Northern Ireland Landscape Character Assessment 2000

An Appreciation and Analysis of the Landscapes of the Region

by

Environmental Resources Management

Minister's Foreword

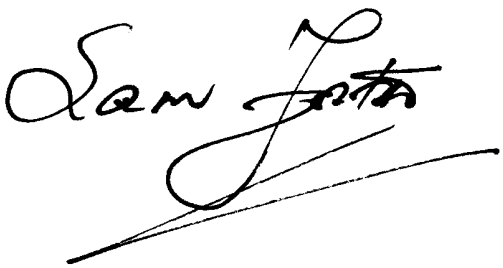
Northern Ireland's green countryside is a living library of the husbandry and changes fashioned on the natural landscape by successive generations of its people as they went about their daily lives. Whether they were farmers, in business or involved in managing great estates, our forefathers acted with confidence and continuity of purpose to create places of special identity. The tranquil beauty of the resulting landscapes is celebrated in story and song, whilst visitors from around the world appreciate the warmth of our people.

Despite its small size, Northern Ireland has a remarkable diversity of landscapes. Some are ordinary and some outstanding, but all are special to those who live here. Our landscapes are an invaluable asset, but are vulnerable to ill-considered change. Change is inevitable and its pace is now more rapid than ever. This makes it essential that proper recognition is given to protecting and reinforcing the special identity of local landscapes, so helping to ensure that any change is for the better.

The Northern Ireland Landscape Character Assessment project was a bold initiative to identify the diversity of local landscape character, to encourage recognition of the key features which make each area special and to promote discussion on their future. I am delighted that the information contained in the series of Research Papers already available for each local government area has now been complemented by this handsome volume, published by my Department. Not only does this work do full justice to the high quality and individuality of our landscapes, it will also serve as an valuable resource to those involved in the management and development of the countryside.

The guidance set out in this Report emphasises the importance of environmental sustainability - achieving the right combination of land uses, be they for production, development or conservation, not only for today but for future generations. By providing clear information on the distinctive features of our landscapes, I believe this publication to be an important contribution towards achieving that aim.

It is particularly fitting that the results of this study should be published at the turn of the Millennium. I commend the use of this Report to all those interested or engaged in the study and management of the landscapes of Northern Ireland.



Sam Foster
Minister for the Environment

Explanatory Note

The Northern Ireland Landscape Character Assessment

The Department of the Environment in Northern Ireland aims to improve the quality of life for the people of the region through the promotion of sustainable development principles. It seeks to integrate the development needs of the region with the protection of the environment, and to conserve and enhance both the natural and built environments for the benefit of present and future generations. This publication seeks to further these aims and objectives.

In 1997 Environment and Heritage Service (EHS), supported by the Planning Service, commissioned the consultancy firm Environmental Resources Management (ERM) to prepare a landscape character survey and analysis for the whole of Northern Ireland. The aim was to ensure that landscape issues would, in future, receive due attention in land-use planning, land management, and environmental conservation and enhancement at both a regional and local level.

The principal requirements of the study were twofold. The first was to prepare a series of Landscape Character Assessment Reports (1), one for each of Northern Ireland's 26 local government districts. The second was to prepare this Regional Report covering the whole of Northern Ireland. This Report addresses landscape character, diversity, key components and forces for change, and includes strategic advice from the consultancy on how to tackle the effects of development and land use change both in the countryside and in the urban fringe.

By identifying the characteristics of the 130 landscape character areas and the threats to their individuality, the Assessment offers resource material for the development of tailored common policies and actions on landscape issues. It could become a tool both for creative landscape conservation and enhancement and also in identifying opportunities for bold and attractive new development. Its findings should feed into high quality design that reflects, builds upon and enhances Northern Ireland's particularly fine landscape inheritance.

In publishing Northern Ireland Landscape Character Assessment 2000, we have several important objectives:

- The publication forms an important record and celebration of the character, variety and quality of our landscapes at the turn of the Millennium.
- It provides a valuable insight into the forces, both natural and human, which have moulded the landscape into its present condition.
- The study pinpoints the distinctive elements of each local landscape, assisting land managers and developers alike to tailor and co-ordinate their activities so that they are in keeping with the scale and distinctive qualities of the landscape within which they are operating.
- It identifies management practices, landscape features and development trends which threaten or already detract from our landscapes, so alerting those both inside and outside government who influence land-use to the need for vigilance, possible policy change and, in some cases, remedial action.

Explanatory Note

- It provides a valuable resource and reference work to those interested in our countryside and landscape and may be of assistance to those seeking to provide a positive influence on countryside policies and practices.

- The study also provides developers and their professional advisors with guidance on site selection and design so that new development can blend with and even enhance the local landscape character.

- Finally, it is hoped that general readers will appreciate learning about the elements which make up their local landscape, will recognise those features as they go about their daily business and will be motivated to retain and celebrate the distinctiveness of their area of Northern Ireland.

