in line with european national waste strategies. There will be a continuing requirement for landfill capacity all be it on a reduced scale and additional facilities are likely to be required post 2006 as exisiting authorised capacity becomes exhausted. The detailed approach will be developed through renewing the Lancashire Structure Plan & Waste Local Plan Policies.

New waste treatment, transfer facilities and recycling operations generate significant heavy goods traffic and the proximity principle, together with the use of the Strategic Road

(1) Olwen Todd-Jones, Landscape Design 284, 1999.
(2) Lancashire Structure Plan 1991-2006, Policy 34, Lancashire County Council, 1997.

Network [2] will place pressure on certain landscape types, although planning policies mean that such facilities are likely to be located within existing urban areas.

A significant proportion of sludge produced by sewage disposal works in the county is disposed of in landfill sites, although new controls to prevent the disposal of untreated sewage and sewage sludge at sea will lead to an increased demand for new treatment disposal facilities, with localised implications for landscape character and visual amenity.

Fly-tipping of household and garden waste is a growing concern and if it becomes established in a location, more permanent elements of degradation may follow. It continues to be a force for change in urban areas and in rural areas which are close to urban areas, such as *Landscape Character Areas 6a, 6b, 4g, 3a* and *4c.*

Summary of Key Issues for Mineral Extraction and Landfill

The principal pressures for change arising from mineral extraction are:

- *the impacts of extractive workings both during operation and following restoration, together with the impact on historic sites, industrial archaeology and characteristic patterns of fields, woodlands and settlements;*
- *the visual impact of traffic associated with mineral workings, especially on traffic routes through rural areas;*
- *landscape implications of future waste transfer, landfill and processing operations.*

2.5
AGRICULTURE AND LAND MANAGEMENT

2.5.1
An Overview of Farming in Lancashire

Agriculture represents the major land use in Lancashire and has an important role to play in safeguarding the environment and rural economy. The total area of farmland in Lancashire is approximately 211,101 hectares, excluding common land which totals 7,350 hectares. Permanent pasture predominates and accounts for approximately 57% of Lancashire's agricultural land. It is concentrated in the *Coastal Plain, Undulating Lowland Farmland, Valley Floodplains , Low Coastal Drumlins, Drumlin Field, Industrial Foothills* and *Valleys and Moorland Fringe.* Rough grazing is also a major land use (18%) and is located on the moors and heaths of the *Moorland Hills* and *Moorland Plateaux* while crops and fallow account for 13%, mostly on the Coastal Plain.

Nearly 14% of Lancashire's agricultural land is classed as grades 1 or 2 (mostly in the Fylde and West Lancashire) compared to a national average of 16%. 42% of the county's land is classified as being of grades 4 and 5. This compares to 21% nationally and highlights the severe limitations faced by some of Lancashire's farmers. The size of holdings in Lancashire is on average smaller than elsewhere in the country. Holdings of less than 50 hectares account for 78% of all holdings and 26% of holdings are less than 5 hectares. This may reflect the relatively large number of horticultural holdings, which are generally small. The average farm size is 40 hectares although there has been a small but noticeable increase in larger holdings over 100 hectares over the last decade.

The dominance of permanent pasture is a reflection of Lancashire's relatively damp climate and the suitability of soils for grassland. Sheep and beef farming is important throughout the uplands. Dairying is important in the Ribble and Lune Valleys, the Fylde and much of the lowland farmland. Cereals are grown on the coastal plain and horticulture is important on the mosses of West Lancashire. Lancashire has a relatively high proportion of rented farmland (42% compared to 35% nationally) although between 1987 and 1997 there was an increase in the amount of privately owned land.

Two percent of the county's workforce is employed in agriculture (compared to 1.8% nationally) although in some rural areas the figure rises to 25%. However, in the period 1987 to 1997 there has been a 14% reduction in the agricultural workforce - studies have shown that for every job lost in agriculture 2.5 jobs are lost in ancillary industries [1] .

(1) All figures from the MAFF Census 1997, in Farming and Rural Issues in Lancashire, FRCA 1999.

2.5.2

Agricultural Subsidies

The economy of the agricultural sector is driven by the changing structure of economic subsidies available through central government and the European Union. The following sections set out the pattern of subsidies in the past five years and provides some indication of how the agricultural sector may be funded in the future.

Subsidies Available from the Ministry of Agriculture, Fisheries and Food (MAFF)

MAFF's agricultural support schemes include both direct support schemes and agri-environment schemes. Direct support schemes target lowland and upland beef and sheep producers and producers of combinable crops. Dairy producers are indirectly supported through a complex system of intervention and quotas, whilst pigs, poultry and horticultural units do not receive direct subsidies. Agri-environment schemes include many initiatives designed to sustain landscape beauty and diversity, protect wildlife habitats, conserve archaeological and historic features and improve opportunities for people to enjoy the countryside. In Lancashire there are 400 *Countryside Stewardship* agreements; 6 farms covering 372 hectares under the *Organic Aid Scheme*; 16 farms involved in the *Habitat Scheme;* and 4 agreements covering 1745 hectares in the *Moorland Scheme* [1] .

European Union - Objective 5b Funding

In 1994 parts of England were designated as Objective 5b areas because of a high reliance on agriculture as part of the local economy. In Lancashire the Objective 5b area is in the NE portion of the county and broadly corresponds to areas also classified as Less Favoured Areas. The Objective 5b programme aims to strengthen local economies by generating and increasing incomes for local residents whilst sustaining environmental quality. Although funding of existing projects is to continue until 2001, no new registrations have been permitted since October 1999. Recent initiatives include *The Lancashire Farm Tourism Initiative*, where grants training and marketing advice assist with the development of new farm tourist enterprises, and the *Northern Uplands Moorland Regeneration Project,* which helps moorland owners and farmers to improve the economic performance of their farming and shooting enterprise, as well as the environment generally. The Forest of Bowland AONB was also assisted by a Leader II designation which aimed to develop community projects to promote local culture and heritage and enhance the environment, while also contributing to the local economy and employment

Photo 5 Poorly maintained hedge.

(1) Farming and Rural Land Use Issues in Lancashire, FRCA, 1999.

The Bowland Initiative

The Bowland Initiative was established (along with a programme in Bodmin Moor, Cornwall) to test whether it was possible to produce a combined package of measures that addressed both economic and environmental issues. The objective is to increase the rural community's awareness of the potential economic value of environmental quality and to adopt an integrated competitive approach to marketing farm and forestry which is based on environmental criteria. The initiative operates with primary funding from Objective 5b and MAFF across the whole Objective 5b area of Lancashire (January 1999-June 2001). Landowners are provided with a free business and environmental appraisal, assistance with business planning, grants for certain capital investments, diversification and tourism development and payments for maintaining and restoring farm landscapes and wildlife habitats.

Countryside Stewardship

Countryside Stewardship is an incentive scheme which aims to make conservation part of land management practice and increase sustainable management on a long term basis. It is available throughout the whole of Lancashire, although interested parties which fall within the Bowland Initiative area must seek access to Countryside Stewardship through the Bowland Initiative Project. Applications are invited for a range of habitat conservation schemes for semi-natural grassland, heath, wetlands, mosslands, riparian habitats, coastal habitats and moorland. Proposals to establish field margins on agricultural land, restore orchards and field boundaries and provide permissive access are also encouraged. Proposals should address the schemes main objectives of landscape, wildlife, history and access. Countryside Stewardship has proved to be popular in Lancashire; in 1991-1998 there have been 459 agreements (compared to 400 in Cumbria and 345 in Northumberland. (1)

Rural Development Regulation

The Rural Development Regulation (RDR) became operational from 1 January 2000 and is the latest phase of the reform to the Common Agricultural Policy (CAP). It lays the foundation for a new European framework in which reforms in agriculture will be complemented by integrated measures to support rural development and protect and improve the environment.

The RDR seeks to simplify the framework for supporting rural development by grouping regulations into "accompanying measures" and "non accompanying" measures:

- *accompanying measures* cover Countryside Stewardship, organic aid, early retirement, LFA compensatory allowances and afforestation of farmland;
- *non- accompanying measures* cover investment in agricultural holdings, aid for young farmers, training, marketing and processing grants, other forms of forestry and general rural development similar to those measures in Objective 5b areas (2) .

It is too early to predict how the RDR will influence the dynamics of the agricultural sector, but the new package of grants will continue to encourage environmental measures as a fundamental aspect of the agricultural economy.

2.5.3

Review of Farming Types in Lancashire

The changing pattern of agricultural subsidies has a varying impact on different types of farming and therefore in different parts of the county:

- *Dairy* - a decline in milk prices and the impact of BSE on calf and dairy stock values has led to a decrease in profitability. The strong pound continues to reduce profitability and force smaller producers out of business. This will encourage the amalgamation of farm units, although lower milk prices and less labour means this may not necessarily lead to intensification of production. The vast sheds associated with intensive dairy farms have implications for visual amenity and there may be a greater risk of pollution from slurry storage and waste management. The smaller, remote producers with relatively higher costs for milk collection are most at risk
- *Lowland beef cattle and sheep* - the decline of dairy farming may encourage some farmers to change to beef and sheep, but

(1) Personal communication, Kirsty McKay-Martin, FRCA 27.6.00.
(2) Rural Development Regulation, Consultation on Implementation in England, MAFF, 1999.

the combined impact of BSE and a risk of oversupply mean that profits are low. Former dairy farms may be relatively accessible to markets and may force the more remote beef and sheep producers to diversify or leave farming. Since 1998 prices for finished lamb have fallen significantly with detrimental effects for both lowland and upland producers. Expansion and possible intensification of operations increases competition with upland producers and may result in the amalgamation of farm units.

- *beef cattle and sheep* (Less Favoured Areas) - anxiety about low incomes is exacerbated by concerns about the impacts of the Countryside Bill (designations and increased public access) and lack of pension provision for an ageing population of farmers. With lower profitability, the next generation are leaving farming and many upland farms are likely to be abandoned or amalgamated into large estates, especially if pressure is increased by new competition from the lowlands. Commoning is also in decline with relatively few young graziers with the will or expertise to manage commons flocks. The remaining common grazing land is under pressure from urban expansion or reversion to scrub. However, an increased commitment to developing regional red meat brands (as encouraged by the Bowland Initiative) could bring positive benefits.
- *Cereals and general cropping* - the arable sector is under pressure to improve storage and handling facilities but market prices and therefore profitability are low. The result may be further intensification of production, with potential loss of hedgerows and increased use of chemical fertilisers, but could equally be in the opposite direction in order to reduce input costs. The main impact of CAP reforms is expected to be an increase in the relative profitability of oilseeds and protein crops in comparison to cereals. The current proposals appear to discourage rotational cropping and integrated crop management systems which are of benefit to the environment through increased biodiversity although farm assurance schemes increasingly involve optimising inputs used and environmental *care*.
- *Pigs and poultry* - profitability is affected by the strong pound, increased input costs and a general oversupply in Europe. However, the increase in the popularity of white meat has been a positive boost. The banning of battery cages in 2012 will have a significant impact on poultry farmers as many producers will look to free range production on larger areas of land. In 2003 battery farmers will be legally required to reduce their stocking density by 20%, which could lead to an equivalent expansion in the area needed for the same number of hens. The ultimate outcome could be the concentration of poultry farming into a small number of very large producers.
- *Horticulture* - remains unsupported by grants and is also threatened by the strong pound. Further pressure will arise from the forthcoming *Climate Change Levy*, which will require glasshouse producers to pay a tax on their use of gas, electricity and coal in an effort to reduce CO2 production. Supermarkets have also reduced the viability of large wholesale markets as they approach a small number of large producers forcing smaller producers out of the market. Climate change, and in particular rising sea levels is also a considerable threat to horticulture which tends to be located on low lying, drained peats close to the coast. The implications of this may be the abandonment of horticulture in favour of other farming or amalgamation into larger and more intensive units.

2.5.4

Diversification

Poor profits in all sectors of the agricultural economy are fuelling a general trend towards the diversification of farming activities. Innovative marketing and quality assurance are required to ensure that less productive crops and livestock provide a viable alternative to traditional farming. Farms are also becoming increasingly active in the fields of tourism and recreation.

Alternative products such as industrial crops (flax and hemp for example) and the production of biomass fuel may be important as the Non-Fossil Fuel Obligation (NFFO) requires regional electricity companies to

obtain a proportion of their power from renewable energy sources. This represents an important opportunity, especially in the lowlands, where the skills and infrastructure required are generally already in place.

There is likely to be a continued transition to organic production, both of livestock and crops, particularly now that increased support is available. For example, organic beef producers have developed a small but growing market for organic meat and have organised themselves into a marketing organisation known as the "Organic Livestock Marketing Co-operative". Currently organic production in Lancashire is limited in scale and extent although there are good opportunities in West Lancashire, where supermarkets may raise demand for organic vegetables.

There is considerable scope in Lancashire for further development of accommodation and recreational facilities in rural areas, although this is a very competitive sector. Those farm businesses most in need of an additional income source are often the least able to raise the high levels of investment capital required to establish accommodation or recreational/ leisure facilities. Tenant farmers will also be inhibited from developing schemes due to the restrictions of tenancy agreements. However, the availability of grant aid via the Farm Tourism Initiative should go some way to alleviating this problem.

Other farm based businesses, such as passive lets and storage, may be constrained by accessibility. In remote rural areas the development control process may also limit this type of diversification.

Many farmers have alternative sources of income, particularly if they have access to regional town centres. There has also been a significant increase in hobby farming, which may bring related problems of short term management regimes and lack of traditional agricultural skills. Horse paddocks and 'horsiculture' are a particular feature of this trend and may be associated with a relatively cluttered landscape character. and in particular around urban centres. The abandonment of urban fringe areas (such as parts of Chorley, Blackburn, Hyndburn, Rossendale and Pendle) by full time farmers and their replacement with 'hobby farmers' ranging from scrap merchants to owners with substantial capital to invest, is having a significant landscape impact.

2.5.5

Summary of Key Issues for the Agricultural Sector

- *The influence of national policies,* driven by the changing structure of agriculture and other rural development subsidies at a European level.
- *A decline in traditional land management practices due* to intensification has caused the removal of biologically diverse and uncommon habitats including herb-rich hay meadows and pastures and some natural wet grasslands. It has also led to formally common and characteristic wildlife species becoming rare. It may also lead to the abandonment of traditional buildings, degradation of field boundaries etc. Conversely, complete abandonment of the uplands and commons could in future lead to the neglect of habitat and even to scrub encroachment, although these effects can be positive in nature conservation terms.
- *Erosion of peat based soils has implications for soil quality and places the rich archaeological record at risk.*

A *wholesale fall in agricultural markets* may lead to the abandonment or amalgamation of farms as the next generation perceives agriculture to be an unattractive option. The forecasts [1] suggest that over the next 5 years between 10% and 15% of full time farmers will go out of business. Agri-environment schemes and grant aided diversification will help in the short term, but the agricultural economy is in crisis and change threatens rural economies, landscape character, visual amenity and skills. Lancashire farmers and growers could benefit by marketing themselves as environmentally friendly producers from a county which nevertheless retains a high diversity of habitats and wildlife overall.

- *Diversification of farm businesses* continues to supplement agricultural incomes, with benefits for managing traditional attractive farming landscapes, although some areas have more potential for landscape

(1) Farming and Rural Issues in Lancashire, FRCA, January 1999.

enhancement through diversification than others. Diversification may not always be beneficial in landscape terms.

- *The poor agricultural economy and increasing competition from lowland farms* may make it difficult for upland farmers to make a living from their land and cause abandonment.
- *An increase in part time 'hobby' farming* with related farm fragmentation, loss of traditional farm boundaries and decline in traditional land management strategies in favour of short term gains.
- *The influence of policies of large retail chains* on agricultural practice is becoming an increasingly important factor in landscape terms by imposing restrictions and conditions on the environment in which their crops are grown.

2.6

FORESTRY AND WOODLAND

Approximately 14,000 hectares of land in Lancashire is wooded, representing a relatively low 4.6% of woodland cover (compared to 8% for England [1] . Woodland is scattered over the whole county, but is particularly sparse on the uplands of east Lancashire and on large areas of highly productive land in the west of the county. Over 60% of the woodland is found in the districts of the Ribble Valley and Lancaster. The composition of the woodland is approximately 60% broad-leaved, 30% coniferous and 10% mixed; woodland of coppice origin covers less than 1% of the area. Ancient woodland is also important and covers 34% of the total wooded area. It is concentrated on the steep sided river and stream slopes of the Ribble, Wyre and Lune River catchments and in the Arnside and Silverdale AONB.

In Lancashire the Forestry Commission owns approx. 2000 of the 14,000 ha total woodland cover. Despite there being relatively little forestry tradition, the proximity to good transport links and major timber processing industries does offer great potential. 65% of private woodlands are less than 5 hectares and the only sizeable area of woodland is Gisburn Forest, which was planted in the 1950's. Here the land is owned by North West Water (one of the largest woodland owners in the county) and leased to the Forestry Commission.

Woodland on farms comprises 20% of the total area of woodland in Lancashire. In a recent farmers' attitude survey to woodland planting and management [2] it was found that of the 50 farmers interviewed 60% of farmers had considered woodland planting but 80% of these had shelved the idea because of the economic climate and the lack of suitable land.

Photo 6. Woodland in the Arnside and Silverdale AONB.

(1) England Forestry Strategy, Forestry Commission, 1999.

(2) Farmers' Attitude Survey - A Survey of 50 Farmers in Lancashire to determine their attitude to Woodland Planting and Management, Dr Margaret Bell, 1998-9.

It would appear that there was also a lack of understanding and guidance as to the benefits of woodland creation and management. The survey confirmed the general lack of a tree planting tradition or culture amongst farmers in Lancashire.

2.6.1

Government Policy

Since the turn of the century successive governments have pursued policies of forest expansion through felling controls, planting incentives and afforestation. The Forestry Commission is the government's lead department for forestry and current policies for forestry development in England are expressed through the England Forestry Strategy,[1] which focuses on the delivery of public benefit via delivery of four programmes for forestry:

- rural development;
- economic regeneration;
- access, recreation and tourism; and
- environment and conservation.

These programmes, delivered via integrated partnership working, will ensure the quality of new woodlands and the management for multiple benefits of existing woodland.

Incentives

The Woodland Grants Scheme (WGS) is managed by the Forestry Commission. It is the principal government incentive scheme encouraging new planting and woodland management on privately owned land. Incentives available include one-off payments per hectare for restocking and annual payments for management and enhancing public access. Payments are also available for bringing abandoned woodland back into management. The creation of holistic Forest Plans by private woodland owners is also supported by the WGS system. In addition the Farm Woodland Premium Scheme offers grants to farmers to plant trees on improved agricultural land. Of the 10,481 ha of privately owned woodland in Lancashire, 4,347 ha are managed with assistance from WGS (or other) grants.[2]

Countryside Stewardship is also available as a grant source for small-scale woodland planting on farms.

Targeting

Recently the Forestry Commission introduced a scoring system for targeting WGS for woodland creation. It is based on the provision of public benefit. The England Forestry Strategy also identifies four priorities for woodland creation: the creation of larger woodlands, where they can deliver greater benefits; the creation of woodland on the urban fringe; the restoration of former industrial land; and reversing the fragmentation of ancient woodland.

Indicative Forestry Strategy

The expanding forest resource is today required to fulfil a diverse range objectives from timber production, landscape enhancement, employment, wildlife conservation farm diversification and education. In Lancashire, an Indicative Forestry Strategy[3] identifies areas in which afforestation would be preferred (much of the lowlands with the exception of productive agricultural land) and areas which would be particularly sensitive to forestry (high grade agricultural land, AONBs and areas over 300m above sea level). 'Sensitive areas' do not preclude tree and woodland planting, although the Strategy states that:

- special landscape features are of paramount importance;
- there will be an emphasis on the renewal and enhancement of existing woodlands, hedgerows and hedgerow trees;
- new planting must be sympathetic with existing landscape character;
- where it is part of agricultural diversification planting should be in keeping with a highly productive and well ordered landscape;
- where it occurs on land 300m above sea level planting should consist of native species and not intrude on the predominantly open, unenclosed uplands.

(1) Forestry Commission, The England Forest Strategy.
(2) Personal communication - Kit Brown, Assistant Conservator, Forestry Commission 27.6.00.
(3) An Indicative Forestry Strategy for Lancashire, Lancashire County Council, October 1994

2.6.2

Opportunities and Current Initiatives

There is great potential to deliver public benefit via woodland creation and management in Lancashire. A number of initiatives have been developed in order to achieve this:

- *The Bowland Initiative Woodland Project* is part of the Bowland Initiative which aims to support farmers and rural businesses in the Objective 5b area. The initiative promotes sustainable woodland management by offering advice and financial assistance, adding value to woodland products to provide opportunities for income generation, and initiating training in woodland skills including farm woodland management, deer and squirrel management and small business skills. There is also some scope for creating new native woodland [1]
- *The Millennium Forest of Burnley* is funded by the Millennium Commission and Forestry Commission in partnership with Burnley Borough Council, North West Water, Lancashire County Council, private landowners, local business and the community. With a total budget of £3.5m the project aims to create 500 ha of new woodland, restore 200 ha of neglected woodland, plant 2000 specimen trees within Burnley (to create an 'Urban Arboretum') and encourage an arts and education programme to raise public appreciation of trees. By 2001 it is hoped that woodland cover in Burnley will be increased from 3% to 7%, only 3% short of the average for Britain. The Forest of Burnley applies for grants on behalf of private landowners to ensure that they do not incur costs.
- *ELWOOD* is an ambitious scheme promoted by a partnership between Groundwork, local authorities, the Forestry Commission, Lancashire Wildlife Trust and the National Urban Forestry Unit. It aims to contribute to economic regeneration through environmental improvements and job opportunities by developing a network of locally initiated woodland schemes. The woodlands will form the focus for recreation, education and cultural activities and will provide a quality environment for local communities.

2.6.3

Summary of Key Issues for Forestry

- *Inadequate realisation of the wide range of public benefits to Lancashire that woodlands can provide.*
- *Ensuring the development and extension of partnership initiatives* such as ELWOOD, the Burnley Millennium Forest and the Bowland Initiative.
- *Lack of a forestry tradition and small woodland resource* which hampers woodland management and provides poor economic return.
- *Restructuring of existing woodlands* using Forest Design Plans to achieve multi-purpose woodlands.
- *The impact of woodland management grants* on improving biodiversity and public access.
- *Lack of management and natural regeneration* in many small semi-natural woodlands due to livestock grazing and also deer.
- *Encouragement of sustainable woodland management through the development of markets for woodland products* to prevent deterioration of the woodland resource.
- *Increasing the area of woodland cover* as outlined in the England Forestry Strategy and ensuring that local forestry strategies are cross-compliant.

2.7

TOURISM AND RECREATION

Tourism is a significant economic activity in Lancashire; in 1991 there were 51,000 people employed in tourism-related activities.[2] A significant proportion of visitor trade is centred upon Blackpool, the most popular holiday resort in Britain in 1996 when it attracted 20 million visitors (and provided 30,000 jobs). The nearby coastal resorts of Morecambe, Cleveleys, Fleetwood and Lytham St Annes also attract millions of visitors each year.

Tourist pressure is however not confined to these honeypot destinations and the increasing popularity of informal country breaks and

(1) The Forest of Bowland - The Potential for Creating New Native Woodland, English Nature (Rigby Jerram), 1999.
(2) A Tourism Strategy for Lancashire, Lancashire County Council, 1995.

Photo 7. Visitor Pressure, Nick of Pendle.

countryside activities places pressure upon rural Lancashire. Walking, especially in open countryside is a major recreational pursuit and proposed new open access legislation could change patterns of existing activity. There is increasing interest in visits to scenic countryside such as the Forest of Bowland, the West Pennine Moors and Arnside and Silverdale, as well as to historic sites, such as Gawthorpe Hall, Turton Tower and Helmshore Mill. The quality of the county's landscape and its associated natural attractions including its wildlife are in themselves highly important in economic terms through tourism and recreation. Recent studies [1] have shown that the natural environment in the Morecambe Bay area and at the RSPB reserve at Leighton Moss make a significant contribution to the local economy in this way.

Appropriate tourist development in rural areas can help to diversify local economies, enhance the countryside and create new jobs. Initiatives such as the Bowland Tourism Environment Fund may be successful in raising moneys from the tourism industry for environmental care/management. Farm diversification is recognised as an important way of maintaining the viability of small farm holdings, allowing farmers to remain on the land and continue to practice traditional farming activities. However increases in traffic, litter, signage and built development may threaten visual amenity and landscape character.

Caravans, chalets and holiday villages may intrude on the rural nature of some areas as they create a built environment often similar in scale to villages and introduce infrastructure, buildings and domestic features such as gardens. Key areas under particular threat are the Fylde (Landscape Character Area 15d) and North Fylde Mosses (16a) because they are close to coastal resorts. Restored gravel pits are also often a focus for intensive recreational use, as at Dock Acres, where there are proposals for a holiday village and leisure centre.

There are ongoing pressures for multi-purpose entertainment, recreation and retail centres. Such developments often require extensive land and generate large volumes of traffic as they increasingly cater for a range of interests. Sites are often chosen for their proximity to large populations and may place pressures upon land within the Strategic Transport Corridors [2] However, these large scale leisure developments may represent a positive

(1) Morecambe Bay Strategy, October 1996.
(2) Lancashire Structure Plan 1991-2006, Policy 33, Lancashire County Council, 1997.

catalyst for the regeneration of derelict land and can help to steer pressure away from more sensitive areas and attractions.

Golf courses can be intrusive features in the landscape where their design introduces uncharacteristic features such as formal ornamental planting blocks, mown amenity grass or bunkers to an otherwise rural scene. They are often proposed as part of a recreational development at historic country houses and can represent a threat to the integrity of historic designed landscapes.