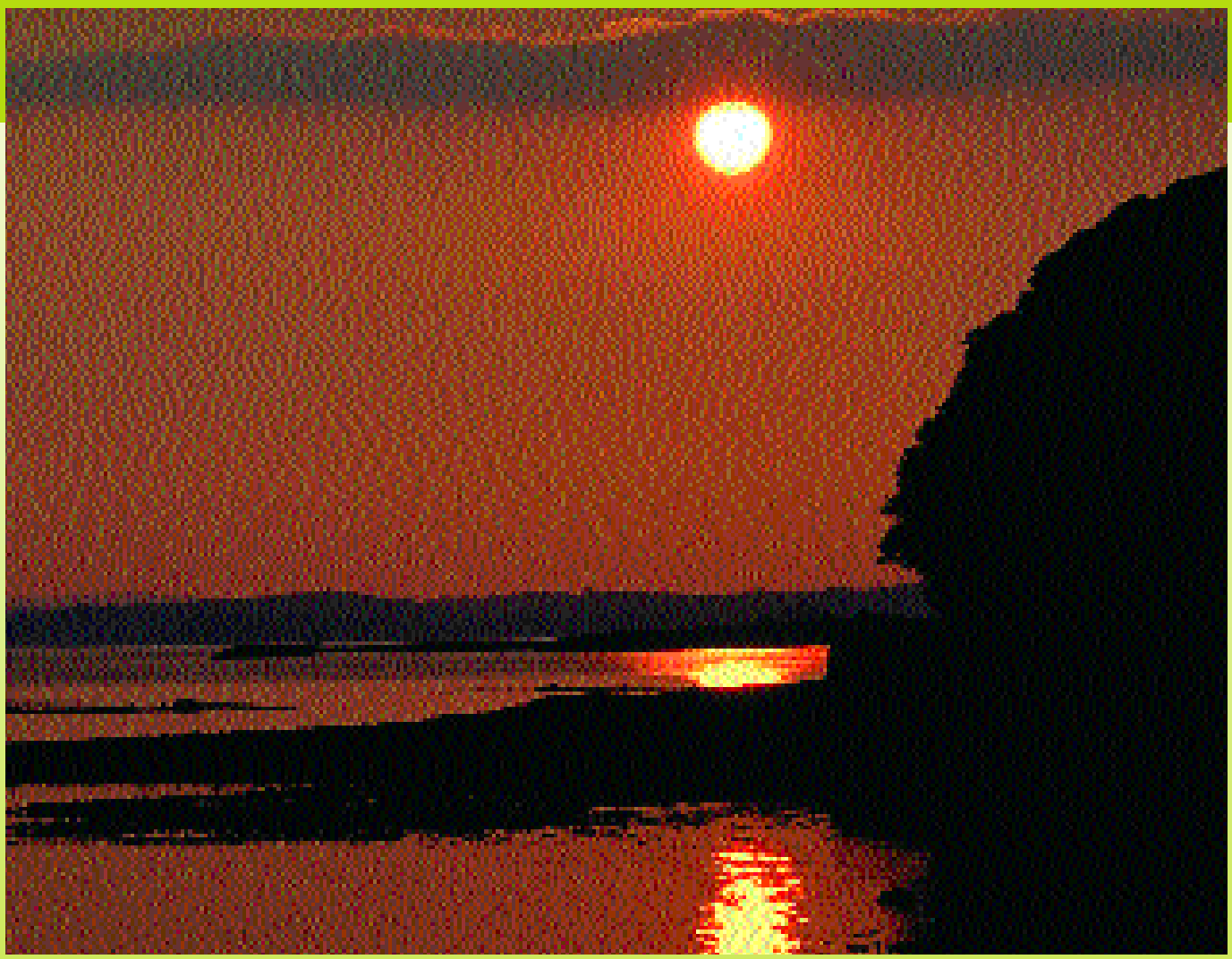
The opinions and recommendations in this report are those of Environmental Resources Management. The report does not represent the formal policy of the Department. In publishing the report, however, we recognise that it contains valuable ideas, suggestions and advice which have the potential to further the aims of our two services and of the Department as a whole.

ENVIRONMENT AND HERITAGE SERVICE

the Planning Service

Northern Ireland

Landscape Character Assessment



Northern Ireland's Landscapes:A Unique Resource

Northern Ireland's landscapes are among the region's finest environmental assets - a vital resource valued for their scenic, ecological and historical qualities, as well as for their economic potential for agriculture, forestry, minerals and tourism.

The Northern Ireland Landscape Character Assessment provides, for the first time, a full and detailed record of all of Northern Ireland's landscapes. Using accepted, systematic methods of landscape character assessment (2), the countryside has been subdivided into 130 different landscape character areas, each with a distinctive character, based upon local patterns of geology, land form, land use, cultural and ecological features. For each landscape character area, a description of key characteristics and an analysis of landscape condition and sensitivity to change have been prepared. This material is presented in the Environment and Heritage Service Landscape Character Assessment Research Reports for the local government districts(1).

The landscape patterns that we see today have evolved gradually over thousands of years, through both natural and human forces. This report begins, in Section 1, by describing the principal forces that have shaped the landscape in Northern Ireland. Important and distinctive geological, cultural and habitat features are highlighted, and their distribution is described.

This sets the scene for Section 2, which reviews landscape character and quality across the region, drawing attention to those characteristics and features that are particularly distinctive, rare or special, and should be celebrated as part of Northern Ireland's natural and cultural heritage.

Such characteristics and features may be found even among the 'ordinary landscapes' of Northern Ireland; and an important aspect of the new approach to landscape is to recognise that all landscapes matter.

However there are special concentrations of landscape assets that are of Northern Ireland-wide or even international importance. Some areas have already been recognised by their designation as Areas of Outstanding Natural Beauty (AONBs) for reasons of scenic quality, unspoilt character, sense of place, conservation interest, cultural and recreational value. This report also defines Areas of Scenic Quality which represent landscapes that are considered by ERM to be important at a regional level within Northern Ireland.

Accommodating Landscape Change

Today, landscape change continues to be necessary, but it should not be allowed to erode landscape patterns or local identity. By recognising landscape character, new land uses or development can often be accommodated successfully. Indeed change may provide opportunities to reinforce or enhance the landscape for the benefit of future generations.