Equestrian centres are an opportunity for rural diversification, although large indoor riding schools, stables and paddocks with floodlighting can be detrimental to landscape character. At particular risk are rural areas on the fringes of settlements.

The rising popularity of canal holidays offers a positive opportunity to utilise the extensive canal network in Lancashire which totals 164.8 km [1] . The Ribble Link Trust plans to construct a link between the Lancaster Canal and the River Ribble, creating a navigable link between the Ribble Estuary and the Lancaster Canal and allowing boats to enter the Leeds and Liverpool Canal. This new link will increase the length of the navigable watercourse and will provide a range of new opportunities for tourism and recreation, such as marina developments. [2] There is also likely to be increased pressure for new marinas on the existing Lancaster Canal. The Lancaster Canal is the largest and most species-rich water body in the county. At present the number of boat movements on the Canal is at near optimum levels for wildlife, but there is a risk that new developments for recreation and the increase in boat traffic on the Ribble Link Extension, may cause conflict with nature conservation interests; research undertaken at Liverpool University [3] indicates that increased boat traffic above a fairly low threshold significantly reduces biodiversity and increases erosion.

Photo 8. Lancaster Canal at Galgate.

2.7.1

Summary of Key Issues for Tourism and Recreation

The unique landscape, historical and ecological qualities of Lancashire are vulnerable to the changing pressures from tourism and recreation. These include:

- *erosion of tracks, footpaths and associated vegetation* through walking, horse riding, mountain biking are county wide, but are particularly visible in upland areas;
- *realising the economic potential of the natural environment* without detriment to the environmental resource;
- *pressure for amenity and recreational facilities* such as golf courses and marinas, which are often associated with new housing or hotel developments, and holiday villages and caravan parks - all of which may have adverse impacts on landscape character;
- *increase in traffic levels,* particularly on quiet rural roads , which may erode their character;
- *significant landscape impacts arising from the spread of large scale multi-purpose recreation developments* on the outskirts of urban centres;
- *effects on water quality and pressure on nature conservation interests* as a result of the rising popularity of canal holidays.

(1) Lancashire - A Green Audit, Lancashire County Council, 1990.
(2) Local Environment Agency Plan. Ribble Consultation Draft, The Environment Agency, 1999.
(3) Effects of Pleasure-Boat Traffic on Macrophyte Growth in Canals, K J Murphy and J W Eaton, in Journal of Applied Ecology (1983), 20, 713-729, Dept of Botany, University of Liverpool.

2.8

WATER BODIES & WATER QUALITY

Lancashire's upland streams, large lowland rivers and estuaries vary considerably in volume, quality and biological value. On the whole water quality in the rivers is good. Even with industrial and sewage discharges the majority of rivers (72%) are classified as Class 1a, 1b ('good') or 2 in accordance with the standard UK river water quality classification scheme. Only 5% are classified as Class 4 ('bad'). [1]

Local water channels, such as streams and ditches, are of particular nature conservation interest, as are ponds, lakes and the county's 118 reservoirs. Many of Lancashire's water bodies are man-made and originate from historic marl pits, mill lodges or more recent sand and gravel extraction.

Areas of high pond density are found in parts of the Coastal Plain and Undulating Lowland Farmland (particularly in Landscape Character Areas 15b, 15c, 15d, 5c, 5d, 5h). They are of landscape and heritage interest, as well as valuable habitats for wildlife. Numerous ponds have been infilled in the past during phases of agricultural intensification. The remaining ponds are under continual threat from development, changes in agricultural practices, infilling and nutrient enrichment. Their value is greatly increased when they form part of a linked network of habitats and their fragmentation is therefore also a considerable risk to their wildlife value. Other important water bodies include meres and tarns, such as Leighton Moss and Martin Mere.

Lancashire's rivers and streams vary from the fast flowing upland streams and rivers of Bowland and East Lancashire to the wide meandering rivers Lune, Ribble and Wyre. Lancashire's two canals; the Leeds and Liverpool and the Lancaster canal and their corridors are important landscape features.

The increased use of river and canal corridors for recreation can disturb plant and bird life in particular and, locally cause bank erosion. In rivers such as the Wyre, historic water abstraction rights may cause artificially low flows, leading to detrimental effects to fauna and flora and the loss or deterioration of wetland features. Variations in agricultural practices and increases in visitor pressure may result in the increased occurrence or magnitude of these problems.

Slurry and silage liquor discharges from farms with inadequate containment facilities, the spreading of slurry to land and discharges from small private sewage works treatment works and septic tanks all contribute to rising ammonia levels in rivers. Run-off from fields containing fertilisers and pesticides may also be extremely damaging to water quality in local water courses (eutrophication). This form of pollution can effect water quality for flora and fauna and in particular fish and can be minimised by the development of buffer strips between fields and water-courses to limit run-off from agricultural areas. It is likely that the move to more intensive dairying operations will result in increased levels of slurry and there is a risk that any increase in holiday homes and caravans not linked to the main sewage network will result in rising ammonia levels throughout the river network, in particular in rural areas.

Increased residential and commercial development threatens water courses as the existing sewer capacity may become inadequate. The consequences include the deterioration of water quality or an increase in the scale and number of sewage treatment works, particularly on the fringes of large urban areas.

Large chemical, industrial and landfill sites (such as the concentration along the open coastal marsh near Fleetwood), are of particular concern because there is a risk of leachate and discharges into water courses. Although strict controls are placed on the level and type of discharges permitted, the expansion of existing operations or siting of new factories in the area raises the potential for poor storage and accidental spillage, with subsequent contamination of groundwater and water courses. Proposals for redevelopment of industrial areas may also lead to the discovery of contaminated land which will require appropriate remediation techniques to reduce the risk of contamination of groundwater and local water courses.

All major roads are constructed with drainage systems designed to remove surface water and pollutants and drain into the nearest available

(1) Figures from North West Water 1998, in Lancashire - A Green Audit, Lancashire County Council, 1990.

watercourse. Road improvements place an added burden on the aquatic environment affecting both the risk of flooding and the increased pollution load. Similarly increases in urban development and industrial activity influences the amount of waste produced and place increased demands on water resources. (1)

2.8.1

Summary of Key Issues for Water Quality and River Flows

The most significant pressures on water flows and quality are:

- *loss of ponds and coastal wetland habitats;*
- *bank erosion* from recreational pressures;
- *water abstraction* lowering water levels;
- *eutrophication and raised ammonia levels* as a result of increases in farm slurry production and residences not linked to the sewage network;
- *increased residential and commercial development* placing pressure upon sewer capacities;
- *the potential impact of chemical and industrial industries* especially where expansion of existing operations or the siting of new operations occurs;
- *increased run off from new roads and built development* into nearby water courses.

2.9

AIR QUALITY AND CLIMATE CHANGE

The release of pollutants into the air may influence air quality and climate change. Air pollution can also affect health and biodiversity; sensitive species such as lichens, habitats which are naturally low in nutrients, and habitats on acid soils or in acid waters are particularly at risk. Air quality in Lancashire is likely to be far better now than in the past. This is evidenced by the spread of pollution sensitive lichen species into areas where they were previously absent. (2) Nevertheless, air quality is a significant issue in Lancashire as industrial areas along the coast are close to sensitive wetland and upland habitats.

The global climate is expected to change as a result of burning fossil fuels, methane and nitrous oxide from agriculture, industry and waste disposal. Expert judgement suggests that climate change in North West England will result in increased temperatures (0.1 o/c to 0.3 o/c per decade), more winter rainfall (between 6% and 14% increase by 2050's), higher wind speeds, fewer winter frosts, perhaps more variable weather, higher sea-levels and perhaps more stormy weather and higher wave heights. (3)

Climate change is already happening and projections into the next century suggest that it will influence a great many physical, chemical, biological and human activities, including changing the appearance of the landscape, coastline and urban infrastructure. Global warming is accompanied by the prospect of world wide sea level rise. The average global sea level rise is expected to be 6 cm per decade over the next century (4) , mainly caused by thermal expansion of the oceans and melting of low level land ice.

In Lancashire the coastal zone will be subject to increasing risk of tidal inundation from a combination of high tides, tidal surges and high waves in the Irish Sea. Much of Lancashire has a low lying coastline which is already at risk from flooding. Increased wind speeds may also threaten coastal copses. Lancashire's existing coastal defences do not take account of climate change induced wave height and the frequency of tidal surges. The loss of mudflats and salt marshes would have major impact on the internationally significant bird feeding grounds found in the extensive bays and estuaries. Ports, harbours, resorts, coastal industries and occupations such as farming or fishing are also vulnerable to more extreme tidal events. Dredging of harbours may also need to be increased as a result of increased silt levels bought in by rivers and wind blown maritime silt driven by the increased speed of south westerly winds.

The uplands too could change significantly in character as a result of warmer, wetter conditions. The changes could affect soils, moorland vegetation and those upland animal and plant communities which are adapted to a relatively cold maritime climate. There will be an inward migration of new species, an outward migration of marginalised species and

(1) Local Environment Agency Plan, Wyre Consultation Report, Environment Agency 1997. (2) Biological Heritage Sites: Guidelines for Site Selection, Lancashire County Council, 1998. (3) Everybody has an Impact - Climate Changes in the North West of England, An Initiative of the North West Climate Group. September 1999. (4) As stated by the Intergovernmental Panel on Climate Change 'Business as Usual' scenario, 1990.

an increased risk of upland fires which damage the economy of upland estates and their ecological value.

2.9.1

Summary of Key Issues for Air Quality and Climate Change

The most significant pressures from air pollution and climate change are:

- *potential loss of inter-tidal and other coastal habitats and biodiversity due to rising sea levels;*
- *loss of species at the edge of their range due to the impacts of species competition and migration;*
- *impact on sensitive species such as lichens which are particularly susceptible to air pollution;*
- *gradual changes in wildlife communities in response to climate change, pests and fire hazard;*
- *increase in tidal surges, high waves and coastal winds which will have implications for coastal defence works.*

3.

Landscape Strategy

The *strategies* for each landscape character type are based on the landscape characterisation set out in the accompanying *Landscape Character Assessment* report. The landscape characterisation provides a classification of the landscape into landscape units and a baseline description of landscape character. The landscape character types and landscape character areas identified in the study are presented in *Figure 2.*

The landscape character type strategies take the analysis a step further; the descriptions form the basis for an analysis of landscape sensitivity and vulnerability to change, developing key recommendations to guide positive landscape change. Each of the landscape character type strategies includes:

- *Key environmental features* - Those environmental features which make the most critical contribution to the character of the landscape. The notes identify key environmental features for each landscape character type and record why they are important. These features do not necessarily occur in all the landscape character areas within a particular landscape type.
- *Local forces for change and their landscape implications* - those forces for change which in the context of existing AONB designations and prevailing planning policies generally, are likely to have most impact on landscape character in each landscape character type.
- *Strategy* - this section identifies the strategy for each landscape character type, based on the identification of key environmental features and local forces for change. Recommendations to guide landscape change are provided for each strategy.
- *Potential indicators for monitoring landscape change* - potential indicators are based on key environmental features which are : a) subject to change under existing pressures, and b) which can be developed to give actual indicators which can be measured in some way. Economic pressure for changes are offset by controls (principally the planning system) and incentives (e.g. Countryside Stewardship). They may inform a broad county-wide programme for monitoring landscape change (and the implementation of the strategy) which is described in Section 4 (and in the supplementary report 'Monitoring Landscape Change ').

Landscape Character Areas

1 Moorland Plateaux
1a. South Pennine Moors
1b. High Bowland Plateaux

2 Moorland Hills
2a. West Pennine Moors
2b. Central Bowland Fells
2c. Longridge Fell
2d. Waddington Fell
2e. Pendle Hill
2f. White Moor/Burn Moor
2g. Beacon Fell

3 Enclosed Uplands
3a. Rossendale Hills

4 Moorland Fringe
4a. Trawden Fringe
4b. Rossendale Moorland Fringe
4c. Blackburn Moorland Fringe
4d. Bowland Gritstone Fringes
4e. Bowland Limestone Fringes
4f. Longridge Fell Fringes
4g. South Pendle Fringe
4h. Leck Fell Fringe
4i. North Pendle Fringe
4j. West Pennine Fringes

5 Undulating Lowland Farmland
5a. Upper Hodder Valley
5b. Lower Hodder and Loud Valley
5c. Lower Ribble
5d. Salmesbury-Withnell Fold
5e. Lower Ribblesdale (Clitheroe to Gisburn)
5f. Lower Ribblesdale (Gisburn to Hellifield)
5g. South Bowland Fringes
5h. Goosnargh-Whittingham
5i. West Bowland Fringes
5j. North Bowland Fringes
5k. Cuerden-Euxton

6 Industrial Foothills and Valleys
6a. Calder Valley
6b. West Pennine Foothills
6c. Cliviger Gorge
6d. Adlington-Coppull

7 Farmed Ridges
7a. Mellor Ridge
7b. Upholland Ridge
7c. Langthwaite Ridge

8 Settled Valleys
8a. Irwell

9 Reservoir Valleys
9a. Rivington
9b. Turton-Jumbles
9c. Haslingden Grane
9d. Belmont
9e. Roddlesworth

10 Wooded Rural Valleys
10a. Wyre Valley
10b. North Bowland Valleys

11 Valley Floodplains
11a. Lower Ribble Valley
11b. Long Preston Reaches
11c. Aire Valley
11d. Lune Valley

12 Low Coastal Drumlins
12a. Carnforth-Galgate-Cockerham
12b. Warton-Borwick
12c. Heysham-Overton

13 Drumlin Field
13a. Gargrave Drumlin Field
13b. Bentham-Clapham
13c. Docker-Kellet-Lancaster

14 Rolling Upland Farmland
14a. Slaidburn-Giggleswick
14b. Lothersdale and Cringles

15 Coastal Plain
15a. Ormskirk-Lathom-Rufford
15b. Longton-Bretherton
15c. Croston-Mawdesley
15d. The Fylde
15e. Forton-Garstang-Catterall
15f. Knott End-Pilling

16 Mosslands
16a. North Fylde Mosses
16b. South Fylde Mosses
16c. Martin Mere and South West Mosses
16d. Skelmersdale Mosses
16e. Tarleton Mosses
16f. Heysham Moss
16g. Hoole and Farington Mosses

17 Enclosed Coastal Marsh
17a. Clifton and Hutton Marsh
17b. Cockerham Coast

18 Open Coastal Marsh
18a. Ribble Marshes
18b. Hest Bank-Silverdale Marshes
18c. Wyre Marshes
18d. Lune Marshes
18e. Pilling and Cockerham Marshes

19 Coastal Dunes
19a. Fylde Coast Dunes

20 Wooded Limestone Hills and Pavements
20a. Arnside and Silverdale

21 Limestone Fells
21a. Leck Fell

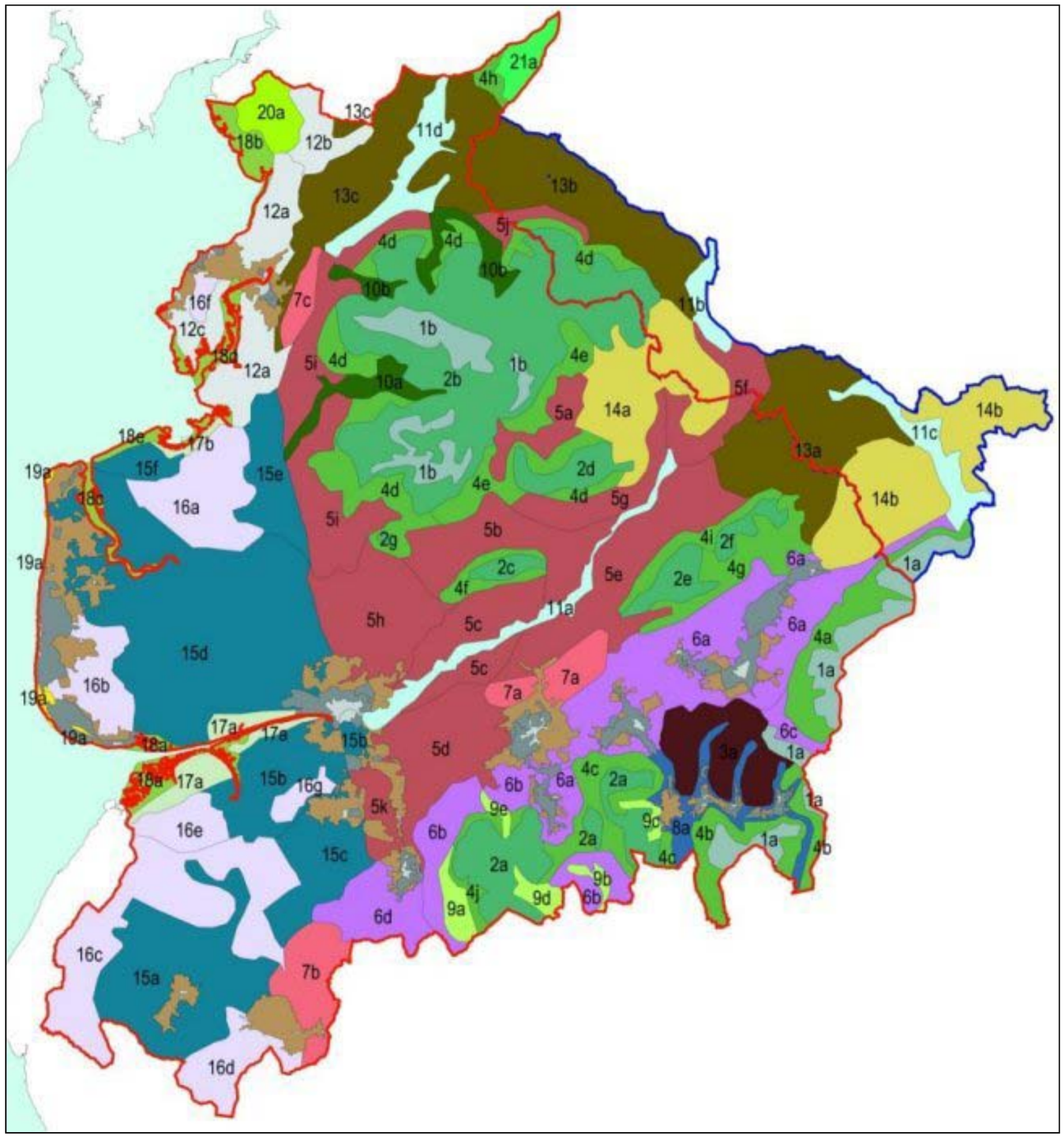


Figure 2: **Landscape Character Types & Landscape Character Areas**

Lancashire County, Blackpool and Blackburn with Darwen Boundary

Craven Study Area

Landscape Character Types & Areas

1 Moorland Plateaux
1a. South Pennine Moors
1b. High Bowland Plateaux

2 Moorland Hills
2a. West Pennine Moors
2b. Central Bowland Fells
2c. Longridge Fell
2d. Waddington Fell
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5j. North Bowland Fringes
5k. Querden-Euxton

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6c. Clviger Gorge
6d. Adlington-Coppull

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7a. Mellor Ridge
7b. Upholland Ridge
7c. Langthwaite Ridge

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8a. Irwell

9 Reservoir Valleys
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19a. Fylde Coast Dunes

20 Wooded Limestone Hills and Pavements
20a. Arnside and Silverdale

21 Limestone Fells
21a. Leck Fell

Urban Landscape Types
Historic Core
Industrial Age
Suburban

Coastline

Key and Full List of Landscape Character Areas on page 26.

Scale approx 1:325,000 at A3 page size

1

MOORLAND PLATEAUX

Character Areas

1a South Pennine Moors

1b High Bowland Plateaux

Key Environmental Features

- ***A perception of remoteness, isolation and wildness*** because of the altitude, absence of trees and settlement, as well as expansive views;
- ***Unenclosed mosaic of upland habitats,*** including blanket bog habitat, wet heathland, dry heathland and acid grassland which together support an internationally important range of bird species.
- ***Heather moorland and blanket bog is of international importance,*** supporting a specialist flora and associated fauna (including upland bird communities) and representing a habitat of which the UK has 7-13% of the global resource.
- ***Important archaeological landscape*** with much prehistoric interest (burial mounds, cairns) which provides a significant archaeological and paleo-environmental resource.
- ***Strong cultural associations*** - powerful influence on and inspiration for the writing of the Bronte sisters, among others.
- ***Distinctive landform of terraces and gritstone edges*** reflecting the underlying geology and process of weathering. Frost weathered crags and regoliths are prominent features.
- ***Quarries and hushings*** - several natural and quarried locations are geological SSSIs. The limestone hushings are unique nationally.

Local Forces for Change and their Landscape Implications

- ***Applications for new wind farm developments*** as these elevated landscapes have the potential for relatively high wind speeds. ***The Moorland Plateaux are also under pressure for communication masts.*** Both types of development have the potential to clutter skylines which form a backdrop to views across Lancashire. They may also disrupt the special visual and perceptual qualities of openness, remoteness, wildness and isolation which are associated with this landscape type.
- ***Abandonment of hill farming*** due to the ongoing economic pressures on agriculture and the changing structure of agricultural subsidies. This may lead to the loss of grazed upland grass swards. Conversely, such abandonment may lead to an increase and improvement in nature conservation terms to habitats such as blanket bog or heather moor as well as increased diversity in areas of land formerly improved for agriculture.
- ***Moorland drainage*** - there are continuing pressures for the drainage of blanket bogs in some areas.
- ***Pressures for informal recreation*** which may cause erosion to moorland habitats and important archaeological sites. This is particularly relevant in south east Lancashire (LCA 1a) where the Moorland Plateaux are on the far western fringes of the Pennines. Here the moorland landscapes are often in a slightly degraded condition as they are close to some of the most extensive urban areas in Lancashire.

Expansion of existing gritstone quarries in Rossendale is likely to occur within currently permitted limits as the planning permissions are extensive and run for long periods. However there is pressure locally for new permissions. Heald Moor near Burnley has extensive areas of incompletely restored open cast coal workings, which it is proposed to rework prior to restoration.

Landscape Strategy for the Moorland Plateaux

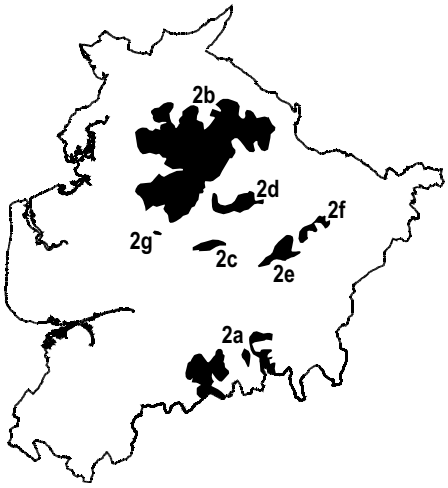
Strategy	Recommendations
Conserve the distinctive remote character of the open moor	• severely restrict all forms of built development and new quarrying
	• avoid vertical structures on skylines in applications for communication masts and wind farms
	• avoid large-scale tree planting - natural regeneration and the planting of native woodlands may occasionally be appropriate on a small-scale in the sheltered valleys or clough heads
	• ensure that visitor facilities such as car parks, signs and interpretation boards are not located on the Moorland Plateaux and discourage vehicular access
Conserve the valuable mosaic of moorland habitats	• recognise and respect the special importance of the blanket bog as a habitat and a unique archaeological or palaeo-environmental resource - the peat should not be further depleted or degraded.
	• conserve remnant ancient semi-natural woodlands
	• monitor levels of grazing so that the quality of moorland habitats is conserved
	• prevent the encroachment of other land uses to reduce the threat of habitat fragmentation
	• maintain a balance between bracken and acid grassland - avoid the excessive use of herbicides to control bracken where it leads to the degradation of vegetation
	• educate visitors so that the risk of accidental fires/vandalism is reduced as the peat is particularly susceptible and would take decades to recover
Conserve and manage archaeological sites	• undertake more detailed survey, assessment and evaluation of the resource
	• use the assets of the historic environment to explain the origins and development of moorland
	• ensure that archaeology is recorded or not disturbed in all land management proposals
Restore eroded areas of moorland where recreation has caused degradation	• manage recreation on the fringes of the Moorland Plateaux by deflecting pressures from the more eroded areas and restoring degraded habitats and native woodlands
Restore gritstone quarries	• consider opportunities for the phased restoration of gritstone quarries, recognising that they are often prominent landscape features and have an intrinsic archaeological value, and that tree planting will rarely be appropriate
	• retain striking landscape features and maximise opportunities for ecological and historic benefits
Restore the degraded mosaic of upland habitats	• in particular seek to restore areas of degraded blanket bog by changing grazing regimes
	• fill in moorland drainage grips to reverse the impacts of past drainage and re-establish active blanket bogs

Strategy	Recommendations
	• where feasible extend the mosaic of moorland habitats downslope into the *Moorland Fringes* (landscape type no 4) with the aim of creating a softer transition between the grazed pastures and the upland moors.