Section 3 of this report reviews the scale, pace and landscape implications of development and land use change across Northern Ireland. It presents broad guidance for

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accommodating different forms of change within the landscape. Reference is also made to the Landscape Character Assessment Research Reports for each of the 26 local government districts. As well as describing landscape character and sensitivity, these reports review forces for change at a local level. They present specific principles for landscape management and principles for accommodating new development, in recognition of the fact that each landscape requires a tailored approach which reflects and responds to its particular character. They also identify and map particular parts of the landscape that fulfil important functions, for instance areas of scenic quality, distinctive landscape settings to settlements, buffer zones that separate adjacent settlements, ridges that are prominent visually, key views, landmarks and locally degraded landscapes in need of enhancement.

The key to accommodating landscape change successfully is: to understand landscape scale and character; to appreciate geology, habitats, field and settlement patterns; and to respect local materials and building styles.

Towards a Landscape Strategy for Northern Ireland

Section 4 of this report outlines the key issues that face Northern Ireland's landscapes today, and suggests a strategic approach to their conservation and enhancement. The first steps are to recognise the value of 'ordinary landscapes', and to understand the evolving patterns of land use and landscape character. Among the key issues to be addressed are the impact of new buildings in the countryside, the loss of distinctive landscape settings to settlements, the erosion of traditional rural landscape patterns and features, and the visual effects of major infrastructure developments. There are also more subtle, insidious threats, such as neglect of public open spaces, damage to the settings of historic features, and loss of areas of semi-natural habitat. Priority actions are put forward for tackling each of these issues.

The final section of this report, Section 5, includes a series of maps and figures illustrating the key forces which have influenced the evolving patterns and diversity of the landscapes of Northern Ireland.

ERM

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SHAPING THE LANDSCAPE

The landscapes that we know today are the culmination of millions of years of rock formation, alteration and erosion. Moulded by ice, rivers and the sea the underlying skeleton of rock is clothed by a mantle of green vegetation which has been continually cleared, farmed and settled by man. People are by far the most recent influence in this vast sequence of geological time, but they have had a great impact on the visual appearance of Northern Ireland's landscapes.

Over the years, patterns of ownership and activity have evolved and farming practices and settlement patterns have been adapted to suit local conditions. They usually reflect basic contrasts in topography, climate and soils and remain closely related to underlying variations in geology. Therefore to understand the distinctive landscape patterns we see today we must examine how they have evolved.

1.1 THE GEOLOGICAL FOUNDATION

The story of Northern Ireland's rocks is one of a journey through space and time; our seemingly unchanging earth has altered its appearance as land masses have come and gone and physically moved their position. What is now the solid land forming Northern Ireland tells a complex history as this part of the earth has moved through many different climatic zones, sometimes occurring as dry land and at other times submerged below past oceans.

Valley in Sperrin Mountains

Our geological history is summarised in Section 5, alongside Solid and Drift Geology maps.

The oldest and most widespread rocks of Northern Ireland form the uplands of the Sperrins and north-east Antrim. These hills are the remains of an ancient mountain chain, once as large and as high as the Himalayas are today. Formed from sediments laid down in basins on the American side of a long disappeared ocean, they show that not only did the north of Ireland once form part of that continent, but also that tremendous collisions have occurred, producing mountains out of materials formed on the ocean floors.

Other sediments which accumulated on that ancient ocean floor have been preserved as the extensive series of sandstone and shale, forming the lowlands of Down and Armagh. Once again, evidence contained in these rocks shows that they actually represent sections of the seabed which originated from this lost

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ocean. During a second phase of mountain building, granitic rocks were emplaced below the earth's surface. Erosion has exposed these and evidence can be seen today as the uplands which include Slieve Croob. Slieve Gallion also mainly dates from this period.

Limestone Fissures, Fermanagh (RT)

Desert conditions prevailed during the Devonian period, with Northern Ireland once again present as dry land. The erosion of a now vanished mountain chain and volcanoes yielded sediments which in turn produced new rocks - the 'pudding stone' conglomerates of Cushendun and red sandstone forming low ground to the north of the Clogher Valley.

Returning marine conditions during the Carboniferous resulted in the development of extensive limestones, some of which bear evidence of ancient reefs formed in tropical coral-fringed oceans. The Marlbank area of Fermanagh gives testament to the great thickness which these reefs achieved. Some of the limestones in Fermanagh have subsequently been partially dissolved by the action of rainwater. Cave systems have developed, with associated surface features including sinking streams and dry valleys. Some of the finest examples are to be found in the area of the Marble Arch show caves.

Progressive shallowing of the oceans occurred later in the Carboniferous, until eventually extensive river deltas dominated the area. Great thicknesses of these sands and muds are preserved, forming much of the upland blocks of Slieve Beagh and west Fermanagh. Accumulated organic remains from these times have also been preserved in places and form the small coalfields of Ballycastle and Coalisland.

During the next geological period (the Triassic) a notable climatic change occurred. Now positioned approximately where the Sahara is today, arid desert conditions prevailed throughout the region. Occasional flood events deposited sand in shallow lakes, surrounded by dunes, producing the sandstone now seen at Scrabo and within the Lagan Valley.

Marble Arch Caves, Fermanagh (RT)

There was a gradual return to shallow marine basins which were susceptible to drying out under the intense evaporation. This process resulted in great thicknesses of mudstones in places sandwiching massive beds of salt, the residue left as seawater evaporated in the heat. While these soft rocks generally do not make a dramatic effect on landscape, exploitation, continuing today, has left evidence of a salt mining industry in the Carrickfergus area.

Rotational landslips near Larne

Seas deepened during the Jurassic period, their legacy being the grey mudstone and limestone now found mainly around the Antrim coast. They can yield interesting fossils but their most visible contribution has been in promoting the instability of overlying rocks. Landslips of various types, both active and stable, are well seen on the Antrim coast road at Minnis, north of Ballygally, and Garron respectively.

Marine conditions were maintained through much of the succeeding Cretaceous. Initially sandstones formed but these were overlain by the visually striking white limestones. Formed from microscopic remains of marine organisms, they record warm, clear sea conditions. The hardness of this chalk has made it resilient to erosion such that our white cliffs in Antrim, unlike those at Dover which are of the same geological age, are standing fast against the action of the sea.

By the end of the Cretaceous, a land mass broadly recognisable as Ireland had continued its northward movement to a position similar to southern France today. Weathering of the limestone surface created a karst landscape with sinkholes and caves present. These features are visible today at the top of much of the chalk.

The next major geological event was literally explosive. The opening up of the north Atlantic, a process continuing today, was accompanied by widespread volcanic activity. Scenes similar to those present today in Iceland produced a great basalt plateau, the eroded remains of which dominate Antrim and parts of Londonderry. Successive lava flows covered the land, sometimes producing dramatic landscapes such as the Giant's Causeway, while some molten bodies failed to reach the surface but have been exposed by subsequent erosion. These have often resulted in striking features and include Fair Head and Ramore Head on the north coast. Elsewhere combinations of surface volcanic action and intruded molten magma resulted in the formation of the Slieve Gullion complex with its remarkable 'Ring', while Tardree Hill in Antrim is the result of surface volcanic activity alone. The much famed Mountains of Mourne were also formed at this time as molten granite was emplaced just below the land surface and now exposed by erosion.
This widespread volcanic activity was accompanied and followed

Successive lava flows, North Antrim

by frequent shifts in the relative levels of the land. This faulting, often reactivating much older crustal weaknesses, has produced a range of features. For instance, large scale faulting over the central area of Northern Ireland resulted in a basin, now occupied by Lough Neagh, the largest body of freshwater in the United Kingdom. Elsewhere, faulting has often brought rocks of different ages to similar levels so that cliff scenery on the north coast shows dramatic lateral transitions from basalt to chalk.

Ring of Gullion (RT)

Slieve Binnian, Mournes (RT)

The Pleistocene brought a major change in climate. Although thought of as the Ice Age, ice was in fact only present for relatively short periods of time, albeit still amounting to many thousands of years. However, its impact on landscape cannot be over-estimated. Ice masses thousands of metres thick moved over the land, eroding and re-depositing vast amounts of material. Ice action in many lowland areas formed drumlin belts, particularly in Down and Armagh, while many upland areas were generally smoothed giving the characteristic outline of much of the Mourne Mountains.

As ice melted, a range of landforms developed including moraines marking the positions where glaciers halted on their retreat, eskers formed by rivers within the ice and deltas where rivers poured into enormous ice dammed lakes. Such features are well seen between Cookstown and Omagh and also in the Dungiven area.

While the major determinant of landscape character since the Ice Age has been the impact of human activities, natural processes are ongoing. Changes in relative sea level have formed the raised beach on which the Antrim coast road has been built, with isolated caves and intriguing stranded coastal landforms near Ballintoy Harbour. The most notable developments have been the growth of coastal dune complexes, as at Magilligan and Murlough and initiation and expansion of lowland and upland peat bogs which can be seen at Garry Bog and Garron Plateau.

1.2 CLEARING, FARMING AND SETTLING THE LAND

People have hunted and gathered, settled and farmed this land for some 10,000 years, with each generation leaving an imprint on the land in the form of farms and field enclosures, settlements and boundaries, forts and castles, places for worship and burial, and communication routes between all these places. Many archaeological sites and monuments are distinctive in form and dateable, but some cannot be dated because each generation is likely to disturb or abandon features in the inherited landscape. In this Report the distribution and apparent age of identified sites is illustrated in Section 5.

The first people to settle in Ireland arrived by boat some 9,000 years ago. They came to a post-glacial landscape covered by light woodland interspersed with stretches of growing bog. As hunter-gatherers moving about in search of food, they were attracted to coastal areas where flint deposits on the raised beaches were a source of material for tools and where a great variety of food sources could be found. They moved inland along the natural routeways provided by river valleys and the trackways of the wild animals they hunted. Their homes, usually quickly built of erodable materials such as mud and wood and perhaps only used for a single season, are not easily recognised today.

Giant's Ring, near Belfast

Some 6,000 years ago evidence indicates that the first farming communities began to clear and cultivate the tree-covered land. The valley floors were thickly wooded and the soils too heavy to cultivate with primitive tools so they gravitated towards the upper valleys where the drier sand and gravel and limestone soils could most easily be cleared. People farmed the land until the nutrients in the soils were depleted, before moving on to newly-cleared land, leaving the woodland to regenerate over previously cultivated areas.

In the past, much of our evidence for the way of life in Neolithic times came from studying the 'way of death'. The megalithic tomb, built of large slabs, usually massive and durable, and architectural in quality is the most characteristic monument of this period and the majority of tomb enclosures in Ireland are found in the North. Very occasionally, decayed traces of rectangular, wooden, Neolithic houses have been found, but too few are known yet for us to generalise about how settlement sites were selected.