Potential Local Indicators for Monitoring Landscape Change on the Moorland Plateaux

Potential Indicators	Pressure for change	Preferred direction of change
Blanket bog and heather moor	Loss due to over-grazing, burning/managed fires and erosion from recreational pressures	Increase
Exposed vast skies	Increased clutter by wind farms, communication masts and power lines	Maintain

2



MOORLAND HILLS

Character Areas

2a	*West Pennine Moors*
2b	*Central Bowland Fells*
2c	*Longridge Fell*
2d	*Waddington Fell*
2e	*Pendle Hill*
2f	*White Moor/Burn Moor*
2g	*Beacon Fell*

Key Environmental Features

- ***Exposed upland rolling landform*** affords long distance views across the valleys and to distant hill sides.
- ***A sparse settlement pattern*** of isolated stone farmsteads (and rarely, clustered upland valley hamlets) contributes to the characteristic sense of remoteness.
- ***Rushy and waterlogged marginal pastures*** provide valuable habitats for breeding wading birds.
- ***Dry stone walls of roughly hewn blocks with through stones*** reflect the exposed, upland setting and provide distinctive, memorable landscape patterns.
- ***Heather-clad hillsides*** produce dramatic swathes of colour in the autumn.
- ***Semi-natural clough woodlands reflect*** the topography and are important wildlife habitats.
- ***Large woodland blocks***, both deciduous and coniferous, provide shelter and habitats for wildlife.
- ***Streams and brooks*** create the distinctive deeply incised, narrow gullies on the smooth fell sides.
- ***Wealth of historical and archaeological interest*** reflects the historic evolution of the area and exploitation of its elevated profile eg Bronze Age tumuli on Waddington Fell.

Local Forces for Change and their Landscape Implications

- ***Pressure for expansion of settlement and the conversion of existing vernacular dwellings and farm buildings*** on the *Moorland Hills* may dramatically reduce the characteristic sense of exposure and isolation. Such development may also impinge on the historic setting of traditional vernacular buildings and walls, which are focal points in many views. Any associated ornamental garden planting of trees, shrubs would be prominent in this open, sweeping landscape and the requirements for further communication and service lines may also have a suburbanising influence.
- ***Restructuring of commercial forestry plantations*** may influence the shape of prominent plantations - in most cases new Forest Plans will promote positive landscape change; the outlines of existing plantations will become softer, with increased use of more broadleaved species and a more organic shape which reflects the local topography.
- ***Pressures for wind turbine developments and communication masts*** are likely to continue. Such developments can be intrusive if they create a cluttered skyline, particularly where the *Moorland Hills* form a backdrop to local views. In some cases the presence of existing vertical structures has the potential to create a cumulative impact which would be detrimental to the landscape character. Such developments and the infrastructure associated with them can be damaging to blanket bog habitat in particular.

Increasing pressures for recreation, particularly along the ridges, may damage the character and ecological value of the Moorland Hills. Eroded footpaths and parking adjacent to viewpoints are particular concerns, as it may be intrusive in isolated rural moorland areas. The impacts of fly-tipping and litter may also be intrusive.

Loss of stone walls and field patterns, which are gradually falling into disrepair due to the poor agricultural economy and their lack of practical use. In time, this will lead to the erosion of traditional and attractive field patterns.

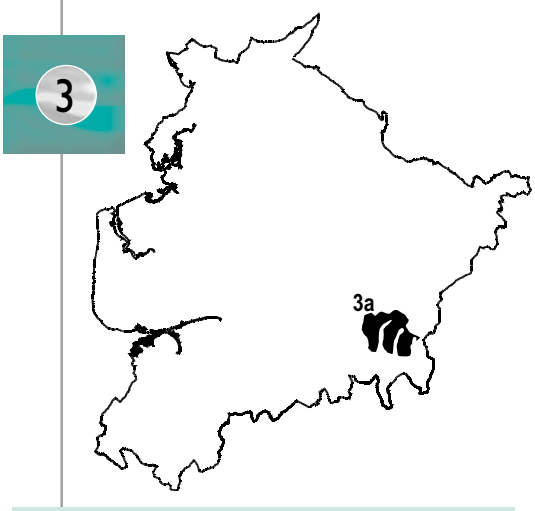
Landscape Strategy for the Moorland Hills

Strategy	Recommendations
Conserve the distinctive, historic character of the open moor	• avoid further construction of dwellings away from existing clusters of buildings in isolated hamlets and farmsteads and encourage a built form and landscape design which respects the inherent vernacular character associated with the exposed Moorland Hills • encourage the sympathetic renovation of derelict moorland farm buildings , giving particular emphasis to the potential impacts of new tracks and services. Consider whether such buildings might best be conserved in a derelict state • restrict ribbon development and retain characteristic open spaces and mature trees within settlements • buildings and walls should be of local stone (or the nearest match possible) • ensure proposals for woodland creation are appropriate in terms of species, scale and shape • restrict the approval of further communication masts - there may be scope to amalgamate services onto a single mast • visitor facilities and access routes require careful siting and design - using local materials - in these sensitive landscapes
Conserve the wealth of archaeological landscapes in the Moorland Hills	• avoid damage to archaeological sites through recreation, agriculture and forestry – archaeological assessment prior to all forms of development should be carried out where appropriate • consider the wider setting of historic or archaeological sites in all land management and site development schemes
Retain the characteristic pattern of gritstone walls	• restore walls, respecting local differences in style and construction • give priority to stone walls which form prominent patterns in long distance views, historic boundary walls and walls alongside footpaths/roads and near farms/settlements
Enhance the existing valuable mosaic of moorland habitats	• reverse drainage of blanket bog by blocking existing drainage grips • encourage extensive forms of agriculture, particularly in relation to grazing
Improve the shape and structure of existing forestry plantations	• encourage softer plantation outlines with shapes designed to integrate with local topography and with a relatively high proportion of broadleaves - this can be achieved through the Forest Plans process • incorporate biodiversity objectives into the design of plantations • give priority to planting which develops links to other existing woodlands

Strategy	Recommendations
Restore characteristic clough woodlands	• manage existing ancient semi-natural woodlands • encourage stockproofing of woodlands to allow regeneration • gradually remove invasive exotic species • plant new woodlands within cloughs to link existing fragmented woods and improve habitats, shelter and scenic value, avoiding valuable existing grassland habitats or flushes

Potential Local Indicators for Monitoring Landscape Change on the Moorland Hills

Potential Indicators	Pressure for change	Preferred direction of change
Condition and length of dry stone walls	Deterioration because of neglect and eventual loss	Repair
Area of semi-natural clough woodland	Loss due to neglect and lack of management	Increase
Sparse settlement pattern	Increase in planning applications with loss of sense of exposure and rural isolation	Maintain
Condition and existence of traditional buildings	Conversion or demolition, or encroachment of new built development on their landscape setting	Sensitive restoration
Exposed vast skylines	Cluttered by wind farms/communication masts and power lines	Maintain
Blanket bog and heather moorland	Loss due to over-grazing, burning/unmanaged fires and erosion from recreational pressure	Increase



ENCLOSED UPLANDS

Character Areas

3a Rossendale Hills

Key Environmental Features

- ***A high, exposed undulating open plateau*** with a distinctive pattern of enclosure;
- ***Network of gritstone walls and historic tracks*** reinforces the landscape pattern and provides evidence of the extent of upland 18th and 19th century enclosure;
- ***Wet/rushy pasture*** conveys an impression of a poorly managed landscape, but may provide habitats for breeding birds.
- ***Blanket bog*** crowns the high summits providing both landscape diversity, biodiversity and an important archaeological resource.
- ***Abandoned coal mines with day holes and bell pits*** reflect the area's land use history and industrial legacy.
- ***Quarries*** contribute to the character of the landscape and its hummocky, uneven landform.
- ***Distinctive pattern of settlement at high altitude***, including clusters of dwellings and short `urban' terraces which reflect the area's industrial past as miner-farmer small holdings and squatter settlements.
- ***Reservoirs*** provide water and recreational resources as well as supporting wildfowl and wader species.

Local Forces for Change and their Landscape Implications

- ***Abandonment or amalgamation of agricultural holdings*** due to economic pressures in the agricultural sector. The future of much of the farmland is therefore uncertain. It may be left to become derelict with the spread of rushes and subsequently scrub over formerly enclosed land. Alternatively it may be subject to more intensive farming practices as farms are amalgamated. There is also a trend towards farm diversification with the use of farm buildings for alternative uses. In all these scenarios there is a risk that the characteristic stone walls, upland farm buildings and historic upland enclosures will continue to become degraded and derelict.
- ***Growth of small holdings and hobby farmers.*** This trend relates to the decline in agricultural land uses and the purchase of agricultural holdings by non-farmers. It may result in degraded pasture, overgrazed paddocks and a plethora of sheds, jumps and abandoned troughs etc which may be unsightly.
- ***Conversion of agricultural buildings to residential uses.*** This form of development can be visually intrusive as the services (roads, transmission lines) and ornamental garden fences/plants associated with residential development are often poorly integrated with the upland landscape.
- ***Extensive new woodland planting*** through the Forest of Burnley and Elwood initiatives could be a positive force for change, counteracting the longer standing trend to already low levels of woodland cover due to neglect and grazing pressure.
- ***Incremental residential development*** associated with the characteristic high altitude settlements may lead to the inappropriate development of an 'urban' or 'suburban' landscape in this sensitive upland setting.

Growth of informal recreation, taking advantage of the extensive network of paths and bridleways and the potential use of reservoirs for water sports and abandoned quarries for countryside recreation. The growing use of four wheel drive vehicles and mountain bikes is a particular threat to the open upland landscapes and may lead to the erosion of valuable blanket bog habitats. There are local pressures to use historic mineral sites for recreational uses.

Landscape Strategy for the Enclosed Uplands

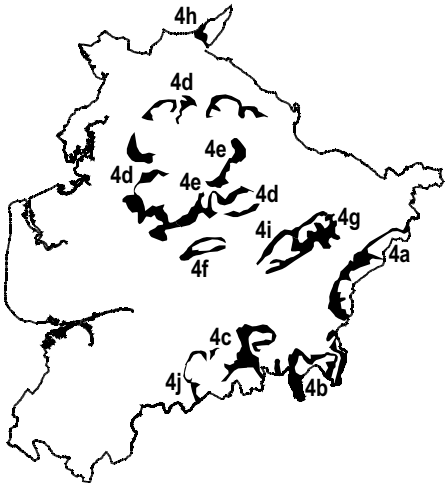
Strategy	Recommendations
Conserve the distinctive high altitude field enclosures	• consider the management options for abandoned agricultural landholdings, including allowing some areas to regenerate naturally and the management of others to promote restoration of upland habitats • repair upland enclosures and stone walls giving priority to those walls which are prominent, those which are historically important, and those which continue to have a stockproofing function • conserve the base course and foundation of stone walls in areas where agricultural land has been abandoned as evidence of historic moorland enclosures
Conserve landscape features associated with historic mineral workings	• avoid tree planting on historic mineral workings • avoid re-engineering (filling in or flattening out) of spoil heaps • encourage conservation and enhancement of re-colonised mineral sites which may have developed considerable biodiversity interest
Conserve the distinctive historic settlement pattern	• stabilise and conserve some of the abandoned farmstead ruins which represent an important part of the area's cultural history • ensure new development is well-integrated with the existing settlement pattern; incremental residential development and infill may be intrusive and may disrupt the distinctive pattern of isolated short terraces and clusters of buildings • avoid the addition of further tall structures (communication masts and pylons) which may have a cumulative negative visual impact • discourage the proliferation of makeshift ancillary buildings associated with new residential development and small holdings
Enhance the existing areas of blanket bog on the peat capped summits of Cribden Hill, Crawsowbooth, Lumb and Broadclough	• promote extensive grazing regimes • manage intensive recreational uses • where possible raise the local water table by blocking drainage grips • restrict deep excavation works , such as those required for large scale structures such as pylons and turbines
Enhance the abandoned quarry sites for nature conservation, recreation and heritage purposes	• deflect visitors from dangerous, unstable parts of the quarry and from sensitive habitats and archaeological sites

Strategy	Recommendations
	• carry out ecological and archaeological survey before conservation/restoration proposals are formulated
	• retain the inherent historic cultural interest of the site and the archaeological features
	• create new habitats and retain key landscape and ecological features
	• encourage interpretation of heritage, ecological, geological and landscape features
Enhance the extensive inter-connecting network of footpaths	• deflect recreational pressure away from sensitive upland habitats
and packhorse trails	• consider options for recreational use with appropriate signage and use of materials for surfacing etc.
Create broadleaved woodland on the fringes of the Enclosed Uplands	• planting should reflect the landform and in particular avoid open upland summits
	• where appropriate, encourage the creation of new semi-natural woodland in particular by natural regeneration of native trees in stockproofed enclosures and including vestiges of ancient semi-natural woodland. Give priority to upland oak woodland, which is a UK priority habitat.
	• encourage the regeneration of woodland along small tributary valleys and intersecting valley sides and heads that penetrate the uplands.
	• encourage woodland regeneration in areas of formerly improved agricultural land linked to new valley woodlands and avoiding areas of wildlife value

Potential Local Indicators for Monitoring Landscape Change in the Enclosed Uplands

Potential Indicators	Pressure for change	Preferred direction of change
Blanket bog	Loss and erosion due to increased grazing, drainage and burning and recreational pressure	Maintain
Gritstone walls	Loss due to neglect and farm diversification	Repair
Geological, archaeological and wildlife features of abandoned mines and quarries	Damage or destruction due to neglect or unsympathetic use	Sympathetic management and/or restoration
Semi-natural woodlands	Loss due to lack of regeneration or, conversely, increase due to new planting initiatives	Increase (only on lower elevations)
Distinctive settlement pattern	Infill development and settlement expansion	Maintain

4



MOORLAND FRINGE

Character Areas

4a	*Trawden Fringe*
4b	*Rossendale Moorland Fringe*
4c	*Blackburn Moorland Fringe*
4d	*Bowland Gritstone Fringes*
4e	*Bowland Limestone Fringes*
4f	*Longridge Fell Fringes*
4g	*South Pendle Fringe*
4h	*Leck Fell Fringe*
4i	*North Pendle Fringe*
4j	*West Pennine Fringes*

Key Environmental Features

- ***Dry stone walls of roughly hewn blocks with distinctive construction styles and wall copings*** create strong patterns within the landscape, reflect the underlying geology and are also of historical/cultural interest.
- ***Elevated and often long distance views*** over the surrounding landscape from lay-bys and viewpoints.
- ***Undulating landform with stunted hawthorns and gorsey roadsides*** give texture to the landscape and provide a transition between the ordered lowlands and wild uplands.
- ***Enclosed archaeological sites,*** dating from the Iron Age, which survive in these marginal locations as they have not been destroyed by the intensity of activity taking place lower down in the river valleys.
- ***Distinctive vernacular architecture*** of asymmetric stone dwellings housing living quarters and barns under one roof (laithe houses), stone terraced cottages and farmsteads reflect the underlying geology and provide an insight into the lifestyle of the former inhabitants.
- ***Victorian reservoirs*** demonstrate the importance of the landscape for water storage as well as providing important wildfowl and wader habitats.
- ***Small semi-natural clough woodlands*** are valuable ecological habitats and prominent landscape features.
- ***Isolated farmhouses, cottages and short lines of buildings*** are often prominent on the steep slopes.

Local Forces for Change and their Landscape Implications

- ***Neglect of landholdings*** due to economic decline in the agricultural sector - farms in these marginal areas may no longer be economically viable. There is a possibility that landholdings may be partially abandoned and left to regenerate as scrub; elsewhere they may be neglected so that the characteristic diverse mosaic of pasture, scrub and meadow is altered; or, if farms are at lower elevations, farmland may be amalgamated to form larger units, with subsequent removal of field boundaries, improved drainage and increased fertilisation. In each case there is a risk that the small-scale rural landscape features associated with these landscapes, such as stone walls, gate posts and traditional farm buildings, may be lost or fall into disrepair.
- ***Conversion of farm buildings to residential uses.*** This is becoming a significant force for change in areas which have relatively good access to motorways or local towns. Residential development in such isolated rural locations requires sensitive design to avoid visually intrusive 'suburban' architectural details. There is also a risk

that the ornamental plants, garden fences, access roads, car parking, power lines and other residential paraphernalia will be prominent and inappropriate, particularly in elevated areas.

Pressure for recreation and visitor facilities, such as caravan sites, car parks and accommodation. These developments may be prominent in long views (as at Longridge 4f). The Moorland Fringe has a relatively small scale landscape pattern which could easily be overwhelmed by large-scale developments or activities.

Localised pressure for expansion of urban areas onto the steep, highly visible moorland fringes, for instance in the Longridge area (4f). Built development in such a location would be prominent in long views.

Increased traffic as a result of visitor pressures and farm diversification may cause damage to local stone walls and verges.

Continuing stone quarrying in Rossendale is creating new landforms locally.

Landscape Strategy for the Moorland Fringe

Strategy	Recommendations
Conserve the remote, multi-textured character and nature conservation interests of the Moorland Fringe	• encourage the reversion of improved grassland within the higher enclosures to an acid grassland/heather cover - the long term aim should be the extension of the moorland landscape downslope and reversion to a more diverse neutral grassland in lower enclosures • where possible, remove invasive non-native species • conserve and enhance species-rich hay meadows, wet pastures and wet flushes • conserve semi-natural ancient woodlands and ensure proposals for woodland creation are appropriate in terms of species, scale and shape
Conserve the distinctive built character of the Moorland Fringe	• 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 • new built development on steep, prominent slopes should be carefully integrated into the landscape with tree planting and a network of stone walls • avoid ribbon development along the steep, narrow dead-end lanes leading up to the upper slopes; it would be prominent in views to the moors and would disrupt the characteristic small-scale settlement pattern • restrict new built development on the upper slopes, particularly near skylines • conserve the Victorian architecture of the reservoirs • the use of local building materials should be encouraged • avoid small-scale 'improvements' to roads and buildings which may cumulatively have an urbanising influence, such as road widening, kerbing and road lighting • seek design solutions to road safety issues which retain the character of the enclosed narrow lanes, walls and verges
Enhance opportunities for informal recreation	• conserve and maintain the historic network of footpaths and packhorse trails • promote informal recreation through marketing, appropriate signage and good management

Strategy	Recommendations
Enhance the characteristic diverse landcover pattern	• seek sustainable management options for areas of abandoned farmland to ensure that neglect does not lead to adverse change in landscape or ecological terms
Restore local field patterns in areas where they are degraded	• encourage the repair and restoration of stone walls, giving priority to prominent locations, such as walls alongside footpaths and those which are highly visible in gateway views • use local stone and appropriate local styles of wall construction • restrict commercial activities which would lead to an increase in heavy goods vehicles, such as road haulage and plant storage and therefore pressure to 'improve' lanes
Restore and recreate valuable habitats	• where possible, restore species-rich hay meadows, wet pastures and wet flushes using a locally native seed source
Restore broadleaved woodland and scrub in appropriate locations at the head of valleys and near some farmsteads	• consider the location of future planting carefully to ensure it will be well integrated with the local topography, existing landcover and field patterns • ensure tree planting is associated with scrub and natural regeneration so that there is a soft transition to upland moor • avoid planting in areas with important landscape features or habitats, such as unimproved grassland, landform features, striking stone wall patterns or archaeological sites • manage ancient semi-natural woodland
Restore quarry sites sensitively	• ensure quarry reclamation schemes respect the critical, prominent location in the landscape at the interface with the open moorland • extensive re-engineering of landforms will generally not be appropriate • seek to achieve landscape, biodiversity, archaeology and recreation objectives

Potential Local Indicators for Monitoring Landscape Change on the Moorland Fringe

Potential Indicators	Pressure for change	Preferred direction of change
Dry stone walls/gateposts	Deterioration due to neglect, farm abandonment and traffic pressure	Repair
Distinctive vernacular buildings	Conversion to residential uses	Sensitive conversion
Diverse field pattern of scrub and pasture	Loss due to farm abandonment or amalgamation of farm units	Maintain

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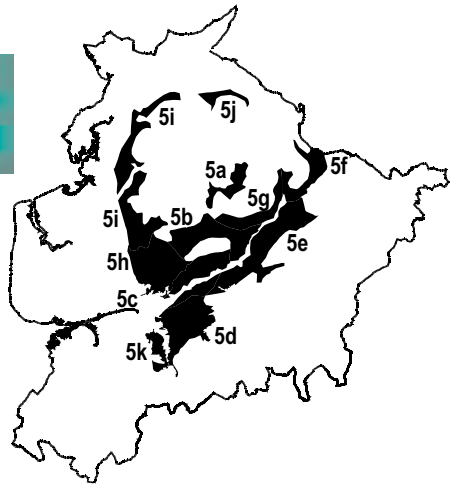

UNDULATING LOWLAND FARMLAND

Character Areas

5a	*Upper Hodder Valley*
5b	*Lower Hodder and Loud Valley*
5c	*Lower Ribble*
5d	*Samlesbury-Withnell Fold*
5e	*Lower Ribblesdale (Clitheroe to Gisburn)*
5f	*Lower Ribblesdale (Gisburn to Hellifield)*
5g	*South Bowland Fringes*
5h	*Goosnargh-Whittingham*
5i	*West Bowland Fringes*
5j	*North Bowland Fringes*
5k	*Cuerden – Euxton*

Key Environmental Features

- ***Wooded river corridors and gorges*** provide a sense of enclosure, sheltered habitats and distinctive patterns on the valley sides. Many are also historic sites for early water-powered industry.
- ***Hedgerows and hedgerow trees*** define the field pattern in contrast with the moorland fringe farmland, where stone walls dominate over hedgerows. They also provide sheltered habitats which are important wildlife links between the wooded cloughs and outlying woodlands.
- ***Small mixed woodlands*** provide important habitats and cover for wildlife and contribute to the overall appearance of a 'wooded' farmland. They reflect an important phase in landscape evolution when 19th century estate woods and shelterbelts were developed for game shooting.
- ***Historic villages, stone bridges and stone walls*** reflect the local geology; many villages are clustered at river crossing points and there is a dispersed pattern of farms and cottages on the rural roads along the valley sides.
- ***Limestone outcrops and knolls*** (in some of the character areas) provide a sharp contrast to the gentler rolling formations of the grazing land and provide shelter for sheep. They are also important for biodiversity.
- ***Roman remains and roads*** reflect the importance of the area during Roman occupation - the routes of Roman roads are visible in sections of existing roads and tracks.
- ***Historic drove roads*** support woodland, scrub and tall herb strips.
- ***Country houses, and estates*** are important in terms of architecture and landscape design - they indicate the county's growing wealth in the 18th and 19th centuries.

Local Forces for Change and their Landscape Implications

- ***The expansion of farm woodlands through the Elwood Initiative*** could be a positive force for change, linking wooded river corridors and increasing the number of small scale mixed farm woodlands.
- ***A decline in mature hedgerow and parkland trees*** which are a valuable ecological resource and important hedgerow boundary markers. The presence of many trees provides the impression of a well managed, healthy landscape. There is little evidence of regeneration in hedgerows or of new planting to replace existing ageing or declining trees.

- ***Continuing quarrying for limestone*** is altering the landform locally but restoration presents opportunities for the creation for the creation of distinctive limestone habitats (area 5e).
- ***Increasing pressures for residential development*** on the edges of settlements, such as Ribchester, influences the landscape setting and approach to these small rural settlements. Many new developments use imported inappropriate materials such as red brick, which can be intrusive in this rural setting.
- ***Barn conversions*** and new developments centred around existing farm buildings may alter the scale and character of rural settlement and affect the intrinsic historic interest of the farms. Design guidance may ensure reasonable minimum standards of architectural design, but it is more difficult to control the overall appearance of gardens, fencing, access roads, driveways and power lines. There is a risk that this form of suburbanisation will have a detrimental impact on areas with a deeply rural character.
- ***Pressure for amalgamation or expansion of beef/dairy farms*** may result in the erosion of the characteristic pattern of fields, hedges and woods and introduction of large scale sheds and visually intrusive materials. Such large buildings may be intrusive in this rural setting and metal-roofed barns may be extremely prominent in views from surrounding upland areas. The storage of silage may also have a significant visual impact.
- ***Intensive agricultural management*** involving chemical fertiliser and herbicide applications, affects herb-rich hay meadows (for example around Slaidburn, area 5a) , unimproved neutral pastures (for example along the Hodder, area 5b) and nutrient status of the rivers.
- ***Water abstractions*** for urban areas may reduce water levels in rivers such as the Hodder and Ribble. This would influence species diversity and fisheries.
- ***Pressure for visitor facilities*** including a proliferation of signs, car park provision and rural restaurants, may result in suburbanisation of the landscape.

Landscape Strategy for Undulating Lowland Farmland

Strategy	Recommendations
Retain the characteristic pattern of river corridor and valley side woodlands	• encourage the natural regeneration of river corridor woodlands by excluding grazing where this does not conflict with other biodiversity interest
	• initiate a programme for the gradual removal of conifer species where appropriate and their replacement with locally native broadleaves
	• conserve ancient semi-natural woodlands
Conserve the distinctive rural hedgerow network	• encourage continued hedgerow management, re-planting gaps and planting of a new generation of hedgerow saplings to conserve the hedgerow network
Conserve the lowland herb-rich haymeadows and unimproved neutral grasslands	• avoid agricultural improvements and application of artificial fertilisers which decrease species diversity of these grasslands
	• conserve species-rich grass verges and increase species diversity by management where appropriate
	• encourage conservation management techniques, grazing and cutting regimes, which promote unimproved grassland
	• avoid road widening, improvement works, cable and pipeline laying which would affect species rich grass verges

Strategy	Recommendations
Conserve the limestone reef knolls typical of the Ribble Valley	• encourage traditional management and conservation of limestone grassland on reef knolls • enhance existing quarries by developing species-rich grassland as part of planning conditions and by undertaking a range of other habitat creation measures • perpetuate groups of trees which visually mark individual reef knolls so as to minimise any adverse effects on limestone flora
Conserve rural built features such as stone bridges, historic villages and stone walls	• avoid road improvements which would affect the setting or structure of stone bridges or walls • encourage the use of the appropriate local limestone or gritstone to ensure new buildings and materials reflect the local architecture of the area • avoid using inappropriate or alien materials such as red brick and concrete tiles in historic villages
Conserve the Roman history and industrial archaeology of the area	• conserve Roman Roads, ensuring road improvements do not obscure their continued visual presence in the landscape • conserve settings of historical and archaeological features, for example the fort and Roman settlement at Ribchester • conserve local features such as small farm lime kilns which signify the past use of limestone as a soil conditioner
Conserve country houses and parkland as features of the landscape	• conserve the settings to country houses, encouraging continued management of grounds as parkland - including planting of parkland trees • ensure entrances are not affected by road alterations or built development • avoid loss of integrity by division into multiple ownership or loss to agriculture • retain traditional parkland features such as railings, kissing gates and veteran trees
Conserve the distinctive settings to rural settlements	• ensure new development on the edges of villages reflects the characteristic clustered form; development should be sited to retain views to landscape features and landmarks, such as church towers on the approaches to villages. • avoid ribbon development which would disrupt the characteristic clustered form of settlements and the rural character of local roads • maintain stone walls, which are often located on the outskirts of villages such as Slaidburn, respecting local differences in style and construction • encourage tree planting as an integral part of new development, creating links with existing farm woodlands and the network of hedgerows
Enhance the wooded character of the lowland landscape	• promote the planting of new woodland to link existing woods and hedgerows, aiming for a continuous network of trees, hedgerows and woods where this does not conflict with other habitats of biodiversity significance • encourage planting of small farm woodlands which are a feature of the lowland agricultural landscape and provide `stepping stones' for wildlife between larger woodlands • promote the restoration where appropriate of semi-natural habitats to increase the resource and to develop linkage and corridors for wildlife

Strategy	Recommendations
	• encourage use of species which are typical of the area such as lowland oak woods, alder in wetter places and ash woodland where the soils are moist and/or base-rich
Restore and maintain historic rural buildings	• new built development based around the restoration of farm buildings should pay attention to the siting, scale and design of traditional rural buildings, retaining the compact form and using local materials • building conversions and change of use, such as conversion of barns to residential dwellings, should have regard to scale and local materials • encourage the treatment of boundaries and surroundings to conversions to be in keeping with their rural setting

Potential Local Indicators for Monitoring Landscape Change in Undulating Lowland Farmland

Potential Indicators	Pressure for change	Preferred direction of change
Mixed farm woodland	Increase as a result of the Elwood initiative, or decrease because of neglect/mismanagement	Increase
Hedgerow network	Decrease because of ongoing neglect or removal due to agricultural intensification or the amalgamation of farm units	Increase
Historic villages, stone buildings and walls	Increase in conversions of traditional farm buildings to residential uses, but risk that landscape setting is lost	Sensitive conversion
Designed estate landscapes	Decrease in area and quality of designed estate landscapes due to a combination of changes in land ownership and neglect.	Maintain

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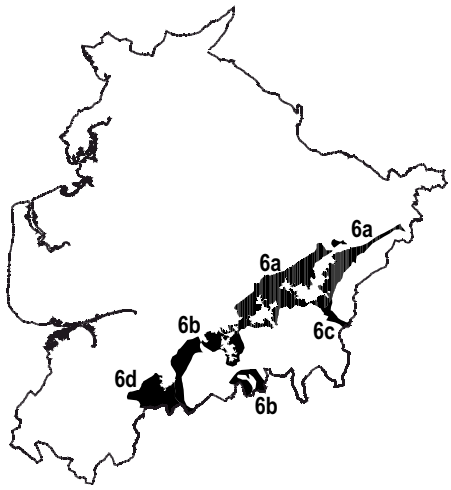

INDUSTRIAL FOOTHILLS AND VALLEYS

Character Areas

6a	*Calder Valley*
6b	*West Pennine Foothills*
6c	*Cliviger Gorge*
6d	*Adlington-Coppull*

Key Environmental Features

- ***Hedgerow trees and parkland trees*** contribute to the well-treed character of the landscape; parkland provides opportunities for survival of specimen and veteran trees.
- ***Semi-natural woodlands alongside water courses*** are now rare and important historic landscape features as well as rich ecological habitats.
- ***Species-rich grasslands*** survive locally, adding colour and biodiversity and reflecting past land use history of small, sometimes part time farms.
- ***Large country houses and designed parklands*** indicate the importance of the urban fringes as ideal locations for wealthy industrialists and provide pockets of increased species diversity.
- ***Stone walls*** are an important link to past farming activities and maintain the rural essence of the area.
- ***Older stone public buildings*** such as churches, halls, and pubs reflect past building styles and quality.
- ***Historic field patterns*** indicate past land use before the age of extensive industrialisation, urbanisation and intensive agriculture.
- ***Mills, other industrial buildings and terraces of brick or stone*** reflect a strong industrial heritage associated with textile industries.
- ***Spoil heaps, quarries, and areas of reclaimed land*** remain as clues to the past exploitation of the land; some now support unique and other valuable habitats.

Local Forces for Change and their Landscape Implications

- ***Pressure for expansion of urban areas*** by infill and edge development threatens to 'suburbanise' the countryside. Lighting, access roads, footpaths, out-of-town retail and leisure developments and business parks are diminishing the distinctive landscape character of the Industrial Foothills and Valleys. Pylons threaten even the most rural areas of the fringe landscapes and dominate views. Pressures for built development are likely to continue as the area is relatively accessible to the M65 and a range of urban centres
- ***The Forest of Burnley*** initiative has already led to extensive new woodland planting in the Burnley area (6a). Hyndburn District too has been the focus of much new planting since 1987. The planting of trees through the Elwood initiative will also increase woodland cover throughout the Industrial Foothills and Valleys. Such recent initiatives counteract a longer standing trend to decline in already low levels of woodland cover, due to a combination of neglect, grazing pressures, built development and occasional felling. This trend represents a degradation of landscape character and quality which may

be particularly serious in areas which are under pressure for new development, where *woodland would provide a relatively robust landscape setting. There is also a risk that designed parkland landscapes will be neglected and gradually decline, although the Forest of Burnley is seeking to reverse this trend locally .*

- ***Increasing visitor pressures*** including the provision of cafes, parking viewpoints, footpaths and signage, particularly where views are easily accessible to urban populations. There is a risk that the cumulative impact of visitor facilities may erode the rural character of the landscape.
- ***Ongoing dereliction of former industrial heritage*** will lead to the potential loss of landscape features of industrial heritage interest. Mill buildings, chimney stacks and mill lodges are striking landmark features which contribute to the character and identity of the settlements, however many of these are now disused and/or poorly maintained. Small reservoirs adjoining urban areas have also become abandoned.
- ***Fragmentation of land uses*** due to the decline of the agricultural sector and the rapid expansion of small-holdings and horsiculture. The growth of these smaller landholdings may contribute to an increased clutter and lack of visual unity. They may also be associated with the degradation of semi-natural habitats and traditional farmland features, such as stone walls, historic field patterns and farm buildings.
- ***Standardisation of roads*** due to upgrading of lanes and minor rural roads in areas where there are intense pressures for new development. The introduction of mini-roundabouts, lighting, signage, verges and kerbs tends to obscure and standardise distinctive local landscape character and the landscape associated with such roads and developments is often bland and suburban in character.
- ***Major landfills and working quarries*** present an opportunity to create new landscapes by their restoration.

Landscape Strategy for the Industrial Foothills and Valleys

Strategy	Recommendations
Conserve valuable habitats	• wherever possible discourage intensive agricultural practices, such as drainage and fertilisation, in areas with species-rich grasslands, hay and wet meadows
	• conserve ancient semi-natural woodlands
Conserve built industrial heritage	• identify and evaluate the resource, encouraging and making provision for conservation where appropriate
Conserve the pattern and distinctive settings to settlements	• respect the small scale, dispersed pattern of farmsteads and densely settled villages and maintain a clear distinction between urban fringes and rural areas
	• ensure new development does not extend onto prominent hillsides
	• maintain consistency of building materials, details and design and avoid nondescript suburban styles
	• consider alternative designs for highway improvements which respect landscape character, aiming for a strategic approach which overcomes the cumulative impact of small-scale changes (such as highway traffic calming and lighting schemes) and incremental improvements
Enhance the characteristic field pattern	• encourage the restoration/repair of degraded sections of principal stone walls, giving priority to walls alongside footpaths and lanes, around settled areas and in view from the road and lane network

Strategy	Recommendations
	• restore hedgerows in the lower, more sheltered areas, giving priority to those which are of visual, historic or ecological importance
Enhance opportunities for informal recreation	• provide quality interpretation and signage which responds to local distinctiveness
	• give careful consideration to the siting and design of car parks and visitor facilities - they should be well-screened by trees and woodlands
Restore and enhance the existing woodland resource	• manage and regenerate existing broadleaved woodlands
	• augment and link existing woodlands, especially those of semi-natural origin
	• promote shelter, screening and visual containment around settlement centres and new developments
	• design new woodland schemes to reflect the species composition and character of existing local woodlands
	• appropriate natural regeneration may often be more desirable than new planting
	• reflect the historic character and design of parkland landscapes
Restore semi-natural habitats	• wherever possible, restore remnant species-rich grassland, hay meadows and wet meadows
	• encourage part time farmers to take account of (and manage) the environmental features on their land when planning their farming activities
	• encourage appropriate grazing regimes
Create new distinctive landscapes in association with new development	• seek opportunities for creative landscape design through new semi-natural and mixed woodland planting and habitat creation, including new greens, ponds, cycleways, avenues etc and on land associated with existing transport corridors
	• maximise opportunities for tree planting in association with new development and infrastructure
	• seek opportunities for informal recreation in association with new woodland planting and habitat creation schemes and infrastructure

Potential Local Indicators for Monitoring Landscape Change in the Industrial Foothills and Valleys

Potential Indicators	Pressure for change	Preferred direction of change
Semi-natural woodlands and hedgerow trees	Loss due to lack of regeneration and fragmentation, or conversely, increase due to new planting initiatives	Increase
Historic designed landscapes	Loss of historic character due to neglect/lack of management, new development	Maintain/Sensitive restoration/ management
Historic field patterns	Loss due to fragmentation of land uses and expansion of small-holdings	Maintain/Repair
Mills, other industrial buildings and terraces	Loss due to demolition, neglect and/or lack of maintenance	Maintain/ Sensitive conversion

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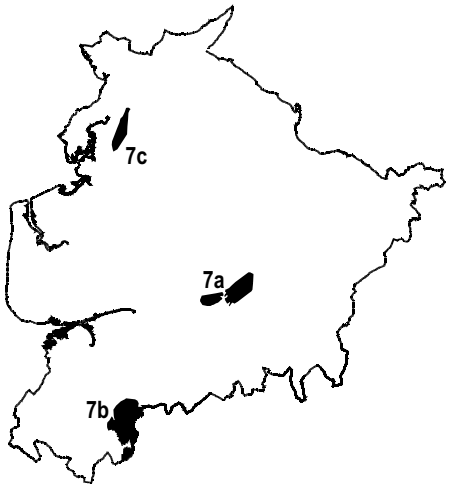

FARMED RIDGES

Character Areas

7a	*Mellor Ridge*
7b	*Upholland Ridge*
7c	*Langthwaite Ridge*

Key Environmental Features

- ***Rounded ridge profiles*** of the gritstone outcrops set them apart from the adjacent lowland agricultural landscapes and often provide important buffers between rural and urban landscapes.
- ***Mosaic of mixed farmland and woodland*** forms a textural backdrop to the surrounding lowlands. Broadleaved woodlands on the hill sides are important visually as well as supporting valuable fern, bryophyte and bird species.
- ***Ridge-top settlements and roads***, from which there are long views over the surrounding lowlands.
- ***Distinctive vernacular architecture*** including stone built villages, farmsteads and short terraces of cottages, reflect the industrial history of these areas.
- ***In-bye pastures and hay meadows*** on the upper hill sides form an important element of the farmland mosaic.
- ***Views over the surrounding lowlands*** from villages, footpaths, parking places and picnic sites, serve as reminders of the possible early strategic use of the ridges.
- ***Designed landscapes and country houses*** , some adapted for new uses, reflect the long history and suitability of the ridges for settlement.

Local Forces for Change and their Landscape Implications

- ***Pressure for ribbon development and large houses*** on the highly visible ridges may erode the rural character of the landscape backdrop and overall setting of the ridge villages.
- ***The development of prominent*** *vertical elements,* such as communication masts, would be particularly visible and could lead to cluttering of the skyline on the distinctive rounded ridge profile.
- ***The ongoing decline in woodland cover*** due to neglect, mismanagement or agricultural intensification could alter the balance of the local landscape pattern; the mosaic of fields and woodland is prominent in views from the surrounding lowlands. The loss of farm woodlands would also lead to a decline in wildlife habitats. However, initiatives such as Elwood may have a significant impact on the landscape through new planting.
- ***Changes in the agricultural sector leading to the loss of hedgerows and changes in the proportion of landscape elements.*** The landscape pattern of the Farmed Ridges is similar to that of the Undulating Lowland Farmland, although the upstanding ridge ensures that the former is far more prominent. The Farmed Ridges are therefore particularly sensitive to changes such as hedgerow removal and the amalgamation of fields and farm units. This would also cause a decline in wildlife habitats.

Landscape Strategy for the Farmed Ridges

Strategy	Recommendations
Conserve the character of the ridge settlements	• new development should reflect the pattern of clustered settlements of local stone buildings and short terraces to counteract the pressures for ribbon development and reflect the characteristic settlement pattern; some settlements (eg Mellor) are clustered, but others are loose-knit, with buildings strung out along ridgetop roads. • consider softening abrupt urban edges with woodland planting which links to the hillside woodlands
Maintain the balance of rural landscape elements	• resist agricultural expansion into, or close to, existing deciduous woodlands and promote their management • maintain hedgerows to conserve the historic field pattern • encourage planting of small scale farm woodlands which provide `stepping stones' for wildlife between larger woodlands • conserve the rural setting of individual farms by ensuring new built development does not encroach
Conserve the hedgerow network to maintain a strong field pattern	• manage the hedgerow network to ensure it remains intact, particularly where historic field patterns are visible • wherever possible, manage hedgerows for species diversity and wildlife habitats
Conserve the smooth, uncluttered skyline of ridges	• minimise vertical structures on the skyline • conserve views over the surrounding lowlands
Conserve the function of the ridge as a rural buffer	• retain the rural character of the ridge by minimising the use of urban elements such as kerbs and street lights outside settlements
Enhance hedgerows where they appear degraded or gappy	• plant hedgerow trees to ensure a new generation of trees replace the existing generation • replant degraded sections of hedgerow which contribute significantly to the characteristic overall pattern
Enhance settlement character	• ensure new built development respects local materials and styles; stone built farmsteads and village buildings are characteristic • enhance settings to settlements by creating gateways to the settlements and resisting ribbon development • retain views over the lowlands which is an important historic feature of the ridge-top settlements • encourage strategic tree planting as a backdrop to new development; it will form the skyline in many views
Restore broadleaved woodlands	• aim to extend woodlands on the ridge sides using native species • encourage the planting of woodlands around settlements to provide enclosure and a rural setting to settlements
Restore buildings and landscape features of industrial heritage and wildlife interest	• encourage sympathetic conversion of buildings of industrial heritage • give priority to the conservation and restoration of ancient semi-natural woodlands • retain the short terraces associated with the weaving industry • conserve and enhance the nature conservation interest associated with abandoned industrial sites and structures

Potential Local Indicators for Monitoring Landscape Change on the Farmed Ridges

Potential Indicators	Pressure for change	Preferred direction of change
Ridge-top skylines	Increased clutter from communication masts and new built development	Maintain
Prominent landscape pattern on hill sides	Changes in the proportion of landscape elements due to encroachment of new built development, agricultural change and the decline of farm woodlands	Maintain Pattern
Distinctive vernacular character of settlements	Loss of vernacular character of settlements due to pressure for new development (especially in fill and ribbon development)	Sympathetic design of new development

8

SETTLED VALLEYS

Character Areas

8a Irwell

Key Environmental Features

- ***Deep incised valley profile*** with steps and terraces and deep sided cloughs reflecting the underlying geology and weathering processes.
- ***Sense of enclosure*** provided by the steep-sided profile and presence of woodland, emphasising contrast with the urban form.
- ***Remnant broadleaved woodland,*** on the valley sides and in the side cloughs supporting important urban wildlife.
- ***Characteristic linear pattern of terraced urban settlement*** on the valley floor and following the contours on the lower south facing slopes from which there are frequently views out to the woodland, pastures and the moorland edges.
- ***Distinctive impressive stone built industrial and civic buildings of the 19th century*** are the dominating elements of the built fabric.
- ***Surviving vernacular structures*** such as packhorse bridges and older terraces of weaver's cottages provide evidence of the important role that these valleys played in our industrial history.
- ***Impressive feats of Victorian engineering*** to retain the valley sides.
- ***Gritstone walls*** create a distinctive, prominent field pattern. They provide shelter and habitat for wildlife, and are also of considerable historical and cultural interest.

Local Forces for Change and their Landscape Implications

- ***Pressure for expansion of urban areas*** onto the steep, highly visible valley sides may detract from the characteristic wooded, rural backdrop to the valley towns and their typical linear form. There is also a risk that new built development will lead to the coalescence of adjacent valley settlements and the loss of their distinctive identity.
- ***A decline in woodland cover*** due to a combination of neglect, grazing and occasional felling, threatens to erode the typical wooded landscape setting of the valley towns. These remaining Irwell Valley woodlands are a limited valuable ecological resource which merit conservation.
- ***Increasing pressures for recreation,*** particularly along the valley floor, may damage the character and ecological value of the river corridors.
- ***Ongoing dereliction of former industrial areas*** will lead to the potential loss of landscape features of industrial heritage interest. Disused mill buildings, chimney stacks and mill ponds are striking landmark features which contribute to the character and identity of the valley settlements.

Landscape Strategy for the Settled Valleys

Strategies	Recommendations
Conserve the distinctive character of the valley settlements	• new development should be of high density, reflecting the characteristic compact, linear terraced settlement form • counteract the impact of degraded urban edges with woodland planting which links to the existing valley slope woodlands • encourage the use of local building materials, such as gritstone • promote the conservation of and/or reuse of existing stone buildings
Conserve and manage all existing woodlands	• exclude grazing from clough woodlands • encourage the conservation of ancient semi-natural woodlands. Where the regeneration of native species is desirable and feasible remove non-native species gradually
Retain the characteristic pattern of gritstone walls on valley sides	• restore walls, respecting local differences in style and construction. • walls which are close to settlements, roads and footpaths should be considered priorities for action
Develop new opportunities for informal recreation and environmental improvements within the valleys	• promote linear 'greenway' routes linking to the existing Irwell Valley Trail • encourage measures which seek to restore or enhance river or stream networks and their habitats
Restore broadleaved woodlands in areas where woodland cover has become denuded	• extend and link existing woodlands along the lower hillsides and terraces to link areas of ancient woodland preserved within the deep side cloughs • restoration should include a combination of natural regeneration and new planting • give priority to woodlands around existing valley settlements to provide enclosure, particularly in areas where developments have extended up the hillsides and onto the valley terraces • upland oak woodlands (recognised in the UK Biodiversity Action Plan) should also be priority for restoration/conservation
Convert and manage buildings and landscape features of industrial heritage interest	• support the restoration and sensitive conversion of buildings and structures of industrial heritage interest • respect, conserve and enhance the nature conservation interest associated with mill lodges, races and leats
Restore quarries	• avoid re-engineered landforms and the use of extensive woodland belts which are rarely appropriate • restore quarries which are prominent in the landscape (on the crest of the valley slopes) so that they are retained as local landscape features • enhance the nature conservation and heritage value of quarries, allowing recreational uses which are sympathetic to their distinctive character

Potential Local Indicators for Monitoring Landscape Change in the Settled Valleys

Potential Indicators	Pressure for change	Preferred direction of change
Valley side broadleaved woodland	Decrease due to neglect, grazing and occasional felling	Maintain/ Regenerate
Gritstone walls	Decrease due to neglect	Repair
Historic industrial buildings/bridges	Ongoing dereliction	Repair/Sensitive Restoration

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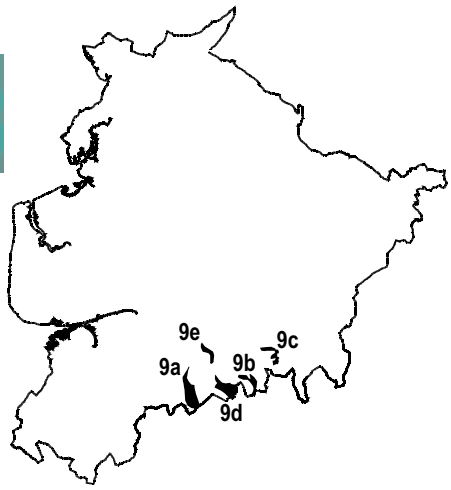

RESERVOIR VALLEYS

Character Areas

9a	*Rivington*
9b	*Turton-Jumbles*
9c	*Haslingden Grane*
9d	*Belmont*
9e	*Roddlesworth*

Key Environmental Features

- ***Open valley profile*** with gently sloping sides, influenced by glacial activity.
- ***Dominated by numerous large reservoirs*** with characteristic ornate Victorian detailing. The reservoirs provide water resources and support important populations of wintering wildfowl and waders; they are also a focus for recreation.
- ***A well-wooded landscape*** with broadleaved and coniferous plantations bordering and linking reservoirs. The extensive woodland creates a relatively robust landscape, able to accommodate large numbers of people.
- ***Important semi-natural habitats,*** including wetlands, marginal plant communities (particularly in the draw-down zone), species-rich grasslands and hay meadows.
- ***Remains of abandoned settlement,*** including farms, roads and quarries, for instance at Haslingden Grane, and general absence of modern settlement.
- ***Evidence of historical mineral extraction*** in the form of mines and quarries, usually for sandstone. Many have been reclaimed and provide an important nature conservation and/or recreation resource as well as prominent landscape features.
- ***A designed landscape*** at Lever Park of national historic importance.

Local Forces for Change and their Landscape Implications

- ***Pressures for recreation*** and the inevitable conflicting interests that can arise, for instance between active noisy pursuits, such as water sports, and passive informal activities, such as walking and cycling.
- ***The ongoing restructuring of the larger woodlands*** owned by North West Water should create a more robust woodland structure with a diverse tree canopy and an increase in the proportion of broadleaved trees. Woodland management plans can help to ensure that the valleys have the capacity to absorb large numbers of visitors and recreation activities. *However, there is a risk that woodland management (especially under-planting and planting up of clearings) will lead to the loss of nesting sites (eg for redstarts) and a decline in habitats suitable for species such as tree pipits.*
- ***Continuing decline of pre-reservoir farm buildings and boundaries*** *following abandonment and demolition.*

Landscape Strategy for the Reservoir Valleys

Strategy	Recommendations
Conserve the distinctive built character of the Reservoir Valleys	• conserve and repair distinctive 19th century century features, such as crenellated dressed stone walls and towers • conserve the historic pattern of pre-reservoir settlement and farmland on some valley slopes (eg 9c)
Conserve and manage all existing woodlands	• encourage the re-structuring of conifer plantations via the Forest Plan process (particularly in 9b) • actively manage woodlands, replanting as appropriate to maintain well structured, diverse native woodlands • remove non-native invasive species • encourage natural regeneration as well as new planting, particularly in the vicinity of semi-natural ancient woodland, maintaining woodland glades where appropriate
Conserve the important historic designed landscape at Lever Park	• ensure new planting reflects and enhances the historic design of the park • give priority to the conservation, repair and management of key landscape and architectural features, such as avenues, rides, views, bridges, cascades and embankments
Enhance valuable wildlife habitats	• conserve the species-rich hay meadows and pastures which are an important element alongside some reservoirs in the West Pennine Moors - management of reservoir embankments should also take account of existing or potential nature conservation interest • conserve former quarries as valuable habitats - restrict planting in these areas • investigate scope for manipulating water levels to maintain and create shoreline habitats - many of the reservoirs in the West Pennine Moors support important draw-down zone vegetation, including nationally important species • provide artificial nesting habitats as appropriate • remove non-native invasive species from key wildlife sites • limit recreational disturbance at key locations for wildlife • avoid creating new engineered banks, culverts and other constructed forms of water management as part of new schemes
Enhance opportunities for informal recreation	• maintain and repair footpaths and all visitor facilities • extend footpaths along river corridors and to adjacent settlements, aiming to provide a variety of routes with access for the disabled, passive recreation and those interested in more active pursuits • visitor facilities should be designed to minimise landscape impacts - they should be well screened by woodland planting
Restore broadleaved woodlands in areas where woodland cover has become denuded or highly fragmented	• establish new semi-natural woodland in formerly wooded cloughs/gullies • extend and link existing woodlands, giving priority to linking areas of ancient woodland and developing links between areas of semi-natural habitat • restoration should aim at natural regeneration where appropriate • encourage woodland restoration around existing buildings, campsites, picnic facilities and car parks

Potential Local Indicators for Monitoring Landscape Change in the Reservoir Valleys

Potential Indicators	Pressure for change	Preferred direction of change
Victorian architectural details	Possible dereliction or damage due to recreational developments, but ongoing presumption in favour of repair/maintain	Repair/Maintain
Extensive mixed woodland	Likely to be managed positively; neglect would lead to serious degradation and loss of important woodland landscapes	Maintain
Areas of species-rich pasture	Loss of species-richness due to agricultural improvement	Maintain/Increase

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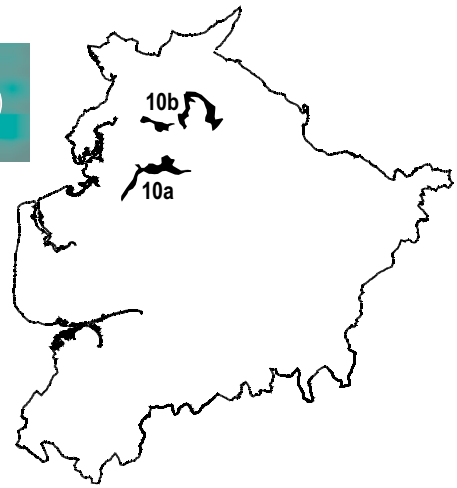

WOODED RURAL VALLEYS

Character Areas

10a Wyre Valley

10b North Bowland Valleys

Key Environmental Features

- ***Deeply incised, wooded cloughs*** create a strong pattern on the hillsides and provide sheltered habitats for wildlife.
- ***Upland semi-natural oak woodland*** which is a rare woodland type and survives in the sheltered cloughs.
- ***Local areas of landslip*** on the steep valley sides create a distinctive hummocky local topography.
- ***Steep landform of stepped terraces*** on the harder geology and steep drops where the softer shales have been eroded away.
- ***Waterfalls*** which add to the natural charm of the upper valleys.
- ***Herb-rich meadows and pastures and wet meadows along the valley floor*** are of considerable interest for nature conservation.
- ***Charcoal hearths, sawpits and coppice stools*** indicate a past history of woodland management.
- ***Historic mills and their associated lodges and leats*** which are important examples of local industrial architecture and indicate the past use of the rivers to harness power.
- ***Tiny valley settlements,*** clustered around rivers and streams, often with historic stone bridges, are contained within the steep-sided valleys.
- ***Occasional small reservoirs, aqueducts and gravel pits*** add significantly to the recreational and nature conservation value.