Sometime around 2500 BC, techniques of bronze-working were introduced to Ireland, no doubt by prospectors and traders seeking to exploit and export Irish copper ores. Bronze Age people continued the woodland clearance begun

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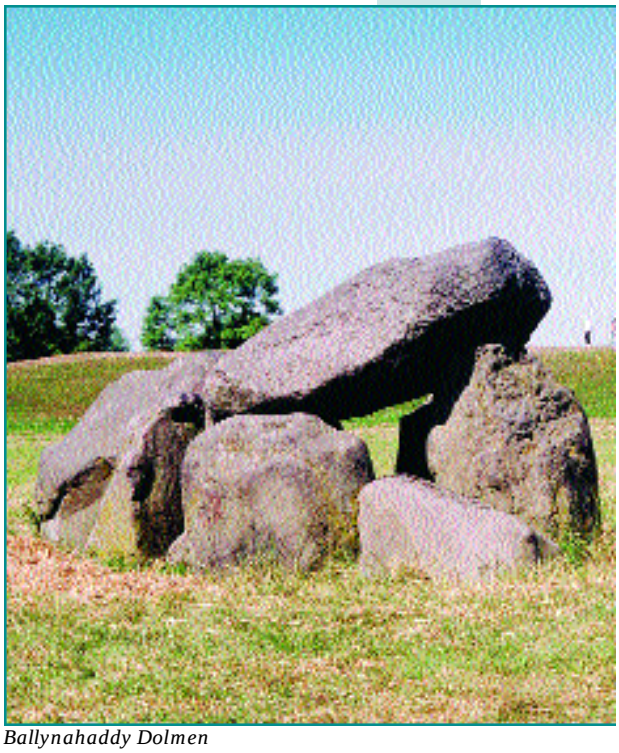
earlier and as metal tools became available could clear larger trees and work heavier soils. The increasing range of stone and metal objects including jewellery and weapons seems to indicate the gradual accumulation of wealth and the development of a more hierarchical society. Bronze Age burial and ritual monuments such as standing stones, stone circles and cairns are visible, although not numerous, throughout the countryside whilst traces of other structures, both ritual and associated with occupation, have been found after soil stripping in a number of locations.



Ballynahaddy Dolmen

Working the land became easier when iron became available in about 200 BC, allowing more land to be brought into cultivation. The development of a hierarchical social structure continued, emerging as a tribal institution centred on local chiefdoms. Hillforts, often originating in the Bronze Age, were strengthened now as tribal centres providing an administrative focus, and shelter in times of upheaval, for inhabitants from a wide area.

Devenish Island (RT)

The introduction of Christianity added a new dimension to society, as clerics and ecclesiastical settlements became part of local communities. St Patrick's missionary work was extremely influential, though he was not responsible for founding all the churches attributed to him, and early ecclesiastical sites dating from the 6th century are found throughout Ireland. The early church buildings were in timber with earthwork enclosures so the dry-stone built remains of the early Christian monastery of Nendrum, on Mahee Island County Down are a rare and quite well preserved example of a monastery of this period. Some stone churches may have been built at important sites from the 10th-11th centuries but most are 12th century or later in date. In the 11th to 12th centuries, church re-organisation led to the establishment of a parish system and building of parish churches. Some of them were on early sites, and a number of modern churches occupy sites which first became church lands during this time. They represent a direct and prominent link with the distant past.

The raths or 'forts', which also date from this period, are the most numerous archaeological monuments in our countryside. These distinctive, circular earthwork enclosures are the remains of defensive residences belonging to families of some social status within an agriculturally based economy. Those built of stone in rocky areas are known as 'cashels'. A few forts, such as Lisnagade and Lisnavaragh, near Scarva, which have more than one enclosing bank- and- ditch, were the highest status dwelling places. Most raths lie on land which is still farmed, although many have been levelled or modified by farming, particularly during the 18th to 19th century pre-Famine period, when the population was at its peak.

Many townland and other place-names are found in early historical documents and some townland boundaries still reflect patterns of landholdings in the distant past. New boundaries have been introduced and others have been changed but the townland unit remains part of community life today. Townland boundaries represent patterns of land ownership and some may date from the early Christian period. The boundaries consist of an earthbank and ditch with a stone wall or hedgerow and are particularly prominent in areas of marginal upland pasture, such as on the fringes of the Sperrins. Here they form straight lines stretching high up onto the moorland peaks, often well above the current limit of cultivation.

Rath and changing field patterns, Tullaghoge

1.3 CONFLICT, COLONISATION AND INDUSTRIAL EXPANSION

The Anglo-Norman colonisation in the second half of the twelfth century brought more sophisticated building methods. Stone was increasingly used for a range of civic and monastic buildings, including the monastery at Grey Abbey and the Norman castles of Carrickfergus, Dundrum and Greencastle. This was a period of feudalism which relied on individual wealth created from the land so it is no surprise that the distribution of Anglo-Norman sites relates closely to the occurrence of fertile farmland.

The first town to be captured by the Norman settlers was Downpatrick in 1177 and it became a base for their operations throughout East Ulster on some of the best agricultural land in Northern Ireland. Units of farmland were given to supporters who had an allegiance to the lord, and to borough communities or burgesses which had their own court and other privileges. Mottes marked the boundaries of the Norman land holdings and were placed at strategic sites throughout the region.
The Anglo-Normans established a number of borough towns, including

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Carrickfergus, Newry and Holywood, which rapidly developed as regional trading centres with links across the Irish Sea to Britain and Europe.

During the 14th century, the impact of the Black Death and a series of minor civil wars contributed to a resurgence of the Irish landlords and a general breakdown of social order which led, at the end of the 16th century, to full scale war between the Irish lords and the English Royal Government. This culminated, in 1603, in the Scots settlers taking control of Ulster 'by agreement' with the Irish lord, Con O'Neill of Castlereagh. In 1607, following the 'Flight of the Earls' their lands were confiscated by the Crown, to be 'planted', that is subdivided and granted to new owners. The new Scottish and English landowners were responsible for building castles and defended houses, setting up new settlements and enclosing land. Their actions brought significant changes to the Irish landscape.