Local Forces for Change and their Landscape Implications

- ***The decline of important semi-natural woodland habitats*** due to a combination of neglect and grazing by stock . There has been very little new planting and grazing often minimises opportunities for natural regeneration. Invasion by non-native species may also be a problem in some areas. The degradation of semi-natural woodlands is serious in a county where this resource is limited. There may also be long term implications for the visual character of the landscape.
- ***Changing patterns of agriculture*** may influence the character of the Wooded Rural Valleys as agricultural intensification (including the increased use of fertiliser and pesticides) and the amalgamation of fields leads to a loss of species-rich meadows.
- ***Conversion of redundant farm buildings, historic mills,*** *etc* to desirable residential properties could reduce the remote character based on small scale farming and rural industry.

Landscape Strategy for the Wooded Rural Valleys

Strategy	Recommendations
Conserve the secluded tranquil character of the Wooded Rural Valleys	• in general restrict built development which would detract from the tranquillity of the rural valley landscape
	• new development should reflect the small scale, clustered pattern of the existing buildings; large-scale development and standardised layouts are inappropriate
	• ensure new buildings are well integrated with extensive broadleaved woodland or trees
	• avoid 'urban style' lighting, construction materials and standardised details, which cumulatively can lead to the erosion of the peaceful rural landscape character
Conserve vernacular architectural features, such as derelict mills and barns and their related landscape features	• consider opportunities for the conversion of mills and barns to new visitor uses and rural/woodland industries
	• aim to stabilise ruins and undertake localised woodland clearance to enhance their immediate landscape setting, as well as their contribution to the secluded 'romantic' character of the valley landscape
	• conserve the races, mill ponds, leats and meadows which relate to the derelict mill sites, recognising and enhancing their nature conservation interests
Conserve distinctive topographic features	• restrict activities such as quarrying, which might alter the distinctive incised ravine and gorge landform of the valleys
	• avoid new woodland planting in areas of topographic/geological interest and consider wider views to these features when planning strategic planting schemes
Conserve and manage existing broadleaved woodland and other semi-natural habitats	• exclude grazing or manage grazing as appropriate
	• gradually remove invasive non-native species
	• conserve and manage ancient semi-natural woodlands
	• conserve herb-rich meadows and pasture and other wet meadows
Enhance opportunities for informal recreation	• manage visitor access to deflect attention from the more sensitive habitats
	• extend and manage footpaths to create an inter-connecting network
Restore broadleaved woodland in key sites where it may be designed to enhance local landscape character	• avoid planting near significant features, such as areas of landslip and exposed crags/edges (of visual and geological interest)
	• avoid areas of nature conservation interest eg species rich grassland along the valley floor and sides
	• aim to create an attractive balance between pasture and woodland, maximising the characteristic patchwork of light and shade
	• give priority to planting on areas of improved pasture where woodland cover has been denuded; encourage natural regeneration, particularly in the vicinity of ancient semi-natural woodlands

Potential Local Indicators for Monitoring Landscape Change in the Wooded Rural Valleys

Potential Indicators	Pressure for change	Preferred direction of change
Upland semi-natural oak woodland	Decrease due to neglect and lack of natural regeneration and management	Maintain/ Regenerate
Herb-rich grassland and wet meadows	Decrease due to agricultural intensification	Maintain/Increase
Historic mills	Conversion to residential uses	Sympathetic restoration

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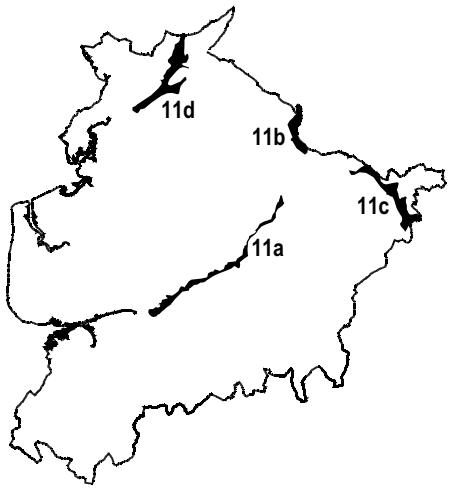

VALLEY FLOODPLAINS

Character Areas

11a Lower Ribble Valley
11b Long Preston Reaches
11c Aire Valley
11d Lune Valley

Key Environmental Features

- ***Open, flat floodplains*** subject to periodic flooding which provide fertile grazing land.
- ***Steep wooded bluffs*** and terraces enclose the floodplain and provide sheltered habitats for wildlife.
- ***Valley floodplain features*** such as meanders, levées, oxbows, weirs, flood defences, flax retting pools, old river channels and islands provide visual interest and variety in the floodplain landscape, as well as being of historic and nature conservation interest.
- ***Mature spreading floodplain*** trees are distinctive elements of the floodplain; they provide shelter for grazing animals and are an important source of dead wood.
- ***Settlements and stone bridges*** mark ancient bridging points of the river.
- ***Numerous archaeological sites, castles and ancient settlements*** located along the length of the river are a testament to the use of the valleys as historic communication corridors.
- ***Standing water and lowland bogs*** provide important wetland habitats.
- ***Floodplain hay meadows*** and pastures which have evolved over a long period of time without much agricultural improvement and are of great value to wildlife.

Local Forces for Change and their Landscape Implications

- ***Loss of open flood plain views and riparian habitat*** by fencing out river corridors, sometimes associated with tree planting. Fencing out stock may also lead to riparian habitats becoming overgrow with rank vegetation and loss of species diversity. The fencing may become covered with detritus and some footpath access to the river bank may be affected. Localised loss of riparian habitat can also, conversely result from intensive grazing up to the river's edge. This may also cause bank instability, with increased erosion and widening of river channels. Reduced river flow as a result of water abstraction from both above and groundwater sources, which may affect the habitat value of wet meadows, as well as the migratory habits of some fish.
- ***Eutrophication*** as a result of high levels of nutrient input can lead to excessive algal growth and depleted river oxygen levels. Intensification of agricultural activity and the amalgamation of farm units may cause an increased risk of this form of pollution.
- ***Decline of prominent scattered floodplain trees*** due to over-maturity. The loss of these distinctive trees would have a significant impact on the visual character of the Valley Floodplains.
- ***Expansion of riverside settlements*** such as Skipton. Built development on the margins of the floodplain forms a prominent edge alongside the open meadows and expansion of settlement in such sensitive sites may have a significant impact on views along the floodplain. There is also a risk that the manipulation of landform required to ensure such new development is elevated above the flood zone may disrupt the natural, subtle topography of the

floodplain bluffs and terraces. In addition, such development may affect the landscape settings of archaeological sites and historic riverside castles, particularly along the River Lune.

- ***Loss of semi-natural wet meadow habitats*** due to the trend towards further agricultural intensification and amalgamation of farm units, particularly in dairy farming and also to improved flood defence measures.
- ***Pressures for sand and gravel extraction*** are likely to continue. This activity may have a significant visual impact on the tranquil, open floodplain landscapes, although there may be long term opportunities for wetland habitat creation once the extraction is complete.
- ***Increasing pressures for recreation,*** particularly along the valley floor in the form of caravan parks, car parks, restaurants signage etc may damage the character of the landscape and urbanise an otherwise rural landscape.

Landscape Strategy for the Valley Floodplains

Strategy	Recommendations
Conserve valuable floodplain habitats	• encourage low intensity grazing in the remaining semi-natural habitats, which include mire, fen, flushes, marshy grassland and wet meadow
	• manage riparian habitats to avoid erosion due to over-grazing, while also restricting the unchecked growth of riparian vegetation
	• monitor levels of nutrients in river channels
	• conserve dry grassland on bluff slopes
Conserve a natural river form	• avoid engineered solutions to water management, such as canalisation, bank hardening and river straightening
	• conserve natural river floodplain features, such as meanders, oxbows, old river channels, ponds and islands
Conserve historic and archaeological sites in the Valley Floodplains	• avoid damage to archaeological sites through recreation, agriculture and tree planting. Archaeological assessment prior to all forms of development should be carried out where appropriate.
	• consider the setting of historic and archaeological sites when planning and implementing all landscape management action
Conserve the distinctive stone walls in the Aire Valley	• restore and maintain the characteristic network of stone walls in 11c (the Aire Valley)
Enhance woodland planting on the outer fringes of the Valley Floodplains	• consider opportunities to extend and link woodlands on the fringes of the floodplain with existing woodlands on the valley sides
	• encourage the use of natural regeneration where appropriate
	• avoid areas of ecological and geological interest
	• respect the characteristic sinuous form of the floodplain bluffs and any existing floodplain fringe woodlands
Enhance opportunities for maintaining the distinctive character of the floodplain trees	• initiate a programme of tree planting to ensure that there is a new generation of locally native specimen floodplain trees
	• encourage planting of native black poplar as feature trees on the floodplain from locally provenanced cuttings

Strategy	Recommendations
Enhance opportunities for informal recreation	• create greenway networks along river banks which connect into urban areas • ensure river bank management schemes (for habitat enhancement or water flow management) do not lead to reduced access to the river corridor • manage public access to sensitive river banks and wet meadows to avoid river bank erosion due to trampling and the disturbance of key wildlife habitats • provide opportunities (both physical and intellectual) to appreciate the historical and natural assets of the Valley Floodplains
Restore wetland habitats in areas where they have been lost or degraded	• investigate feasibility of restoring seasonal inundation to grasslands alongside water courses • seek opportunities for wider wetland habitat restoration or creation on the valley floor
Restore a natural river form in areas where it has been lost	• seek opportunities to restore a more natural river form in areas where it has been engineered
Ensure built development on the fringes of the floodplain is visually integrated within this rural landscape setting	• encourage the conservation of existing trees, as well as additional tree planting on the outer fringes of the floodplain. The aim should be to provide a sense of containment and a visual marker at the edge of the floodplain and some screening to soften the appearance of the built up edge. • localised planting of floodplain woodlands may be appropriate in some locations (for instance in 11c) to screen and integrate large scale housing, warehouse and commercial developments • avoid ribbon development along transport corridors (and the floodplain) at a distance from existing settlement centres • conserve long open views across and along the floodplains • restore and maintain historic bridges and crossing points
Restore sand and gravel extraction sites	ensure every opportunity is taken to create and manage a new range of wetland habitats to deliver biodiversity objectives

Potential Local Indicators for Monitoring Landscape Change in the Valley Floodplains

Potential Indicators	Pressure for change	Preferred direction of change
Mature floodplain trees	Decline due to over-maturity	Increase
Open flat floodplain pastures	Decrease due to pressures for built development, recreation and sand and gravel extraction	Maintain
Archaeological sites	Most are protected, but pressures for built development could impinge on their landscape settings	Sympathetic management/ Maintain settings
Wetland habitats	Decrease due to pressures from grazing and recreation	Maintain/Increase
Hay meadows and pastures	Decrease due to water abstraction and agricultural intensification	Maintain/Increase

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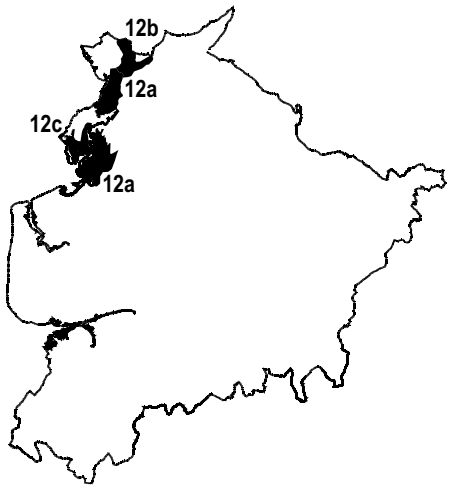

LOW COASTAL DRUMLINS

Character Areas

12a	*Carnforth – Galgate - Cockerham*
12b	*Warton - Borwick*
12c	*Heysham - Overton*

Key Environmental Features

- ***Low whale-back hills*** - an eroded low drumlin form - surrounded by flat lowlands and shallow river valleys.
- ***Well-managed species rich hedgerows*** provide a strong field pattern and reinforce the distinctive undulating topography.
- ***Areas of standing water with marginal fens and swamps and mosslands*** in lowlands between drumlins provide important wetland habitats
- ***Hill top copses*** emphasise the drumlin form and provide shelter for wildlife.
- ***Lynchets and old field banks*** are a distinctive feature in some fields.
- ***Winding country lanes*** provide a series of contrasting open, then enclosed views of the surrounding countryside.
- ***Settlement is concentrated on the shallow valley slopes***, above poorly-drained land; the larger towns are typically at river crossings.

Local Forces for Change and their Landscape Implications

- ***Leisure and recreation developments*** based on former sand and gravel quarries may introduce urban features into the rural landscape.
- ***Significant expansion of urban areas and surrounding rural settlements*** results in erosion of field patterns, loss of woodland and the amalgamation of adjoining settlements. Continued development could result in large scale suburbanisation and loss of landscape character. Built development also has implications for inter-drumlin wetlands where they are drained to allow built development to take place, such as on the outskirts of Lancaster.
- ***Pressure for communication masts*** on drumlin hill tops would clutter the profile of the landform.
- ***Highway related development*** may be a threat to landform through the use of cut and fill (for instance along the Lancaster Southerly Bypass). Infrastructure encourages the development of retail, leisure and large scale industry at motorway junctions. This may erode the distinctive landform of the area as well as increasing urbanisation of the rural landscape.
- ***Agricultural change, such as expansion and amalgamation of farms,*** would result in the loss of the already limited number *of features such as hedgerow trees and copses leading to weakening of the field pattern and a reduction in ecological interest.*

Landscape Strategy for the Low Coastal Drumlins

Strategy	Recommendations
Conserve the inter-drumlin wetlands	• site sand and gravel quarries away from sensitive wetland sites • avoid drainage of wetlands for built development or highway improvements
Conserve the pattern of discrete rural settlements	• avoid ribbon development which will lead to the amalgamation of adjacent dispersed settlements • planting may help to delineate boundaries of settlements
Conserve the hedgerow and woodland network	• avoid further fragmentation of the hedgerow network, designing built development around the existing landscape structure and designing planting to enhance structure and wildlife habitats • give priority to hedgerows which contribute to the characteristic hedgerow network and those adjacent to semi-natural grasslands • avoid amalgamation of fields which will erode the strong landscape pattern • conserve ancient semi-natural woodlands
Enhance the number of rural landscape features	• planting hedgerow trees and managing hedgerows for wildlife will enhance their status as features • new farm woodlands and copses should remain small in scale and enhance hill top copses as features of the landscape • creation of small field ponds may add to the diversity of the landscape and enhance the nature conservation value of the landscape
Enhance settlements character of existing settlements	• new built development which responds to the local vernacular will enhance the character of existing settlements • design cues which are taken from the historic core of settlements (rather than the enveloping new development) will be more beneficial to the settlement's overall character • small scale planting may be used to screen unsightly developments and enhance visual amenity on urban fringes
Restore sand and gravel quarries	• former sand and gravel quarries should be restored to a mosaic of wetland habitats

Potential Local Indicators for Monitoring Landscape Change on the Low Coastal Drumlins

Potential Indicators	Pressure for change	Preferred direction of change
Wetland habitats	Drainage due to agricultural practices or new built development	Maintain/Increase
Species-rich hedgerows	Decrease due to agricultural intensification and new built development	Maintain/Increase

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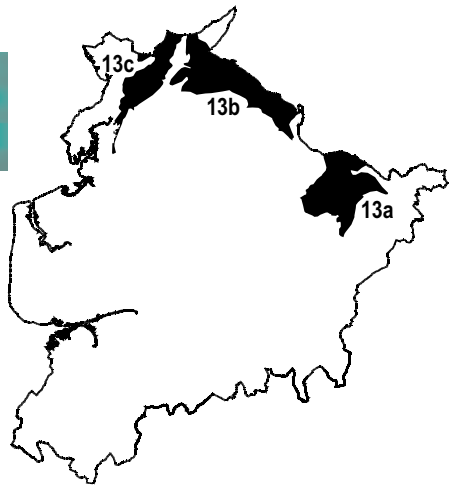

DRUMLIN FIELD

Character Areas

13a	*Gargrave Drumlin Field*
13b	*Bentham - Clapham*
13c	*Docker - Kellet - Lancaster*

Key Environmental Features

- ***Rounded drumlins*** create a distinctive, undulating topography; the alignment of the drumlins reflects the direction of glacial ice flow. The lush green pasture contrasts with the colour and profile of the distant fells.
- ***Small mixed woodlands*** punctuate the landscape, provide foci and give scale to the landscape.
- ***Sheltered marshy hollows between drumlins*** contrast with the smooth open hilltops and provide visual texture and wetland habitats.
- ***Strong field patterns*** with distinctive stone walls and hedgerows enhance landform and provide visual texture. The walls reflect the underlying solid geology.
- ***Dispersed pattern of stone villages, hamlets and farmsteads*** which are sited in sheltered locations on the mid-slopes of drumlins. Larger settlements are clustered at significant road junctions or river crossings.
- ***Historic houses and designed parkland*** provide visual and ecological diversity.

Local Forces for Change and their Landscape Implications

- ***Amalgamation/diversification of farms*** may influence field sizes and field boundaries. Field expansion would weaken the strong field pattern and reduce ecological interest. Agricultural change is difficult to predict in the current economic climate, but recent symptoms include new farm buildings, field enlargement and occasional signs of gappy hedges.
- ***Pressure for communication masts*** on drumlin hill tops would clutter the profile of the landform.
- ***The continued neglect of farm woodlands*** will lead to a their decline and loss of landscape structure. The prominent hill top copses, which are such visual features of the landscape, would be particularly vulnerable to this type of neglect.

Landscape Strategy for the Drumlin Field

Strategy	Recommendations
Conserve the distinctive rolling landform	• minimise vertical elements, such as communication masts, to retain the uncluttered, open character of the landscape
	• shelter built development within the undulating landform - avoid ridgelines or hill tops
Conserve the character of small woodlands	• careful visual analysis should be undertaken before extending small scale mixed woodlands to large scale woodlands
	• opportunities for new planting should reflect existing scale and character, ensuring the survival of the characteristic hill top copses
Conserve semi-natural habitats	• conserve and restore inter-drumlin wetlands and semi-natural grasslands wherever these occur
	• conserve and restore ancient semi-natural woodlands
Conserve characteristic settlement patterns	• avoid ribbon development which may detract from the characteristic dispersed pattern of groups of buildings in a rural setting
	• ensure new development is associated with tree planting (of native trees) which links to the existing network of woods and hedgerows
	• restrict built development on the skyline of drumlins; buildings should be sited on the mid-slopes, above poorly drained land
Conserve historic houses and designed parkland	• preserve the settings to country houses, encouraging continued management of grounds as parkland
	• ensure entrances are not affected by road alterations or built development
	• avoid loss of integrity by division into multiple ownership and retain as permanent pasture
	• retain traditional parkland features such as railings, kissing gates and veteran trees
Conserve field boundaries which give the landscape a strong pattern	• maintain stone walls, particularly around clusters of buildings and settlements
	• planting up gaps in hedgerows will enhance the hedgerow network
	• plant hedgerow trees to promote their survival as valuable elements of the landscape
Restore quarries to enhance landscape character	• ensure quarry restoration has regard to landscape and biodiversity, as well as archaeological and cultural value

Potential Local Indicators for Monitoring Landscape Change in the Drumlin Field Landscapes

Potential Indicators	Pressure for change	Preferred direction of change
Hill-top skylines	Increased clutter from communication masts and new built development	Maintain

Potential Indicators	Pressure for change	Preferred direction of change
Diverse pattern of distinctive stone walls, hedgerows and hedgerow trees	Decrease due to agricultural intensification with field enlargement and loss due to lack of management or maintenance	Manage/Maintain
Hill-top copses and small woodlands	Decrease due to lack of management	Manage/Increase

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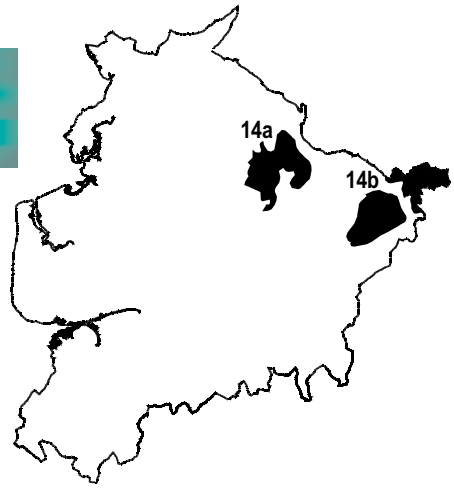

ROLLING UPLAND FARMLAND

Character Areas

14a Slaidburn - Giggleswick

14b Lothersdale and Cringles

Key Environmental Features

- ***An intact network of drystone walls,*** often of limestone creates a distinctive landscape structure and reflects the historic parliamentary enclosure of marginal land. The limestone walls are generally in good condition.
- ***Limestone outcrops, crags and knolls*** occur on the exposed edges and provide a sharp contrast to the gentler rolling formations of the grazing land and provide shelter for sheep.
- ***Lush green pastures and isolated herb rich hay meadows and pastures*** provide a contrast to the muted hues of the Moorland Hills backdrop.
- ***Winding, narrow lanes bordered by stone walls*** suggest a sense of enclosure in an exposed landscape.
- ***Stunted wind-blown hawthorns and gorse*** on roadsides and steeper hillsides which accentuate the sense of the exposed uplands and provide important tree nesting spots for birds.
- ***Beech stands on the steeper rocky slopes*** provide distinctive landmarks particularly when seen against the skyline.
- ***Isolated stone farmsteads, stone barns and walled circular enclosures*** are visual features as well as being important historically and culturally; clustered stone villages are sited on south facing slopes and there are some linear settlements.

Local Forces for Change and their Landscape Implications

- ***Limestone quarries*** are changing the landform locally and are particularly visible in a rolling landscape.
- ***Changing patterns of forestry and re-structuring of plantations*** will have an impact on the visual character of the landscape.
- ***Changes in emphasis in the agricultural sector,*** whether it be intensification, amalgamation or lack of management, would have an impact on the proportion and distribution of landcover elements and the condition of features such as stone walls and farm buildings.
- ***Pressure for development of prominent vertical elements*** such as communication masts and wind farms which would be particularly visible on the open, rolling summits.

Landscape Strategy for the Rolling Upland Farmland

Strategy	Recommendations
Conserve the character of the rural pastoral landscape	• conserve the remaining unimproved grasslands and hay meadows by employing traditional management practices and avoiding the use of artificial fertilisers; • reducing existing grazing pressure will ensure pastures continue to form a contrast with the muted hues of the surrounding Moorland Hills. • the repair of dry stone walls using traditional techniques and materials
Conserve the rocky outcrops and limestone knolls characteristic of the landscape	• site quarries and communication masts away from distinctive rocky knolls or outcrops which are visual landmarks. • manage limestone grasslands to meet biodiversity objectives
Conserve stands of beech and walled enclosures	• Encourage walling around stands of beech trees to restrict grazing and allow natural regeneration of the next generation of trees • maintain walled enclosures to ensure their survival
Conserve the upland built character	• encourage a built form which respects the grouped nature of buildings on isolated farms. • choice of materials is vital in this upland location; new buildings should be constructed of stone (preferably from local quarries)
Enhance the pattern of forestry	• encourage the use of Forest Plans to minimise the impact of forest re-structuring on the landscape • the restructuring of existing plantations should aim to create natural shapes which fit the local topography, an appropriate scale of woodland and an increase in the proportion of broadleaved species • enhance and restore ancient semi-natural woodland
Restore limestone quarries to be sympathetic to landscape character	• quarries present an opportunity for habitat creation and management for wildlife and may provide sites of geological or visual interest.

Potential Local Indicators for Monitoring Landscape Change on the Rolling Upland Farmland

Potential Indicators	Pressure for change	Preferred direction of change
Limestone walls	Decrease due to lack of management	Repair/Maintain
Historic beech stands and walled enclosure	Decrease due to maturity and lack of management	Manage
Stone farmsteads and barns	Loss of integrity of vernacular stone architecture as a result of new buildings/additions and the use of new types of farm machinery, or overall neglect	Sympathetic restoration

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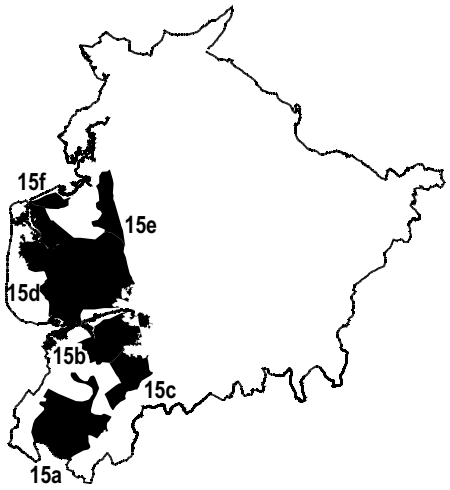

COASTAL PLAIN

Character Areas

15a	*Ormskirk - Lathom - Rufford*
15b	*Longton - Bretherton*
15c	*Croston - Mawdesley*
15d	*The Fylde*
15e	*Forton - Garstang - Catterall*
15f	*Knott End - Pilling*

Key Environmental Features

- ***Large, geometric arable fields*** reflecting the history of enclosure of the land and allowing long views over the landscape. This area has the highest surviving concentration of fields originating from the medieval open field system in Lancashire.
- ***Colourful arable fields*** including poppies and corn marigold are important for their visual and biodiversity value and as a reflection of farming history.
- ***Marl pit and brick pit ponds*** reflect past extraction of clays and provide an important wildlife habitat for aquatic plants, great crested newt and a wide range of aquatic invertebrates, including some rare species.
- ***Historic brick built farms*** including highly distinctive red brick barns with ornate brickwork detailing reflect the culture and history of the working landscape;
- ***Estate plantations, shelter belts and parkland trees*** provide a sense of enclosure, a backdrop to views and shelter for wildlife.
- ***Pockets of semi-natural woodland along brooks and watercourses*** provide valuable shelter and habitats for wildlife (such as flocks of pink-footed geese), as well as recreational potential and links with the historic landscape.
- ***Meandering rural lanes*** respond to the local landform and provide a contrast in experience from the straight lanes of the surrounding Mosslands.
- ***A potentially rich archaeological record*** within the peat on the fringes of the Mosslands may provide clues as to early settlement and land use before drainage and improvement.

Local Forces for Change and their Landscape Implications

- ***Continued suburbanisation and large scale residential development*** will create harsh edges to local villages and introduce urbanising elements into a rural landscape. It may also result in the loss of local landscape features on the edges of rural settlements such as hedges, banks and mature trees. Infill development may disrupt the characteristic spacing of traditional settlement and impinge on the setting of older buildings. All built development is likely to be prominent in this relatively open landscape. Pressure for such development is particularly intense on the fringes of the major coastal urban areas and in the vicinity of the M6 motorway corridor.
- ***A decline in the biodiversity of the landscape*** caused by field expansion and agricultural intensification. This includes the use of herbicides causing the loss of arable weeds and eutrophication resulting in loss of pasture herbs and aquatic vegetation. Most of the very few surviving remnants of the diverse semi-natural habitat mosaic which made up this landscape before modern intensive agriculture continue to be under

threat from agricultural intensification and recreation.

- ***Pressure for communication masts, electricity pylons and other prominent developments*** which will be particularly prominent on local skylines.
- ***Conversion of historic brick-built barns*** for use as residential dwellings or for intensive agricultural practices. There are many examples of insensitive conversion, where harshly coloured imported bricks and other inappropriate materials are poorly integrated with the historic buildings and where the wider landscape setting of groups of farm buildings has been severely compromised.
- ***Fragmentation of historic estates*** and their associated designed parklands, trees, shelterbelts and coverts as a result of changes in land ownership and opportunities for development. This may lead to the loss or degradation of historic landmark woodlands which are key features in this relatively large scale open agricultural landscape.
- ***Sand and gravel extraction*** may result in significant landscape change, involving the substitution of intensively managed pasture and arable farmland with water bodies and other new habitats of nature conservation and recreational potential.
- ***Degradation and loss of field ponds*** due to a combination of drainage, pollution (from agricultural run-off) and in-filling. These ponds are important cultural remnants (of the historic marl pits) and have become valuable refuges for wildlife in an intensively farmed landscape.
- ***Pressures for recreational facilities,*** particularly in the Fylde on the fringes of Blackpool. There are particular pressures for the development of golf courses and static caravan sites, as well as substantial leisure complexes close to the M6 corridor. These facilities represent an additional urbanising influence in the rural fringe areas.
- ***Waste Management developments including treatment works and landraising*** has had an influence on local landscape character including the Wyre estuary. Future expansion and phased restoration of the Jameson Road landfill site will result in further land raising adjacent to the Wyre estuary, forming areas of high ground.

Landscape Strategy for the Coastal Plain

Strategy	Recommendations
Conserve distinctive field patterns and related landscape features and landforms	• encourage retention and enhancement of hedgerows and hedgerow trees especially in relation to hedgerows of visual, historic and wildlife importance
	• initiate programmes of tree planting, particularly on the fringes of settlements and in locations where trees will help to screen infrastructure and other developments
	• retain alignments of roads and tracks and restrict over-engineered alterations
	• restrict further future landraising or other waste management developments in areas not previously affected by landfill to avoid damage to field patterns or interruptions to long views over the landscape
Conserve remnants of former agricultural habitat mosaics	• protect and conserve wet and other semi-natural agricultural grasslands
	• encourage the conservation and restoration of arable field margins with traditional arable weeds
Conserve remaining field ponds	• restrict infilling of ponds and their loss as a result of development (through the development control process)

Strategy	Recommendations
	• ensure new development retains field ponds and promotes their conservation as landscape features
	• wherever possible, create new field ponds
	• develop buffers around field ponds designed to provide terrestrial habitat and visual diversity as well as to minimise the impacts of pollution/eutrophication from agricultural run-off
Enhance the distinctive character and landscape setting of rural settlements	• resist infill ribbon development along open lanes (particularly near Pilling)
	• retain and enhance historic landscape features, including verges, hedgerows and open spaces within settlements
	• encourage the use of local materials, particularly in older settlements
	• encourage tree planting using native species(including black poplar of local provenance where appropriate) within and on the fringes of rural settlements to improve views and approaches to the built edge
	• retain existing field boundaries and use as a framework for new development
	• avoid introduction or proliferation of suburban building styles, materials and layouts
	• consider the landscape setting of historic buildings and restrict inappropriate new development in such areas
Enhance the river corridor landscapes	• consider the landscape setting of historic buildings encourage habitat enhancement eg creation of wet fringes, riverside woodlands, pools, riffles and meanders
	• protect water courses from the impacts of eutrophication by adopting best practices for the application of agricultural fertiliser and pesticides, creating buffer zones and encouraging programmes for nutrient removal
	• minimise the number of pollution incidents caused by a variety of built developments by developing appropriate arrangements for water catchment and run-off
Enhance opportunities for informal recreation	• improve access to water courses for angling and walking (including disabled access)
	• ensure development proposals protect and enhance on-site features and promote wider access to water courses
Enhance landscapes associated with major infrastructure developments such as the M6 and M55 corridors	• improve drainage arrangements to limit pollution and flood water retention
	• consider tree planting in areas where it can integrate new development or infrastructure, but take care to avoid mass tree planting in characteristic open landscapes and avoid screening key views
Restore, retain, manage and replant hedgerows and hedgerow trees	• encourage hedgerow laying, replanting and gapping up, giving priority to those hedgerows which contribute to the overall hedgerow pattern and those which provide links between hedgerows and to semi-natural habitats
	• encourage the use of headlands and field margins to arable fields to reduce damage by agricultural machinery
	• where possible restore the historic structure and character of designed landscapes by encouraging parkland tree planting, boundary repair and the retention of designed features

Strategy	Recommendations
Restore broadleaved woodlands particularly in the vicinity of watercourses	• encourage planting in riparian buffer zones wherever this will not conflict with access requirements for flood defence purposes or ecological interests • manage grazing levels and introduce fencing to allow regeneration of existing woodlands • conserve and restore ancient semi-natural woodland
Restore completed sand and gravel workings	• former sand and gravel workings should be restored to a mosaic of wetland habitats including appropriate informal recreation

Potential Local Indicators for Monitoring Landscape Change on the Coastal Plain

Potential Indictors	Pressure for change	Preferred direction of change
Field ponds	Decrease as a result of agricultural drainage schemes/pollution and infilling	Increase
Historic brick barns	Conversion to residential use - potential loss of landscape setting	Sympathetic restoration
Designed parkland landscape	Fragmentation due to changes in land ownership and new built development, as well as an overall lack of management	Maintain/ Sympathetic Management

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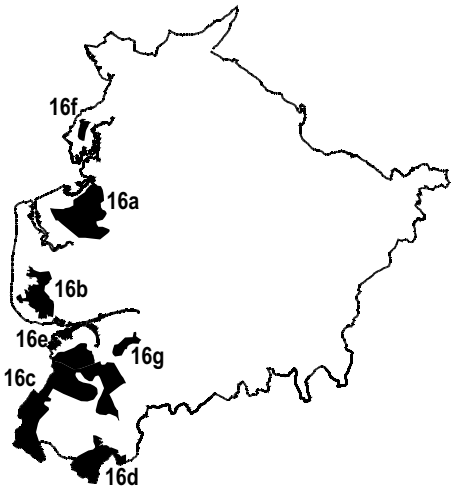

MOSSLANDS

Character Areas

16a	*North Fylde Mosses*
16b	*South Fylde Mosses*
16c	*Martin Mere and South West Mosses*
16d	*Skelmersdale Mosses*
16e	*Tarleton Mosses*
16f	*Heysham Moss*

Key Environmental Features

- ***Low lying flat landscape***, which provides extensive uninterrupted views for great distances.
- ***Market gardening and arable production*** are highly productive and provide a pattern of colours and textures year round.
- ***Remnant mosses and fen carr*** are important semi-natural wetland habitats which provide a glimpse of the landscape before it was drained and exploited for agriculture in the late 18th and 19th centuries.
- ***Field patterns*** which are distinctive and preserve the historic patterns of mossland reclamation.
- ***Drainage ditches*** form an important network of semi natural wetland habitats especially in West Lancashire.
- ***Rural roads and tracks,*** which are unlit and provide clear views of the night sky in the area. Many are raised on embankments with ditches, culverts and bridges.
- ***Farms and isolated houses at end of dead-end tracks*** on low sand and gravel or boulder clay ridges; loose-knit, linear settlements are strung out along embanked roads.
- ***Potentially rich archaeological sites***, which are gradually revealed as the remaining traces of peat are desiccated and blown away. The peat contains evidence of early settlement on the fringes of the Mosslands, which were exploited for reeds/rushes, grazing and fuel.

Local Forces for Change and their Landscape Implications

- ***Pressure for suburbanisation and the expansion of settlements.*** For instance infill within villages with a loose-knit structure and linear ribbon development along tracks to isolated farmsteads threatens to impinge on the historic patterns of settlement and the landscape setting of older dwellings and farms. New development, particularly that containing vertical elements such as pylons, will often be visually dominant in this flat, open landscape. The lighting associated with new buildings and infrastructure may reduce the inherent tranquillity of the Mosslands and diminish the characteristic views to the night sky.
- ***The impacts of drainage and flood control*** on important wetland habitats, such as mosses, ditches and fen carr. Such habitats, which have been subject to a lowered water table (due to agriculture or abstraction for development) may lose their characteristic vegetation and are susceptible to scrub encroachment by birch, pine and rhododendron. Drainage may also have serious potential impacts on peat covered archaeological evidence. For instance, it would affect organic remains such as seeds, wood causeways, tracks and evidence of human occupation.
- ***Loss of peat*** through erosion and oxidation as a result of intensive agriculture has been significant in arable and horticultural areas

and will ultimately lead to the loss of this high quality agricultural land.

Climate change may in time lead to an increase in the probability of storm surges and potentially severe flooding in the low-lying Mosslands. Subtle changes to marsh and mossland habitats may be sufficient to lead to the decline of rare species, which may become isolated in fragmented communities with minimal scope for migration. However, climate change may also provide opportunities for different species to thrive. Flooding and storms may have negative impacts on the horticultural sector, although higher temperatures would reduce heating bills in glasshouses.

The decline of small mixed woodlands and shelterbelts, particularly on Martin Mere and South West Mosses is generally due to neglect, although there is some evidence that these woodlands are used for shooting game. The woodlands are valuable for wildlife and are visually prominent in the open landscape.

Water-borne pollution results from intensive agricultural practices when chemicals from pesticides and fertilisers run-off into ditches and local water courses. There is a risk that such run-off will damage the delicately balanced nutrient levels of the marshes and wetlands on the western fringes of the Mosslands.

Landscape Strategy for the Mosslands

Strategy	Recommendations
Conserve the distinctive character and landscape structure of the Mosslands	• limit development in the Mosslands, particularly that which obscures views of the flat open landscape or which introduces new vertical elements
	• conserve woodland blocks, particularly those associated with historic landscapes
	• maintain the large geometric field patterns and avoid the amalgamation of fields
	• counteract the impact of abrupt built edges (on low ridges) with wooded planting as buffers
	• avoid new lighting in the landscape
	• limit the extent of mineral and peat extraction with restoration to wetland habitats
Conserve historic settlement patterns and building styles	• conserve the wider landscape setting of older houses and historic halls
	• avoid infill ribbon and other development which would detract from the characteristic rural settlement pattern
	• avoid the use of incongruous building materials and building styles
	• encourage small scale planting in association with new development to help integrate it within the landscape, while framing the characteristic long views
Conserve important habitats	• conserve the hunting grounds and nesting sites of barn owls
	• retain roosting sites and feeding grounds, especially long grass and water habitats for bats. Special care should be made in the conversion or renovation of farm buildings
	• avoid the formation of habitat links between grey and red squirrel populations and manage existing woodlands to encourage red squirrels.
	• encourage management of arable field margins as refuges for scarce weed species and food sources for seed eating birds
	• conserve the important network of drainage ditches and bank-side habitats and woodlands as semi natural habitats.

Strategy	Recommendations
	• encourage practices which preserve winter feeding grounds of geese and swans
	• monitor levels of water abstraction to retain key wetland habitats
	• monitor water quality, particularly downstream of major industry
Enhance the character and wildlife value of water courses and their environs	• encourage the retention and improvement of riparian habitats, particularly in areas where water courses are intensively managed
	• restrict surface water run-off from new developments
	• explore options for introducing meanders, ox-bows, reed beds and other areas of open water and riparian buffer zones to maximise habitat value and minimise the impacts of water borne pollutants
Enhance the character and landscape setting of settlements	• careful siting, design and the use of local materials is essential in this open, flat landscape where most development is likely to be prominent
	• encourage natural regeneration and avoid the use of non-native species in gardens and in the vicinity of settlements
	• limit tree planting to areas where there is established tree cover
	• avoid tall or vertical structures
Restore the relict mosslands	• raise local water tables and seal the margins of the remaining relict mosslands by blocking existing drainage channels

Potential Local Indicators for Monitoring Landscape Change on the Mosslands

Potential Indicators	Pressure for change	Preferred direction of change
Remnant mosslands	Decrease due to ongoing drainage	Maintain/Increase
Isolated farmsteads	Loss of isolation due to new residential development	Maintain
Riparian habitats	Loss of ecological interest due to erosion/drainage or built development	Maintain/Increase

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ENCLOSED COASTAL MARSH

Character Areas

17a Clifton and Hutton Marsh

17b Cockerham Coast

Key Environmental Features

- ***Level, expansive tracts of large scale farmland with a geometric field pattern*** allow long views to distant land marks.
- ***Drainage ditches*** are important semi-natural wetland habitats in a man-made environment.
- ***Sea dykes*** support a more diverse and natural land cover, including species-rich grassland and gorse scrub. Banks, ditches and boundaries preserve the historic sequence of coastal reclamation and corresponding changes in drainage technology.
- ***Areas of open water and flooded grasslands*** provide valuable wetland habitats and a feeding ground for geese and other birds.
- ***Coastal grazing marsh*** provides important feeding grounds for wintering geese, swans and waders and for rare upper salt marsh plant communities
- ***Remnant areas of marsh*** are important refuges for local wildlife.
- ***Areas of raised land*** resulting from landfilling activities form areas of high ground which may resemble coastal cliffs.

Local Forces for Change and their Landscape Implications

- ***Pressures for built development and major infrastructure*** would be prominent in long views and may restrict views from the Coastal Plain (15) to the coastline. It would also lead to the loss of the open, isolated character of the Enclosed Coastal Marsh. The development of pylons, communication masts, sewage works and other buildings would be intrusive in this flat, exposed landscape and there may also be risks that the run-off from built development and landfill may contain pollutants which might damage sensitive wetland habitats.
- ***The changing economy of the agricultural sector*** is a significant influence on the condition and character of the Enclosed Coastal Marsh. Horticulture has recently suffered a slight decline and the viability of the sector is increasingly dependent on the policy of national supermarkets. There is a risk that glasshouses will be underused or fall into disrepair if there are local changes to the economy of horticulture and this would have severe landscape impacts.
- ***Agricultural intensification, with its associated drainage and risk of eutrophication*** has the potential to damage valuable wetland habitats, while also leading to further loss of hedgerows and field patterns.
- ***Climate change*** may increase the risk of storm surges with flooding and loss of inter-tidal habitats, with consequences for land uses and wetland habitats. It may also influence the local balance of species.
- ***Policies for managed retreat and coastal inundation*** may be influential in the future management of the Enclosed Coastal Marshes and would represent a significant and positive force for change.

Waste management developments including treatment works have already had a significant influence on local landscape character, particularly on the northern banks of the Ribble. The future expansion and phased restoration of the Clifton landfill site is particularly relevant and will result in further landraising adjacent to the Ribble Estuary, forming areas of high ground (approximately 15m high) which will be restored to agriculture.

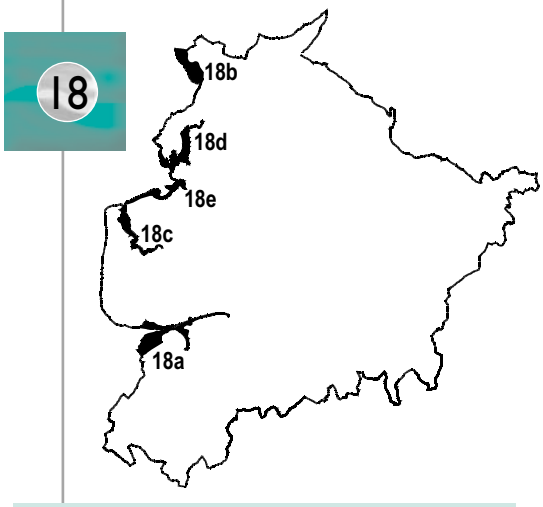
Improvements to water quality in the Ribble Estuary may influence the use of the area for leisure activities.

Landscape Strategy for the Enclosed Coastal Marsh

Strategy	Recommendations
Conserve the expansive landscape and remote character of the Enclosed Coastal Marsh	• conserve the dead-end lanes which restrict through traffic
	• resist infill ribbon development alongside open lanes
	• conserve the characteristic long views to the Ribble Estuary from the farmland inland by restricting the development of infrastructure (such as pylons and masts) and by resisting further future landraising proposals in areas previously affected by waste management developments.
	• conserve the historic pattern of coastal reclamation sea dykes and defences
Conserve valuable wetland habitats	• restrict the drainage of adjacent farmland
	• create buffer zones to minimise the impacts of water borne pollutants on wetlands
	• encourage the management of dykes and ditches for nature conservation, as well as water management
	• monitor water quality to ensure that all new developments meet water quality standards
	• avoid further reclamation of remnant areas of marsh by landfilling and landraising and avoid ecologically insensitive flood defence works
Enhance opportunities for informal recreation	• encourage the development of connecting footpaths and cycleways which link the Estuary to settlements inland and complete the remaining sections of the Lancashire Coastal Way
	• provide interpretation facilities
	• deflect visitors from the more sensitive wetland habitats
Restore wetland habitats and species	• promote the restoration of marshes from reclaimed land where possible to enhance wildlife value
	• encourage planting of native black poplar from locally provenanced cuttings

Potential Local Indicators for Monitoring Landscape Change on the Enclosed Coastal Marshes

Potential Indicators	Pressure for change	Preferred direction of change
Coastal grazing marsh habitats	Decrease due to drainage and pollution from agricultural/landfill run-off	Maintain
Historic pattern of sea dykes and defences	Fragmentation due to agricultural intensification/built development	Maintain



OPEN COASTAL MARSH

Character Areas

18a	*Ribble Marshes*
18b	*Hest Bank - Silverdale Marshes*
18c	*Wyre Marshes*
18d	*Lune Marshes*
18e	*Pilling and Cockerham Marshes*

Key Environmental Features

- ***Valuable saltmarsh habitats*** which provide relatively undisturbed habitats for numerous wetland flora and fauna. The remaining ungrazed marshes (restricted to the Wyre estuary) are particularly attractive and valuable in ecological terms. The saltmarshes of Morecambe Bay are some of the most important examples of this habitat in Britain.
- ***Maze of creeks, channels, gutters, drainage ditches and brackish pools*** which etch a distinctive pattern in the surface of the marsh and which are important semi-natural habitats.
- ***Coastal clay cliffs*** adjoining the open marsh support a rich assemblage of wild flowers.
- ***Historic roads/tracks and bridges*** allowing access to the sea, which indicates the progressive drainage and settlement of the area, and evidence of important coastal industries, such as the brine wells to the west of Pilling.
- ***Relict land*** *uses* including ruined sea walls, lines of stakes marking successive retreats of sea defences, landing jetties, salt evaporation pans, fisheries, ferry points, dry docks and quays.
- ***Expansive sandbanks, mudflats and shallow waters*** provide habitats for a range of worms, crustaceans and shellfish, as well as an ideal spawning and nursery area for fish and even basking sharks.
- ***Bird life*** brings movement - the area is important as a feeding ground for geese, swans, ducks and waders and the saltmarshes are a vital link for migrating birds.

Local Forces for Change and their Landscape Implications

- ***The threat of water-borne pollutants*** from some of the major industrial premises is ongoing. The sites are monitored to ensure that current environmental quality standards are maintained, but there is always a risk of accidental spillage, or that the continued redevelopment of the sites may lead to the discovery of contaminated land. Such contamination could have a severe impact on the delicately balanced ecosystem of the Open Coastal Marsh.
- ***Degradation of valuable wetland habitats*** due to polluted run-off from adjacent farmland and intensive agricultural practices such as drainage, intensive sheep grazing and hedgerow removal. Drainage and the lowering of local water tables may lead to drying out on the fringes of mosses and marshes so that these habitats are vulnerable to the invasion of birch and willow scrub.
- *Rising sea level as a result of climate change. There is likely to be an increased risk of flooding, high tides and tidal surges. Existing flood defences would provide much protection, but there is a risk that the extensive mudflats and saltmarshes in the Morecambe Bay and*

Ribble Estuary would be lost. This would have a major impact on the internationally significant bird feeding grounds in these areas.

Pressures for recreation and visitor facilities on the fringes of the marsh can lead to problems such as erosion and fly-tipping. Car parks are often visually intrusive in these fragile, open landscapes and may lead to serious erosion.

The enhancement of coastal defences in response to the threat of climate change and associated flooding. Such major infrastructure works may have damaging effects on the natural environment, including flooding or erosion on an adjoining coastline.

Policies for managed retreat and coastal inundation may be influential in the future management of the Open Coastal Marshes and would represent a significant and positive force for change.

Landscape Strategy for the Open Coastal Marsh

Strategy	Recommendations
Conserve valuable wildlife habitats	• monitor and control levels of grazing on the Morecambe Bay saltmarshes
	• monitor and control discharges from local water courses to ensure the risk of contamination and eutrophication is minimised
	• avoid further reclamation by landfilling, landraising and other activities
	• avoid further enclosures of salt marsh and ecologically insensitive flood defence works
	• conserve the plant communities on coastal clay cliffs
	• manage ditches and drainage channels to maximise wildlife benefits and maintain an appropriate balance between freshwater and saltwater
Conserve the expansive landscape and tranquillity of the Open Coastal Marsh	• keep built development and infrastructure to an absolute minimum
	• any built structure should be low and constructed to minimise visual impact in views across the marsh
	• avoid vertical structures, such as communication masts or telegraph poles
Enhance coastal defences wildlife conservation interest	• manage the use of coastal defences for informal recreation which is compatible with
	• wherever possible, consider 'soft' engineering options which will maximise benefits to wildlife habitats
Enhance opportunities for informal recreation coastal defences	• improve interpretation facilities in relation to wildlife, natural and historic features, including the history of successive reclamation and
	• ensure boardwalks and signed trails provide access to circular routes while avoiding the risk of erosion
	• deflect visitor pressure from the more sensitive nature conservation sites
	• site car parks away from sensitive coastal marsh habitats

Potential Local Indicators for Monitoring of Landscape Change on the Open Coastal Marsh

Potential Indicators	Pressure for change	Preferred direction of change
Saltmarsh habitats	Decrease due to impacts of water-borne pollutants, drainage and potential rises in sea level	Maintain
Relict land uses - lines of stakes, ruined sea walls, jetties etc.	Deterioration due to neglect and dereliction	Maintain

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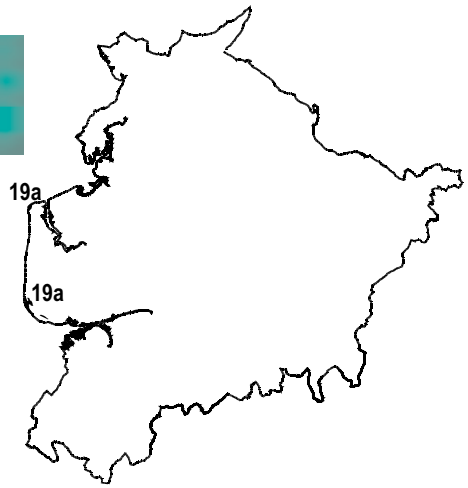

COASTAL DUNES

Character Areas

19a Fylde Coast Dunes

Key Environmental Features

- ***Hummocky landform*** provides sheltered hollows and microclimatic zones within its core.
- ***Windswept grassland and bare sand*** which conveys a sense of exposure to coastal elements and allows unobscured views out to sea.
- ***Valuable habitats,*** including dune slacks, dune heath, shingle and sandy shingle, all of which are recognised as a priority for conservation in the UK Biodiversity Plan.
- ***Potential archaeological sites*** in areas where evidence of human activity is buried beneath shifting dunes – and in the inter-tidal area
- ***St Annes Dunes*** are a remnant of a largely natural landscape type, rare in terms of the limited extent of human modification

Local Forces for Change and their Landscape Implications

- ***Climate change could bring sea level rises and storm surges*** which might change the rate of sediment input to dunes and even the location of sand dunes along the coast. Pressures for hard sea defence works to combat this risk may themselves alter the dynamics of sand movement.
- ***Pressures for the construction of services*** such as sewers, pipelines etc. which may destroy small relict areas of valuable dune habitat and further fragment the small remaining tracts of dune.
- ***Recreation pressures*** are an ongoing force for change in this confined area of dunes. The key problem is erosion by trampling which may lead to the degradation of natural grass swards and the destabilisation of the dunes. Litter is also a visual eyesore.
- ***Sand extraction*** elsewhere on the coast could potentially lead to loss of dune habitat, although studies have shown that the sand is accreting in this area so rapidly that sand extraction at current rates would not have a significant impact.
- ***Lowered water table*** due to development and increased water abstraction affecting dune slack and pools.