Dundermot Motte

In some towns, the Plantation built upon the medieval pattern of settlement, such as at Carrickfergus, Downpatrick and Coleraine. It also increased the capacity of many small villages, particularly those at strategic bridging points or road junctions. New towns, such as Cookstown, Irvinestown and Castlewellan were also deliberately planted; they are distinguished by their geometric layouts, broad streets and central diamond-shaped market places.

The new landowners were responsible not only for new settlements, but also for the building of roads and bridges, the organisation of commercial markets and the establishment of shops and local industries. They laid out a regular pattern of small enclosed fields for arable farming. There are strong contrasts between the scattered farmsteads and small, irregular fields of the earlier farms, and the ordered large fields, plantation woodlands and shelterbelts which stem from the 17th century enclosures.

Barnett's Park, Lagan Valley

The new enterprises encouraged by the Plantation demanded good communications and the 18th century brought an ambitious canal building programme, with new canal systems creating navigable links along the Newry, Foyle and Lagan Rivers. The mining of iron ore in the Glenravel valley in Antrim and coal at Ballycastle and Coalisland contributed to the economic expansion. The linen industry grew rapidly and many rivers became the focus for mills and bleachworks. Processing was concentrated in the regional towns,

but cottage industries, based on wool and flax, supplemented agricultural incomes and small flax mills were scattered along steep river valleys throughout the countryside. These industries were dependant on turf for fuel and were very demanding.

The wealth generated by this phase of economic growth is reflected in the large country houses and wooded designed parklands and demesnes found throughout Northern Ireland. They are carefully sited in some of the most attractive natural landscape settings.

Thread Mill, Hilden, Lisburn

Between 1750 and 1820, the population increased dramatically, forcing an expansion of farmland and the establishment of new fields in upland areas, far above the present limits of cultivation. The struggle for fuel in this harsh economic climate led to large-scale peat-cutting, the destruction of hedgerows and the felling of trees for fuel, leaving a bare landscape dotted with cabins and potato ridges.

Potato blight reached Ireland in 1845, bringing a disastrous period of population decline through famine and emigration. After the famine, there was a need to amalgamate the many tiny landholdings into larger, economically viable units. Many remaining woodlands were cut for fuel or sold off to sawmills. Landlords actively encouraged their tenants to emigrate so as to reduce the local rates for famine relief. Gradually, from 1850 onwards, the economy began to pick up, led by a flourishing export trade with England and the communications boom brought by the railways.

Abandoned farm

In 1870 and 1881, the British Government introduced land reforms which established a partnership between landlord and tenant. Tenants were entitled to fair rents, a fixed tenure, compensation for any improvements they had made and a loan from the State to purchase their holdings. However, the land reforms encouraged tenants to treat their estates as a short term investment rather than something to be husbanded for future generations. Hence in 1903, a final Land Act was passed which enabled entire estates to be purchased on terms which favoured the small investor. These changes in the tenure structure established the foundation for the present day rural landscape of small, owner-occupied farms.

1.4 THE LANDSCAPE TODAY

Kilnasaggart Stone, South Armagh

The present landscape is thus a product of changing patterns of land ownership and management. Over the centuries, human activity has concentrated in specific types of landscape. While the Neolithic farmers favoured the light, easily cleared soils on the upper slopes, the 18th century mill owners relied on fast-flowing rivers and the modern commuter places a premium on road links. Advances in communication, information technology and choice of quality living environments may facilitate the retention of Northern Ireland's existing dispersed settlement patterns in the 21st century. With each shift in the regional economy, traces of previous activity have been left behind. Much has been erased by subsequent settlement and land use but patterns of past activity have frequently formed a framework for future development. Today it is possible to 'read' these layers of history in the modern landscape: it is a living library containing ancient landscape patterns in which archaeological sites and historic settlements are the most distinctive features. It provides a fascinating glimpse into the past, as well as a framework for future change.

For millions of years the landscape was formed by natural processes. In the past few thousands of years, man has worked and re-worked the land, altering its natural cover of vegetation and creating distinctive patterns of land use. At the beginning of the millennium, Northern Ireland has a particularly distinctive range of landscape patterns and natural habitats.

The countryside retains a remarkably low proportion of woodland cover, but a wonderful range of wetland, bog and semi-improved grassland vegetation which harbours some distinctive and valuable plant communities. Ancient habitats, and in particular those managed in traditional, sustainable ways, remain exceptionally rich in wildlife diversity and are valuable feeding and breeding grounds for birds, butterflies etc. The limestone meadows of the Fermanagh escarpments, the ancient woodlands clinging to the slopes of the Antrim Glens and the lowland raised bogs and wet grasslands in the many inter-drumlin hollows are important examples. But many remnant pieces of land, which are simply marginal to current land use requirements, are also ecologically valuable. Traditional landscape elements, such as stone walls, hedges gateposts, farm buildings, canals and old railway lines are also familiar yet distinctive features of the rural landscape. They are becoming rarer and more valuable as they are progressively fragmented by modern agriculture, infrastructure and built development, yet all contribute to the rich diversity and unique character of Northern Ireland's landscape heritage.