Landscape Strategy for the Coastal Dunes

Strategy	Recommendations
Conserve dune systems	• avoid further fragmentation by development including golf courses
	• maintain the role of natural coastal processes in coastal defence
	• monitor the area of sand dunes and rates of accretion/erosion of sand especially in relation to storms, sand extraction and the impact of constructed defence schemes elsewhere on the coast
Conserve natural sand dune vegetation	• restrict vehicular access
	• minimise the potential for erosion by trampling, grazing or mowing
	• restrict invasion by sea buckthorn, gorse, birch and pine
	• manage the dune habitats to meet biodiversity objectives
Enhance opportunities for informal recreation	• design visitor facilities to minimise landscape impacts and ensure they are sited well inland from sensitive dune systems
	• provide boardwalks to give access to the dunes without risking damage by erosion
	• monitor and control levels of litter and fly-tipping
Restore natural dune grasses in areas where they have become degraded	• fence off areas suitable for restoration of sand dune vegetation so that there is minimal risk of trampling while the grasses become established
	• restore/create dune slack habitat

Potential Local Indicators for Monitoring Landscape Change on the Coastal Dunes

Potential Indicators	Pressure for change	Preferred direction of change
Dune habitats	Decrease due to fragmentation by infrastructure development and erosion by recreational pressures	Maintain/Increase

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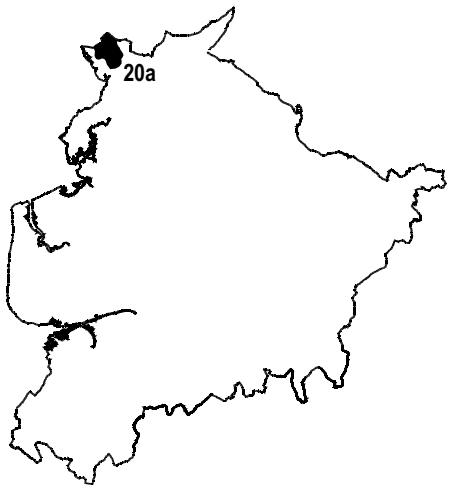

WOODED LIME-STONE HILLS AND PAVEMENTS

Character Areas

20a Arnside and Silverdale

Key Environmental Features

- ***Semi-natural broadleaved woodlands*** and yew woodlands (many of them SSSIs) are highly valued for their cultural and conservation interest. Yew provides winter colour and contrast within the native ash woodlands, ancient examples of which contain small leaved lime and show evidence of former coppicing.
- ***Species rich and semi natural calcareous grasslands*** are of particular importance for rare flora and insects, particularly butterflies.
- ***Rocky outcrops, limestone scars and limestone pavements*** provide microclimates for rare plants. English Nature recommends that the Morecambe Bay Pavements (eg Gait Barrows NNR) should be a candidate for designation under EU legislation as a Special Area of Conservation.
- ***Abandoned limestone quarries, ironstone and copper mines*** colonised by vegetation are often valuable habitats for wildlife or used for recreation.
- ***Lime kilns*** reflect the processing of lime for limewash, plaster and later as a soil conditioner and are features in the landscape.
- ***Wetlands including pools, reed beds and a marl lake (Hawes Water)*** provide contrast to the dry hills and support nationally rare birds including bittern, marsh harrier and bearded tit.
- ***Dry stone walls*** are a distinctive silver colour and well maintained - they are visually attractive and provide ecological and cultural interest.
- ***Semi-natural broadleaved woodlands*** (including coppiced woodlands) shelter wildlife and are valued for their cultural and conservation interest.
- ***Visible historic features,*** such as the hill fort at Warton Crag, industrial archaeology, areas of parkland and historic field patterns are of cultural interest. Parkland landscapes include valuable habitats for veteran trees.

Local Forces for Change and their Landscape Implications

- ***Changes in agricultural patterns and farm management*** are the most significant force for change. Under-use of some areas of farmland and especially reduction in grazing leads to scrub encroachment and ultimately the loss of species-rich grassland. Intensification of agriculture on the remaining farmland resulting in rising nutrient levels also leads much more quickly to a loss of species rich grasslands, changes in texture and colour of the grazing land and changes in landscape character. More intensive management of grassland could also lead to increases in polluting run-off into adjacent wetlands such as Hawes Water and Leighton Moss.
- ***A decline in the permanent agricultural workforce*** leads to neglect of routine farm maintenance such as disrepair of stone walls, substitution *of hedgerows by post and*

wire fencing and lack of farm woodland management.

- The trend to produce silage as a winter feed rather than to take a hay crop involves changes in grassland management techniques and will lead to loss of species rich hay meadows.
- Amalgamation of farms to fewer, larger farms may lead to expansion of fields, changed management techniques and selling off of vernacular farm buildings for other uses.
- The continued rise in visitors may result in increases in traffic, leading to pressure on narrow lanes, conversion of local farm buildings, expansion of car parks and the loss of pastures to amenity uses. Sensitive landscapes, such as the limestone pavements and semi-natural habitats, may be affected by erosion and disturbance from high numbers of visitors.
- Continuing pressure for recreational developments such as caravan sites, camp sites and golf courses may have significant visual impact, even in this well wooded landscape. There have also been planning applications for larger scale developments, such as holiday villages, which may have significant impacts in this diverse, sensitive AONB landscape.
- Removal of loose stone and small limestone outcrops to improve agricultural access results in loss of local stone features and sometimes pockets of associated species-rich grassland.
- Acquisition and management of land for nature conservation in particular to create habitat for rare bird species and also to conserve nationally rare limestone and wetland habitats will lead to a positive change in the appearance of the protected habitats, as well as having nature conservation benefits.

Landscape Strategy for the Wooded Limestone Hills and Pavements

Strategy	Recommendations
Conserve the diverse mosaic of habitats	• discourage the conversion of unimproved grazing to improved pasture and amenity grassland in order to maintain bio-diversity, particularly of the limestone grasslands, and prevent polluting run-off into adjacent areas
	• discourage the drainage of wetland habitats and encourage the restoration and management of such features
	• resist amalgamation of farms to conserve the scale of buildings and pastures
	• avoid intensification of farming in specific areas and decline in others which would alter the balance, colour and texture of landcover and landscape elements
	• conserve the integrity of all limestone pavements and other outcrops
Conserve landscape condition and natural beauty	• promote the conservation and maintenance of hedgerows and walls, encouraging permanent agricultural workforce who undertake routine maintenance
	• control erosion of sensitive landscapes, using signs and careful location of car parks/visitor facilities to direct visitors away from sensitive habitats
	• visitor facilities and car parks should pay particular attention to siting and design, using local materials and avoiding urbanising elements
Conserve traditional management techniques	• encourage management of diverse grassland meadows for hay crops rather than intensive silage production
	• encourage conservation woodland management practices such as coppicing and pollarding

Strategy	Recommendations
	• encourage appropriate grazing management
Conserve the character of the woodland and farmed landscapes	• conserve ancient semi-natural woodlands and encourage the management of small farm woodlands, giving priority to woodlands and hedgerows which provide links between semi-natural habitats
	• control the rise in horse paddocks and try to maintain historic field boundaries rather than post and rail fences which are incongruous elements
Conserve the traditional farming landscape	• support new and existing rural enterprises, particularly where these promote the continued viability of farms, that are in keeping with landscape character and quality, and are of particular benefit to the local economy
Characteristic woodland landscapes	• give priority to the conservation and enhancement of ancient semi-natural woodlands
Restore landscape condition	• encourage the restoration of hedgerows and walls where they have been removed, and promote the conservation and restoration of ancient field patterns
Restore redundant buildings	• encourage new uses for old or redundant farm buildings, paying particular attention to the scale, character and use of materials of existing farm buildings
Restore redundant quarries	• manage redundant quarries in a sympathetic manner, having regard to their visual, wildlife, recreational, geological and historic interest. Many quarries present an opportunity for habitat creation, management for wildlife and for interpretation of historic and natural features

Potential Local Indicators for Monitoring Landscape Change in the Wooded Limestone Hills and Pavements

Potential Indicators	Pressure for change	Preferred direction of change
Semi-natural grasslands	Decrease due to agricultural intensification, rising nutrient levels and scrub encroachment	Maintain/Increase
Drystone walls	Loss due to neglect and amalgamation of fields, although increased grant aid for restoration may counteract this trend	Repair
Semi-natural broad-leaved woodland	Increase due to natural regeneration and scrub encroachment. Coppicing may lead to loss of woodland cover where over grazing is not prevented	Increase/Manage
Historic mines and quarries	No significant change predicted as no longer worked, although may be threatened by visitor use and erosion	Maintain/ Sympathetic management
Limestone outcrops	Loss due to agricultural improvement, recreational development etc	Maintain

21

LIMESTONE FELLS

Character Areas

21a Leck Fell

Key Environmental Features

- ***Upland limestone fells*** support important semi-natural grassland plant communities.
- ***Underground cave systems*** provide geological interest and attract cavers and potholers to the area.
- ***Ancient semi-natural woodland*** within gills and on steeper slopes are important for uncommon plants.
- ***Heather-clad hillsides*** produce dramatic swathes of colour in late summer.
- ***Limestone pavements*** provide sheltered environments for rare plants and ferns.
- ***Dry stone walls and field barns*** reflect the exposed, upland setting and underlying geology and provide distinctive, memorable landscape patterns.
- ***Long straight enclosure*** walls of later 18th or early 19th century date, reflecting past land management of the high fells.

Local Forces for Change and their Landscape Implications

- ***Increasing pressures for recreation,*** particularly around popular cave systems and limestone pavements, may damage the character and ecological value of these limestone features. Eroded footpaths and parking adjacent to viewpoints are particular concerns, as it may be intrusive in isolated rural moorland areas. The impacts of fly-tipping and litter may also be intrusive.
- ***Potential pressure for wind turbine developments and communication*** masts is a possibility, however such proposals are likely to be resisted, both within and in close proximity to the Yorkshire Dales National Park. Such developments are intrusive if they create a cluttered skyline, particularly where the Limestone Fells form a backdrop to local views.
- ***Continuing deterioration in the upland farming economy*** could lead to stone walls gradually falling into disrepair and the erosion of distinctive field patterns. In time, this could lead to significant landscape change since most existing walls are well maintained.

Landscape Strategy for the Limestone Fells (Leck Fell only)

Strategy	Recommendations
Conserve the distinctive limestone features of the open fells	• manage access to avoid damage to sensitive habitats e.g. limestone cliffs, screes and pavements
	• encourage maintenance of limestone walls and field barns to retain the historic field patterns of the fells
Conserve the remote character of the fells	• resist the approval of wind turbine and communication mast developments, particularly on skyline locations
	• any proposals for future visitor facilities require careful siting and design - using local materials - in these sensitive landscapes
Conserve characteristic clough woodlands	• manage ancient semi-natural woodlands
	• stockproof and manage grazing in remaining broadleaved woodland to allow natural regeneration
Enhance the existing valuable mosaic of upland habitats	• manage heather moorland to encourage heather regeneration

Potential Local Indicators for Monitoring Landscape Change on the Limestone Fells (Leck Fell only)

Potential Indicators	Pressure for change	Preferred direction of change
Area of calcareous grassland	Erosion due to over grazing	Manage and protect
Area of semi-natural clough woodland	Loss due to neglect and lack of management	Increase
Area of heather moorland	Loss of heather moorland as a result of over grazing	Manage
Condition and length of dry stone walls	Deterioration because of neglect and eventual loss of historic field patterns	Repair
Condition and existence of traditional field barns	Conversion or demolition	Sensitive restoration

4.

Implementing the Strategy

4.1

How to Use the Landscape Strategy

The *Landscape Strategy for Lancashire* is based on a detailed characterisation of the county's landscape resources which can be used to help guide its future conservation, development and enhancement. The study will assist in understanding and promoting regional and local landscapes and provides a strategic framework to ensure landscape considerations are taken into account in all aspects of environmental decision-making.

Experience elsewhere suggests that there is a wide range of applications and uses for landscape character assessment. By analysing local forces for change and their implications for landscape change, and by recommending ways to bring about positive landscape change, the Landscape Strategy is designed to guide the process of making judgements and taking decisions on landscape issues. The principal applications include:

- ***planning*** - eg development plan policies, studies of development capacity for housing, minerals and other forms of development, development control, planning consultations on forestry and agricultural developments;
- ***environmental assessment*** - eg strategic environmental assessment of policies, plans and programmes and environmental assessment of major development projects;
- ***land management*** - eg guiding woodland expansion, targeting resources for land management, evaluating the effectiveness of agri-environment funding;
- ***economic development and regeneration*** - eg tourism strategies and marketing, environmental benefits from new development, urban fringe enhancement, reclamation and restoration;
- ***monitoring landscape change*** - developing indicators of landscape change in order to monitor rates and patterns of *change. This information can be used to target areas for conservation or enhancement.*
- ***local landscape assessment*** – the Strategy forms a context study for production of more local landscape assessments and strategies by District Councils, as have been carried out at West Lancashire and Pendle.

Used in conjunction with Lancashire's Historic *Landscape Assessment,* the study can also be of value in researching key relationships between landscape elements, physiographic and cultural factors.

The *Strategy* can be used by everybody involved in the planning, design and management of landscapes. It provides a common source of baseline information and is designed to encourage inter-agency co-operation. Box 4.1 suggests the roles and responsibilities of the County Council's partners in implementing the *Strategy* and demonstrates how they might use the material.

Box 4.1 Applying and Implementing the Landscape Strategy - a Partnership Approach

- ***County Councils and Unitary Authorities*** - strategic policy development, co-ordination and prioritisation of environmental and rural development policies and decision making, funding for key initiatives. Guidance in implementing the development control process, including preparation of development briefs and conditions and contributions to evidence at public inquiry. Development of capacity studies, preparation of frameworks for project implementation and promotion and co-ordination of *Strategy* recommendations. .
- ***Government agencies*** in particular the Countryside Agency, the Environment Agency, MAFF, FRCA, The Forestry Commission, English Nature, English Heritage - prioritisation and targeting action to implement the Strategy, funding for key initiatives.
- ***District Councils*** - guidance in implementing the development control process, including preparation of development briefs and conditions, and contributions to evidence at public inquiry, consideration of landscape issues in planning policy development, development capacity studies, analysis of the landscape setting of towns and villages, preparation of frameworks for project implementation, input to Countryside Design Summaries, developing more detailed local landscape assessments and studies using the Strategy as a guide.
- ***Landowners and land managers*** – using the *Strategy* to inform decision making on land management issues and their long term planning.
- ***Public sector and other countryside managers*** - targeting funds to achieve optimal landscape benefits, providing a benchmark for monitoring future landscape change, improving awareness of landscape issues through promotion and interpretation.
- ***Developers*** - promoting the benefits of high quality, distinctive environments as a setting for new development and the value of reflecting local identity by using characteristic settlement patterns and local buildings materials as a model for the layout and design of new developments.
- ***Local community groups, parish councils and voluntary organisations*** - input to local community projects and initiatives e.g. Village Design Statements, Local Heritage Initiatives, influencing relevant policy action by others - by encouraging agencies/NGOs and local authorities to draw on the landscape character approach, improving awareness of landscape issues and the cumulative impacts of small-scale landscape change.
- ***Educational establishments and researchers*** - promoting an understanding of landscape character and the influence of landscape change. Researchers from a range of academic fields should benefit from the systematic approach adopted by the study and from the availability of a baseline description of the landscape at a point in time.

4.2
Guiding Principles

The Landscape Strategy is designed to act as a catalyst for positive landscape change. It highlights the principal forces for landscape change and anticipates their potential implications for landscape character. It also provides guidance to help accommodate change in a positive way. There is an emphasis on the potential for landscape enhancement and on finding opportunities to strengthen distinctive character through the design and management of new and existing landscapes. This guidance is not intended to be prescriptive, but provides a starting point for action.

The remainder of this final chapter identifies 'guiding principles' for Lancashire's landscapes, drawing on the material within the strategic analysis of landscape character in each of Lancashire's 21 landscape character types. These guiding principles are:

- Recognise and enhance local distinctiveness
- A positive approach towards landscape change
- Adopt an integrated approach to landscape resources
- Monitor landscape change

There are roles for a range of organisations in tackling the issues raised and the following sections set out the guiding principles for implementing the Strategy and the recommended approach for each principle.

4.3

Recognise and Enhance Local Distinctiveness

The Landscape Strategy defines local distinctiveness by identifying the special landscape characteristics, features and patterns which make local landscapes instantly recognisable to those who live and work in them. It takes account of all the landscapes within the study area, not just those which are recognised by special designations. By giving particular emphasis to the intrinsic value of local places, it suggests the need to conserve and enhance the relatively ordinary landscapes which provide the setting to towns and villages.

4.3.1

Ensure Landscape Change Reinforces Local Landscape Character

The Landscape Strategy promotes landscape diversity and local distinctiveness. The vast majority of forces for landscape change are acting to reduce the inherent variety of landscape character - schemes for new housing estates, roads and services tend to be built to a standardised design. The Strategy aims to counteract this trend by recognising local distinctiveness and ensuring that future landscape change reinforces the inherent contrasts in landscape character described in the landscape character assessment.

This has important implications for landscape design and management. The landscape is a dynamic phenomenon; it is always in flux, but high standards and attention to detail will ensure that landscape change is a positive influence on landscape character and local distinctiveness.

Recommended Approach

- ***Avoid a standardised approach to design*** - the Landscape Strategy can inform the process of negotiation between planning officers and developers by identifying key landscape issues for an area and measuring how effectively these are addressed in proposals.
- ***Specify how proposals for landscape change can reinforce local landscape character*** - developers can be required to use the material in the landscape character assessment and to demonstrate how their proposals are designed to reflect local landscape character through conservation, enhancement, restoration etc.
- ***Encourage the use of local building materials and locally native species*** - through a review of the design guidance available to developers.
- ***Prioritise resources*** - focus action where it is likely to be most effective -the Strategy sections for each landscape character type include recommendations on how resources can be prioritised for maximum effect
- ***Encourage creative options for landscape change*** - particularly in relation to tree and woodland planting and other habitat creation. There is often scope to build on and enhance the identified local landscape character. New tree and woodland planting should reflect the local scale and pattern of topography, hydrology and field patterns, but these have often become degraded and there may be positive opportunities for landscape change.

4.3.2

Apply the Strategy to Urban as well as Rural Landscapes

The *Landscape Strategy* applies to the whole landscape ie settlements as well as rural areas. It is particularly important to consider the character and relative sensitivity of urban landscapes in historic core areas, older industrial age districts and landscapes on the fringes of towns and villages, which are constantly in transition and under particular pressure for change. Many settlements are

sited on the boundary between one type of landscape and the next - often because early settlers required access to different types of land. The landscape character assessment provides clues for the design of new development on the fringes of towns and villages by identifying distinctive combinations of landscape elements, patterns and features.

Recommended Approach

- ***Consider the characteristic pattern of local settlement*** and ensure that new development contributes to a recognised pattern, rather than overwhelming it. New development provides opportunities for landscape enhancement, for instance in the form of new tree planting and the provision of open spaces. The pattern of new buildings and spaces should reflect the existing form - be it clustered around a village green, terraces which follow steep contours or small groups of larger buildings surrounded by small-scale dispersed settlement.

- ***Conserve the distinctive settings to rural settlement*** and maintain the contrast between urban and rural areas. Large housing estates and bypass schemes on the fringes of settlements may cut off villages and towns from their landscape setting. Such schemes risk blocking local views and footpaths and damaging the subtle visual relationship between local field patterns and the pattern of streets and buildings. In most cases, the Landscape Strategy provides a starting point and context for further studies which might identify the views, approaches, landmarks and distinctive landscape settings of specific settlements.

- ***Use local building materials*** for local stone walls, as well as buildings. In some cases

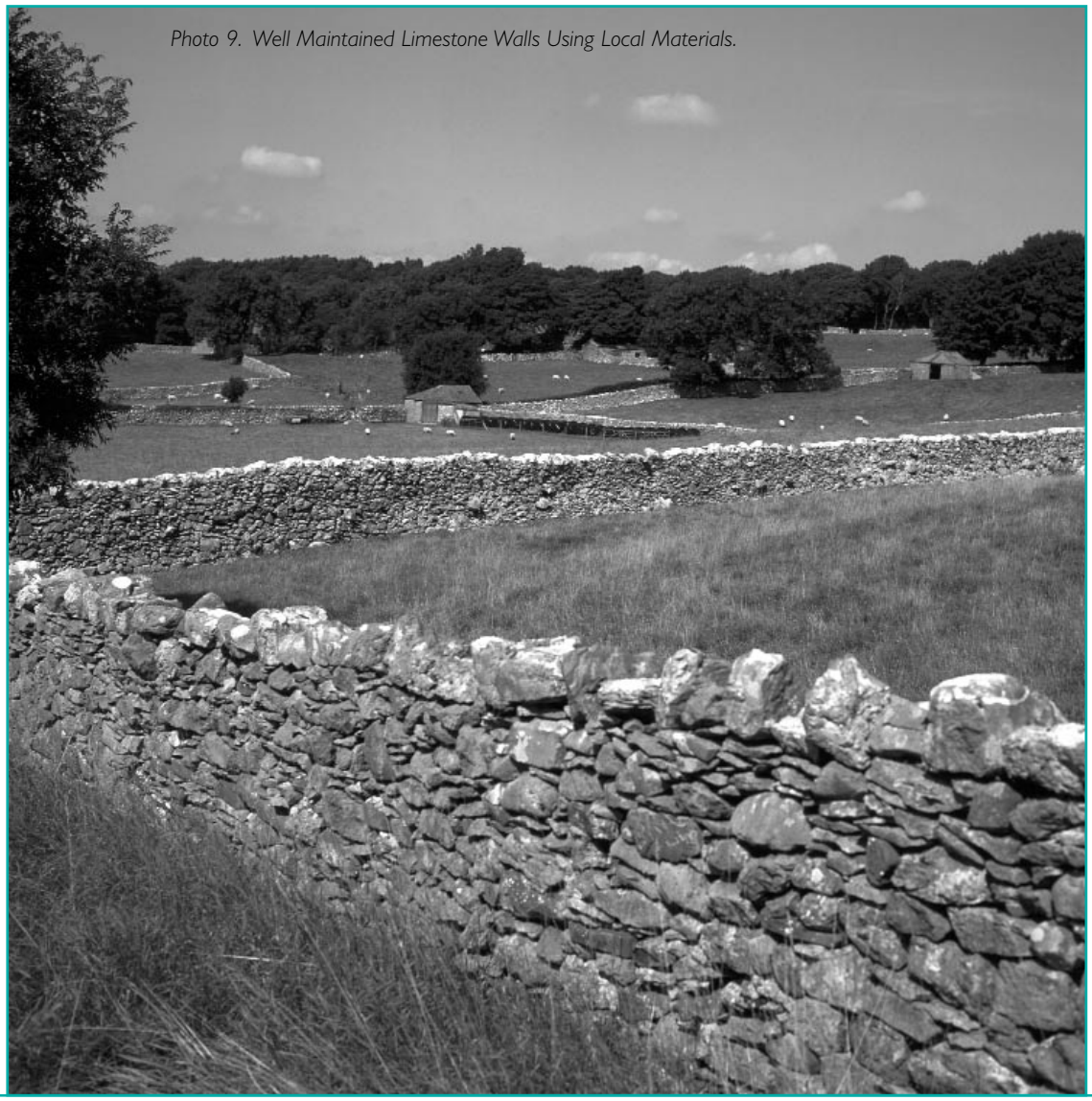

Photo 9. Well Maintained Limestone Walls Using Local Materials.

(1) English Heritage, Streets for All, 2000

local stone or brick may no longer be available, but there is a wider variety of materials available than ever before and it will always be possible to obtain a close match.

- ***Consider the cumulative impact of small-scale changes*** (such as standard highway improvements and lighting) which can impose a relatively urban character in rural areas - particularly on the fringes of built up areas. Safety issues should be approached in an innovative way; alternative design solutions (using a different choice of materials, signage, road markings etc) [1]

- ***Promote, identify and refine the characterisation approach within urban areas.*** The landscape character assessment provides a very broad classification of landscape character types within urban areas. Further work is required to refine this initial work and to develop more detailed analysis of the character and relative sensitivity of urban areas. The Landscape Strategy and the Historic Landscape Assessment provide a valuable context for this work. The forthcoming Lancashire Historic Urban Assessment Programme will provide a strategic view regarding built heritage character and archaeological potential. This will be submitted for adoption by Local Authorities as Supplementary Planning Guidance.