Water Avens, Fermanagh (RT)

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Northern Ireland's Distinctive Landscapes

2

Northern Ireland

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NORTHERN IRELAND'S DISTINCTIVE LANDSCAPES

The small emerald green fields of Northern Ireland are famed worldwide and represent a 'picture' of home to the many who have emigrated far and wide overseas. Today, coming in to land at any of the regional airports those small fields present a strikingly distinctive and dominant scene. Often they are dotted with lakes but are replaced upslope by a subtle geometry of stone walls, petering out to a rough-textured natural mosaic of grass, heather and blanket bog. These are just rapid glimpses of the variations in landscape character which we often take for granted.

This chapter explores the stunning range of landscape character areas which together give Northern Ireland its special distinctive identity. It is a region of dramatic contrasts and subtle transitions. The inherent diversity of the underlying rocks, landforms and soils has been augmented by centuries of settlement and land management, resulting in an amazing variety of landscape patterns in a relatively small area.

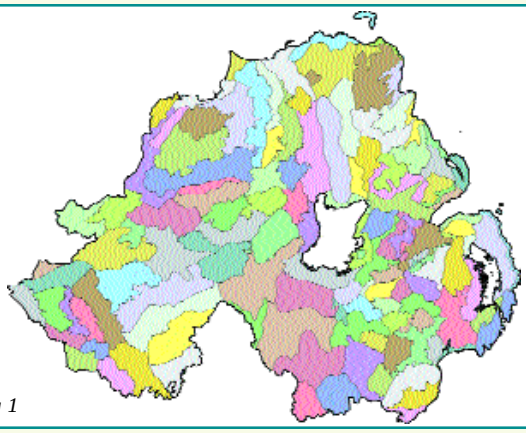


Fig 1

The landscape character assessment identified no less than 130 different landscape character areas, as indicated in Fig 1. They highlight the variations in landscape character across Northern Ireland. Detailed descriptions of regional landscapes and the individual landscape character areas are provided in the Environment & Heritage Service's series of Landscape Character Assessment Reports, which cover each of Northern Ireland's 26 local government districts (1). This chapter seeks to provide a more general overview. Region by region, it describes the broad differences in landscape character and highlights the special qualities and features which make each area memorable.

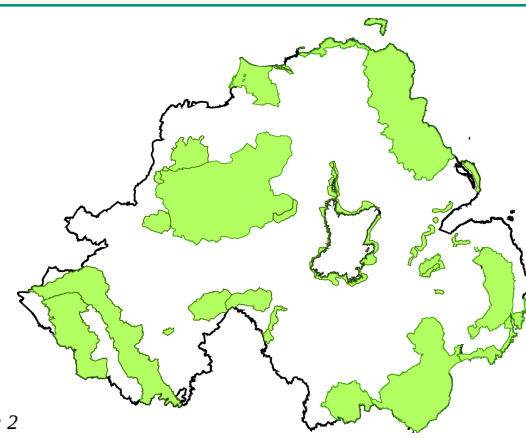


Fig 2

Northern Ireland's most spectacular landscapes, the Areas of Outstanding Natural Beauty (AONBs) are already well known, but the landscape assessment has identified an additional tier in the hierarchy of special landscapes, Areas of Scenic Quality. The areas covered by AONBs and Areas of Scenic Quality are indicated in Fig 2. These are important landscapes, recognised for their scenic qualities, as well as for their nature conservation and heritage value.

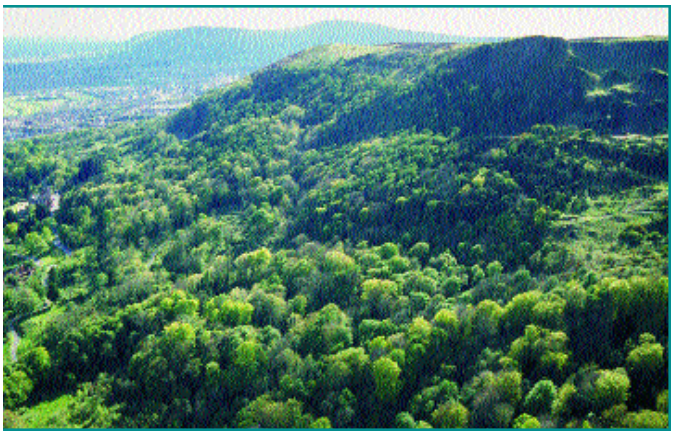
However Northern Ireland is blessed with an incredible variety of different landscapes which complement and contrast, each forming the setting for another. All are important and attractive in their own way and all contribute to the uniquely distinctive and scenic landscape which is Northern Ireland.

2.1 THE ANTRIM PLATEAU

This massive, high tabular basalt plateau extends from the cliffs of Binevenagh to Belfast. Over the years, it has been eroded to form a variety of upland landscapes, interspersed with river valleys, bogs, and deep, plunging glens. The plateau is bordered on all sides by dramatic coastal scenery, from the rocky cliffs at Portrush to the glens and headlands near Glenarm and the basalt ledges on the seaward cliffs of Islandmagee.

Belfast City

The basalt cliffs (LCA 112) overlooking Belfast are a striking landmark at the southern limit of the plateau. The black, rocky crags have a wild, brutal, untamed character which contrasts with the familiar bustle of the city below. They continue just inland from the shoreline of Belfast Lough, becoming a lower and more accessible backdrop to Carrickfergus (LCA 130) before jutting out to form the first of many cliffed headlands at Whitehead.



Basalt escarpment, Cavehill

Inland, the Belfast Hills are an open, windswept landscape of bog and grassland, with a broken grid of stone walls leading up from the fertile farmland on the lower slopes. Formal lines of beech trees along the entrance roads to established farmsteads stand out as impressive and surprising features. To the north, the Six Mile Water flows within a verdant, gently undulating valley (LCA 114). This is a major communication route but parts of the valley retain a secluded character. The steeper slopes of Tardree Mountain, Big Collin and Douglas Top form a consistent and striking backdrop to the M2, and mark the edge of the high plateau.