4.3.3
Encourage Local Action

Local people are best placed to understand and interpret their landscapes. They have a wealth of knowledge which can be tapped by planners, countryside managers and even developers. Most Parish Councils would welcome the opportunity for proactive dialogue with local planning officers, rather than responding defensively to planning applications.

Recommended Approach

- ***Encourage community initiatives*** which enhance people's appreciation and understanding of local landscape character eg Village Design Statements, Parish Maps and studies associated with the Local Heritage Initiative. There is scope to offer communities more practical involvement in local landscape interpretation and management schemes.

- ***Develop an index of source material*** which might assist local groups with their research into the character and history of their local landscape.

- ***Develop a website*** to publicise and promote information on opportunities, resources and new initiatives.

4.4
A Positive Approach Towards Landscape Change

4.4.1

The 'environmental capital' concept

The 'environmental capital' concept looks at the attributes of a given feature and asks why these are important. The Strategy doesn't just record what is there – it explains why the key environmental features are important. They might be visual attributes, valuable habitats, distinctive field patterns or sites which reflect important historic/archaeological heritage, which are valuable for a variety of reasons. In practice, priority is given to a) protecting or conserving features which provide important, rare, non-substitutable attributes; and b) securing at least no net loss and where possible a gain in attributes which are substitutable and important. This may mean losing the original feature, provided a compensatory increase in the valued attribute can be guaranteed in an appropriate location.

Recommended Approach

- ***Use the key environmental features to assist the development control process*** - the presence of identified key *environmental features* should be a prompt for extreme caution. A development which is expected to have an impact on such features may be a candidate for refusal or for stringent planning conditions which ensure that any environmental capital lost is replaced. The *Landscape Strategy* can provide a baseline for the environmental impact assessment (EIA) of major developments of all kinds;

built development, roads, mineral extraction etc. The impacts of development on identified key environmental features would be a focus for an EIA and proposals for mitigation would have to demonstrate that environmental capital is conserved.

- ***Give priority to the conservation of key environmental features*** and minimise any loss of 'non-substitutable' environmental capital by avoiding landscape change in these locations. Every opportunity should be taken to seek gains in 'substitutable' assets by ensuring that any loss of habitat or landscape features is replaced by habitat creation or planting elsewhere.
- ***Direct landscape change appropriate to landscape character.*** Change should be appropriate to each landscape character type. Some landscapes are more able to accommodate development without detracting from their distinctive landscape character. They are typically well managed landscapes, with an intact network of field boundaries, a unity of architectural character and a degree of enclosure provided by landform, trees and woodland cover. Perceptual aspects, such as tranquillity and remoteness, are also important. The Strategy does not identify which types of landscape are best suited to different types of development, but it does provide key information to inform decisions on which types of development are appropriate in which landscapes. It also indicates how development can be designed to 'fit' different types of landscape. Landscape management is relevant too, as landscapes can be managed to increase their relative robustness and capacity to accommodate change.
- ***Take advantage of radical landscape change*** by adopting creative solutions for nature conservation, heritage, recreation or new development in areas where the character of the landscape has become degraded. Landscape character assessment can provide a model for creating new landscapes, restoring habitats and interpreting local landscape patterns, for instance on derelict or brownfield sites.

4.4.2

Adopt Proactive Measures for Landscape Enhancement in Areas under Particular Pressure for Change

Landscapes on the fringes of settlements, areas which have good access to infrastructure, town centres, brownfield sites, and even landscapes which are becoming popular for recreation are under particular pressure for change. Such areas should be a focus for attention and a priority for action to manage change so that it has a positive impact. The

Photo 10. Newly Laid Hedge.

Strategy identifies which forces for change are likely to be most influential in the different landscape character types through the sections entitled local forces for change and their landscape implications.

Recommended Approach

- ***Give priority to brownfield sites*** where restoration/recreation offers direct opportunities to create new landscape character which reflects the surrounding urban landscape context.
- ***Give priority to landscape enhancement on the fringes of settlements, in areas where there are pressures for recreation and alongside public roads and footpaths*** where such schemes are likely to have maximum visual impact.
- ***Encourage new planting*** which reflects the identified local landscape character and which is designed to fulfil a specific function; for instance as a visual screen, to provide containment, to enhance appreciation of landscape character or to reflect community values.
- ***Ensure visitor facilities do not damage sensitive sites***, such as prominent skylines, and sites of archaeological interest or high ecological value.

4.4.3

Consider the Wider Context

Many small developments and changes can gradually erode landscape character over time if the wider context is not considered for each planning application or land management decision. The Landscape Strategy will help to counteract this trend by setting sites within a broader landscape classification and by highlighting areas where long views, a hierarchy of field patterns or specific landscape features make an important contribution to overall landscape character. Reference to the landscape character assessment and the historic landscape character assessment (in preparation) may provide clues to landscape character and features which might provide a model for design; and reference to the landscape strategies for each landscape character type could reveal potential impacts which should be taken into account in design development.

Recommended Approach

- ***Research the evolution of landscape character and local landscape heritage*** in the broad area surrounding a site as a pre-requisite to design. Refer to the Landscape Character Assessment descriptions and Lancashire's Historic Landscape Character Assessment as a starting point, bearing in mind that a site close to the boundary between landscape character types may share some of the characteristics of the adjacent area.
- ***Assess the proposed character and pattern of new proposals*** (for built development or landscape management) within the context of the wider landscape - the extent of the area considered depends on the character of the landscape; sites within areas with a relatively enclosed landscape (rolling, well treed etc.) will have a more confined influence than those which are in open landscapes with long views, or areas which are overlooked in views from adjacent uplands.
- ***Consider the hydrological implications of landscape change***, including drainage, run-off, and potential pollution, which can have a widespread impact.
- ***Assess the broader landscape implications of proposals for the conversion of farm buildings, as well as the architectural merit of the proposals*** - Lancashire has a relatively high number of applications for the conversion of farm buildings into dwellings. Where such conversions are in sensitive landscapes, the associated power lines, car parks, garden plants, fences and driveways can potentially have more visual impact than the buildings themselves.
- ***Consider the full range of possible environmental impacts,*** including pollution of air and water, traffic, noise and socio-economic impacts, as well as the potential visual impact of views from a range of vantage points.
- ***Take account of perception, as well as visual landscape characteristics*** - new development may lead to impacts on

remoteness, tranquillity and dark night skies; landscapes which evoke a strong perceptive response are inherently sensitive to change and may not be suitable for some types of new development.

4.4.4

Take Account of Time

Landscapes inevitably mature and change with time and the Landscape Strategy advocates positive and sustainable landscape management, particularly in relation to field boundaries. Farmers have little economic incentive to conserve hedgerows, stone walls and hedgerow trees, yet these landscape features make a valuable contribution to the visual character and structure of the landscape.

Recommended Approach

- ***Secure funding for long-term, creative landscape management*** to ensure that the intended landscape character is achieved and maintained. Agri-environmental measures, such as Countryside Stewardship, fulfil an important function in this respect, but only a proportion of applications are approved for funding. The Landscape Strategy could help to promote the issue and demonstrate how landscape management proposals can make an effective contribution to the enhancement of landscape character and habitats, and the conservation of cultural and historic *landscapes.*

- ***A proactive approach to the management and repair of field boundaries is required.*** Priority should be given to those field boundaries which form prominent patterns in long views, those which define field margins alongside public roads and footpaths and those which are close to farms and settlements. Field stone walls, banks, ditches or hedgerows which are historic boundaries and hedgerows which provide critical wildlife corridors may also be a priority for conservation action.

4.5

An Integrated Approach to Landscape Resources

The character, condition and relative sensitivity of the county's landscape resource is influenced by a wide range of factors from the economy of the agricultural sector to UK Government policy on renewable energy and EU directives on nature conservation. The *Landscape Strategy* suggests implications for a range of different disciplines and partner organisations and it is essential that landscape issues are tackled in an integrated, cross-disciplinary way. There is also an increased need to share and co-ordinate information to maximise opportunities for funding. The County Council is committed to a partnership approach and will take the lead in promoting and co-ordinating the implementation of the Strategy.

4.5.1

Maximise Opportunities for Nature Conservation

Data and advice are available from government agencies, such as English Nature, the Environment Agency and the Forestry Commission, but there is also a wealth of site-specific information held by local wildlife trusts, County Councils and other local authorities, conservation groups and individuals throughout the study area. The *Strategy* highlights the basic principles for integrating nature conservation interests into proposals for all forms of landscape change. They are set out below and apply to environmental decision making in all the landscape character types.

At a strategic scale, the hierarchy of nature conservation designations (EU, national and local: including geological and geomorphological sites and features) are relevant considerations and broad (often EU funded) initiatives for environmental enhancement or economic development, such as the Bowland Initiative and Elwood, should also be taken into account when promoting nature conservation opportunities.

Recommended Approach

- ***Take every opportunity to enhance natural habitats,*** taking particular care in relation to non-substitutable environmental capital (see also key environmental features) and seeking specialist advice on the technical and practical implications of proposals for landscape change. Proposals for new built development may often be enhanced by incorporating principles for nature conservation and sustainable landscape management. This includes adaptation of agricultural buildings which may be important for bats and owls.

- ***Maximise the area of habitats and the links between them*** - The more extensive the habitat, the higher the prospects that it may hold sustainable populations of scarce species of flora and fauna. If habitats are linked by 'corridors' of hedgerows, verges, water courses or shelterbelts, there are opportunities for species to migrate and the overall nature conservation potential of an area is enhanced. Conversely, if the area of a habitat is progressively eroded or fragmented by development, disturbance, pollutants etc, or if a critical hedgerow link is broken, the ecological value of the area may be reduced. It is therefore always essential to consider the wider context; there may be opportunities to restore key wildlife corridors which would provide enormous nature conservation benefits at minimal expense.

- ***Research local habitats and species*** as a fundamental pre-requisite to developing proposals for landscape change. There is a wider range of species available than ever before, but the vast majority are exotics which are not native to north west England. It is important to ensure that all proposals for new planting and habitat management use species which are native to the locality and that they group species which are associated with each other in their natural context (eg The Forestry Commission's 'New Native Woodlands' initiative). It is always advisable to seek

Photo 11. Newly Created Wetland, Ulnes, Walton.

local sources of seed or cuttings, particularly in areas with key habitats which are recognised in the UK Biodiversity Strategy.

4.5.2

Maximise Opportunities for Conserving Landscape Heritage and Enhancing Historic Landscape Character

The characteristics of all Lancashire's landscapes have been shaped by human activity and the layers of historic and cultural interest provide a valuable depth of meaning and understanding. Specific historic features (Bronze Age sites, hill forts, medieval street patterns, bridges and parish churches) are an obvious focus for attention, but the inherent scale, shape and character of field patterns, commons and woodlands is the product of local patterns of land use begun thousands of years ago. Lancashire is particularly well known for its industrial heritage and sites which demonstrate the historic evolution of the mills, terraces, canals and landscapes associated with the Industrial Revolution are of international importance.

Proposals for landscape change must take account of the full range of heritage designations, from scheduled ancient monuments and listed buildings to sites on the Lancashire Sites and Monuments Register (SMR), but it is also essential to consider the wider landscape setting of historic sites and to exploit the opportunities for archaeological recording or historic research which may arise from proposals for development.

Recommended Approach

- ***Respect built heritage, historic landscapes and archaeological sites***, as well as the region's valuable historic designed landscapes. Planning and management decisions should be supported and informed by careful research to ensure that proposals reflect their historic landscape context. Schemes for mitigation or enhancement will always be required and should be designed in response to researched evidence on the detailed layout of the site.

- ***Encourage archaeological research*** - Our knowledge of historic landscapes is in a constant state of flux; the overall picture changes in response to new evidence from specific sites and the evolution of broader theories for historic patterns of human activity and landscape change. New information constantly comes to light and opportunities for new development or landscape management are a potential catalyst for gathering new archaeological or historic evidence. Development projects require archaeological assessment , but all schemes can yield valuable information and all should be seen as an opportunity for further research.

- ***Encourage understanding, appropriate access and enjoyment of the historic landscape*** through interpretation and practical conservation projects which are designed to meet the needs of a wide range of users, including primary schools, families and those with an interest in academic research. Basic information should be available in all relevant languages and disabled access should be a consideration. Links should be sought between the historic environment and quality of life: local distinctiveness, particularly in settlement areas, is largely derived from the historic environment.

4.5.3

Manage Recreation and Access

Lancashire has a wealth of attractive natural landscapes, many of which (eg the West Pennine Moors and the open coastal marshes) are adjacent to urban areas or easily accessed from the network of motorways and local roads. It is important to ensure that access does not damage or detract from the resource the public come to enjoy. National and international policy for all forms of environmental management reflects a fundamental commitment to increased public access. This will require careful management to ensure a variety of user groups are catered for and that the landscape character and key environmental features of specific sites are conserved for the future.

Photo 12. Management of Recreation and Access at Warton Crag Quarry.

Recommended Approach

- ***Deflect pressures away from sensitive sites*** - restrict access to areas where there is a high risk of erosion/wildlife disturbance.
- ***Look for opportunities to promote informal recreation and green tourism*** through marketing, interpretation, appropriate signage and positive management for access.
- ***Give careful consideration to the design of car parks and visitor facilities.*** The size, scale, layout and choice of materials should reflect the character of the local landscape. It is particularly important to avoid a standardised, 'corporate' style and to ensure that these key centres for landscape interpretation provide a high quality model for others to follow.

4.6

Monitor Landscape Change

Monitoring rates of environmental change enables a) justification for existing and future policy, b) assessment of the practical effectiveness of existing policy and c) can be used to modify policy in the light of actual trends. The information obtained from a programme of monitoring rates and patterns of landscape change can be used for a variety of purposes, including decision making in development control, land management matters and the identification of priorities and targets for funding and enhancement. Information about local or regional landscapes also provides a vital component of national and international evidence for global environmental change. There is therefore increasing emphasis on the development of indicators for monitoring trends. It is intended

that the implementation of the *Landscape Strategy* will be assessed through a programme for monitoring landscape change.

4.6.1

Monitor Change across the Whole Study Area

The Landscape Strategy can be used as a basis for monitoring and potential indicators for monitoring landscape change are suggested for each landscape character type.

Recommended Approach

- ***Ensure the monitoring programme takes account of the different landscape character types found within the study area (with the exception of the urban landscape character types)*** - It will be necessary to use sample areas from each landscape character type; the samples should be stratified according to the landscape character areas. It is suggested that the monitoring programme is based on information from two sample areas within each landscape character area. One of these sample areas should be generated randomly, the other should be chosen to be as possible typical of the landscape character area concerned in terms of its landscape attributes and also be relatively susceptible to the potential landscape changes identified in the landscape strategies for each landscape character type.
- ***Indicators may be used to monitor both positive and negative landscape change*** - the aim should be to assess the implementation of the Strategy throughout the study area.

4.6.2

Develop Realistic Indicators from those landscape features identified as potential indicators

The programme for monitoring landscape change can use data from a range of different sources; a selection is shown in Box 4.2.

It is essential that the programme applies a systematic, robust methodology and that the same indicators can be measured in the same way, in the same place at different times.

Box 4.2 Potential Sources of Information for Monitoring Landscape Change

- **Countryside 2000** (a new satellite based data-set) - detailed land cover/field patterns/land use. May be cost implications;
- **Lancashire County Council's Aerial Survey** - land use and land cover. May be scope to compare with earlier surveys;
- **Lancashire County Council Habitat Survey** - a Phase 1 Habitat Survey for the county;
- **English Nature** - habitat surveys and records for SSSIs, nature reserves and designated areas, as well as data from a range of nature conservation initiatives;
- **DETR Derelict Land Survey** - details of derelict land reclaimed;
- **Countryside Stewardship Records** - number of applications for landscape management grants. These are held by the FRCA;
- **Forestry Commission Records** - the changing structure of Forestry Commission woodlands and the number of applications for grant aid eg for the Woodland Grant Scheme. There is also a Forestry Commission Habitat Survey;
- **Lancashire County Council SMR, Historic Landscape Characterisation and other Historic Environment Records** - and other data for historic/archaeological sites;
- **Environment Agency** - detailed records of river quality and flow;
- **Lancashire Pond Loss Survey;**
- **Records of planning applications** - held by the relevant local authorities
- **Minerals Planning Applications** - held by Lancashire County Council;
- **Biological Heritage Site database and annual review** – held by Lancashire County Council

Recommended Approach

- ***Indicators are based on key environmental features*** – which are subject to change under existing pressures. They should be meaningful to the layman and ideally should capture public attention; obscure, theoretical measures would not be appropriate.
- Data used should be readily available and measurable - if it is not available (for instance through the sources listed in Box 4.2) it should be capable of being collected easily. There may be a case for resources to be made available to collect key data, if it is critical to the study.

The potential indicators of landscape change suggested for each landscape character type provide a point of reference for monitoring change. Certain of these are developed into measurable indicators for monitoring landscape change, as set out in Box 4.3. The programme is designed to provide a general means for comparing landscape change in different parts of the study area and may be supplemented by additional surveys using the other potential indicators identified in the *Landscape Strategy*. It is also useful to set measurable targets for achieving the recommendations within the *Landscape Strategy for Lancashire*. The suggested targets for landscape change are contained in a separate supplementary report.

Box 4.3 Suggested Programme for Monitoring the Implementation of the Strategy

The following indicators should be measured in standard sample 1km x 1km squares, one identified at random, one selected deliberately, in each of the 81 Landscape Character Areas :

- field size
- area and condition of particular land cover
- area and condition of broadleaved woodland
- condition and length of field boundaries
- condition and existence of vernacular buildings
- no of successful applications for new built development

* note: some indicators can be measured across the whole study area e.g. area of broadleaved woodland and no. of successful applications for built development.

GLOSSARY

Landscape Technical Terms

with an explanation of how the terms are being used in the context of the Landscape Assessment and Strategy.

Analysis - the process of breaking the landscape down, usually in descriptive terms, into its component parts in order to understand how it is made up.

Approach - the step-wise process by which a landscape assessment is undertaken.

Assessment - an umbrella term used to encompass all the many different ways of looking at, describing, analysing and evaluating landscape.

Character - a distinct pattern or combination of elements that occurs consistently in a particular landscape.

Character Area - a unique geographic area with a consistent character and identity, which forms part of a landscape character type.

Character Type - a generic term for landscape with a consistent, homogeneous character. Landscape character types may occur in different parts of the county, but wherever they occur, they will share common combinations of geology, topography, vegetation or human influences.

Characteristic - an element that contributes to local distinctiveness (eg narrow winding lanes, vernacular building style).

Classification - a process of sorting the landscape into different types, each with a distinct, consistent and recognisable character.

Description - description of what a landscape looks like. This is usually carried out in a systematic manner, but it may also include personal reactions to the landscape.

Element - a component part of the landscape (eg hedges, roads, woods).

Feature - a prominent, eye-catching element (eg wooded hilltop, church spire).

Landcover - combinations of land use and vegetation that cover the land surface.

Landform - combinations of slope and elevation that produce the shape and form of the land surface.

Landscape - the term refers primarily to the visual appearance of the land, including its shape, form and colours. However, the landscape is not a purely visual phenomenon; its character relies on a whole range of other dimensions, including geology, topography, soils, ecology, archaeology, landscape history, land use, architecture and cultural associations.

Other Technical Terms

Ancient woodland - woodland which has had a continuous woodland cover since at least 1600AD and has only been cleared for underwood or timber production. It is an extremely valuable ecological resource, with an exceptionally high diversity of flora and fauna.

Blanket bog - upland peat bog formed under conditions of high rainfall. It drapes over the moorland plateaux and obscures most topographic features. Depending on management the vegetation can vary from wet sphagnum dominated communities to moorland grasses and ericaceous shrub communities.

Brownfield site - a development site which is re-using land previously developed.

Bryophytes - plant species belonging to the division Bryophyta, comprising mosses and liverworts.

Cairn - a mound of rough stones built as a monument or landmark - the most common examples being clearance cairns , when stones were cleared from a field in preparation for cultivation, and funerary cairns covering graves or burial chambers.

Carr woodland - marsh or fen woodland in waterlogged terrain. Characteristic trees include alders and willows.

Clough - a local north England term for a small, steep-sided valley.

Commoning - the use of common land by persons holding a 'right of common'.

Coppicing - the traditional method of woodland management in which trees are cut down to near the ground to encourage the production of long, straight shoots, which can subsequently be harvested.

Crenellated - a building with battlements or loopholes (narrow vertical slits in high walls).

Drumlin - a streamlined, elongated egg-shaped hillock of glacial drift formed under a moving glacier during the ice age. The long axis of the hillock is aligned parallel to the direction of the ice flow. Drumlins usually occur in swarms or 'fields'.

Eutrophic - the state of a water body when it has an excess of nutrients usually derived from agricultural fertilisers. The process by which a water body becomes overloaded with plant nutrients is known as eutrophication and leads to a dense plant population, the decomposition of which kills animal life by depriving it of oxygen.

Flax retting pool - a shallow pool with water input and output in which bundles of flax were placed and weighted down (with rocks) for a few weeks. The vegetable matter on the outer stems of the flax rotted down in the water to release the fibres of linen, which could then be combed out in the water and recovered into linen thread. Flax retting pools often have rocks and preserved organic matter on the bottom.

Flush - an area of soil enriched by transported materials either dissolved mineral salts or rock particles. Wet flushes are found surrounding springs and rivulets and appear as bright green, rushy areas on a hill slope.

Gill - local North England term for a rapidly flowing mountain stream.

Greenfield site - development site, usually on the fringes of a settlement, which has not previously been used for built development.

'Horsiculture' - term used to describe areas on the fringes of settlements which are dominated by horse paddocks, stable buildings and associated paraphernalia.

Hushing - a method for working quarries; the ponded waters from dammed streams were released in a torrent to scour away topsoil and loose rock and expose the high quality minerals or rocks beneath. Such areas are visible today as a confusing tangle of dry watercourses, hollows and conical spoilheaps.

Laithe house - a North England term for a dwelling which incorporates a barn under the same roof.

Limestone pavement - a glacially planed and smoothed surface of bare limestone which has subsequently been dissected by vertical joints (grykes).

Lynchets - cultivation terraces dating from the Celtic period; they are often visible in upland areas, where they were abandoned at some early date when cultivation and settlement moved down into the heavier and more rewarding soils of the valleys.

Marl pit - small pit resulting from the extraction of marl (a calcareous clay or mudstone) which has often subsequently been filled with water to form a small field pond.

Mere - a natural lake.

Mill lodge - local term for a mill pool.

Mill race or mill leat - a narrow man-made channel used to divert water to power a water-mill.

Mosslands - flat low-lying, peatlands, derived from former bogs and mires, typically drained by a network of ditches and supporting intensive agriculture. Relict areas of former natural vegetation are rare.

Open-field system - an area of arable land with common rights after harvest or while fallow. The fields date from the medieval period and are usually without internal divisions (hedges, walls or fences).

Outcrop - the emergence of a stratum, vein or rock at the surface.

Oxbow lake - a crescent-shaped lake occurring on a river floodplain. It originated as a river meander, but has since been abandoned after there has been lateral erosion at the neck of the meander and the river has changed course.

Palaeo-environmental - ancient fossil environments, which are typically analysed through techniques such as pollen analysis and radio-carbon dating.

Pollarding - a traditional woodland management practice in which the branches of a tree are cut back every few years to encourage new long, straight shoots for harvesting. Differs from coppicing because the cuts are made at sufficient distance from the ground to prevent them from being eaten by animals.

Provenanced - obtained from place of origin.

Reef knoll - a dome-like mass of limestone which has grown upwards from a reef (line of rocks in the tidal zone of a coast) in order to keep pace with the deposition of surrounding sediments. The reef knoll may be exposed by denudation and, because of its poorly developed joint system and its shape, it tends to resist erosion and to form a cone-shaped hill.

Regolith - the layer of loose, broken, rocky material covering the surface of the bedrock. It includes all types of rock waste, together with superficial deposits of alluvium, peat, wind-blown sand and glacial drift.

Remediation - process by which a contaminated or damaged site is repaired and brought back into more general use.

Riparian habitat - riverbank habitat

Semi-natural vegetation - any type of natural vegetation which has been influenced by human activities, either directly or indirectly.

Scree - an accumulation of fragmented rock waste below a cliff or rock face, formed as a result of weathering. The rock waste typically forms a fan shaped scree slope with a concave slope. It is devoid of vegetation.

Tarn - local name for a small upland lake.

Vernacular - buildings constructed in the local style, from local materials. Concerned with ordinary rather than monumental buildings.

Veteran tree - a tree which is of great age for its species and is of interest biologically, culturally or aesthetically.

Abbreviations

AONB - Area of Outstanding Natural Beauty

BAP - Biodiversity Action Plan

BNFL - British Nuclear Fuels Ltd.

CCA - Countryside Character Area (refers to the broad landscape character areas described on the Countryside Agency's Character Map of England)

DETR - Department of the Environment, Transport and the Regions

EIA - Environmental Impact Assessment

EU - European Union

FRCA - Farming and Rural Conservation Agency

LNR - Local Nature Reserve

MAFF - Ministry of Agriculture, Fisheries and Food

NGO - Non-Governmental Organisations

NNR - National Nature Reserve

PPG - Planning Policy Guidance (national)

RPG - Regional Planning Guidance

RSPB - Royal Society for the Protection of Birds

SMR - Sites and Monuments Record

SSSI - Site of Special Scientific Interest

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