The character of the high plateau reflects the structure of the underlying bedrock and the ongoing actions of wind and water which are gradually weathering and shaping the lava cap. Towards Larne, the backbone of the land is provided by a series of long north-south ridges and trough-like valleys, but erosion and slumping has superimposed a complex relief of low hills and shallow hollows on this skeletal structure (LCA 127). The dramatic rounded cliffs of Sallagh Braes, the result of a massive landslip, are a spectacular reminder of the dynamic character of the earth's surface.

The eastern fringes of the plateau are marked by a bold escarpment, which forms a series of striking headlands with precipitous cliffs along the coastal road. The sedimentary chalks, sandstones and clays, which lie beneath the lava crust, are often exposed in the coastal cliffs, providing local names such as Red Bay and the White Lady. The headlands shelter a sequence of stunning, hidden bays, each with its own distinctive character. The small sandy bays are the entrance to the dramatic nine 'Glens of Antrim' (LCAs 125, 123, 121, 119 and 117). These steep-sided U-shaped glens were formed by the scouring action of glaciers, which remained in these upland valleys long after the main ice sheets had melted away. The ice has over-deepened the valleys, creating deep troughs within the upland plateau and landscapes which form a stunning contrast to the high tops.

Cushendun Bay, East Antrim Coast

The striking field patterns within the glens have evolved to make the most of the variations in soil, aspect and exposure on the steep slopes. The contrast between the neat, enclosed pastures and the open, untamed moorland reinforces the dramatic shape of the land and is a memorable feature of the glen landscapes. Each glen has its own local identity which has evolved over years of relative isolation - until the 19th century, their principal access was from the sea. Historic field patterns, small estates, clustered villages, hillside farmsteads, woodlands, streams and waterfalls combine to form some of Northern Ireland's most distinctive glacial scenery.

Between the glens, the undulating surface of the high plateau is a wilderness of blanket bog, hump-backed ridges and isolated peaks. The uplands were traditionally used for peat cutting and rough sheep grazing and the geometric traces of hand-cut turf remain visible today. Acres of bog are now planted with conifers which form a consistent, dark backdrop to the rough-textured pastures of the open slopes. Ballypatrick Forest, on the broad slopes of the upland separating Glendun from Glenshesk (LCA 118) is the most extensive conifer plantation on the eastern basalt plateau.

High Antrim plateau landscape

The landform of the plateau becomes progressively shallower to the west where it is broken by the broader valleys of the Glenwhirry and Braid Rivers. The gentle,

sweeping slopes and neat low stone walls in this area allow the volcanic plug of Slemish Mountain to stand out as a landmark. It is visible for miles around and acts as a prominent reminder of the volcanic origins of the plateau.

Slemish, near Ballymena

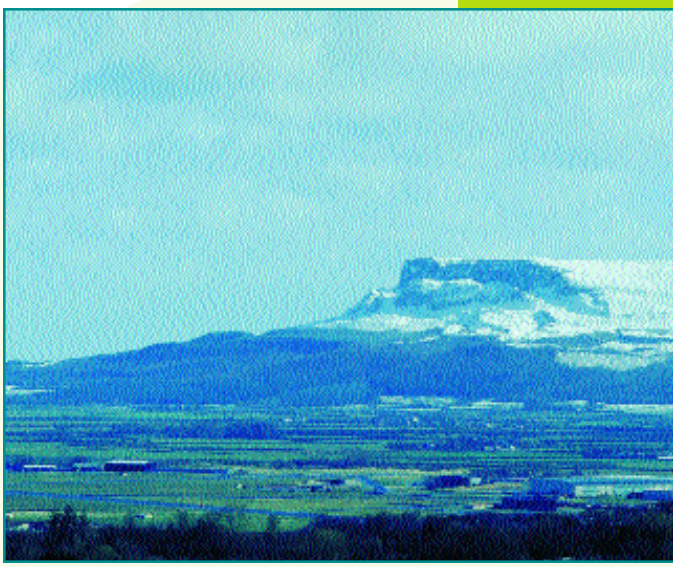
The coastline along the northern fringes of the plateau is quite different again. A sequence of spectacular coastal features includes the vertical cliffs of Fairhead, the sea stacks at Ballintoy and off Rathlin Island, and the famous Giant's Causeway, a World Heritage Site (LCAs 57, 119 and 120). The cliffs reveal the multi-coloured strata of the layered rocks beneath, including white chalk, black basalt and red tropical soils. The headlands separate wide sweeping beaches such as White Park Bay and Runkerry Strand which contrast with the tiny enclosed bays of the north east coast. The rocky headlands are the sites for a number of hotels and golf courses, as well as the dramatic cliff-top castles of Dunseverick and Dunluce.

Coastal cliffs, North Antrim

2.2 THE NORTH WEST

The North Antrim sequence of sheltered sandy bays and rocky headlands continues westwards into County Londonderry, where these landscape elements are combined on a bolder scale. The dramatic broken cliffs of Binevenagh tower above the flat polderland behind Magilligan Strand and the contrast between these strikingly different landscape types creates one of the most memorable landscapes in Northern Ireland.

The cliffs of Binevenagh mark the western limit of the Antrim basalt plateau, which stretches almost from Belfast to Derry. The basalt escarpment has a distinctive profile with a sheer cliff-face of black basalt, surrounded by a cone of grassy scree (LCA 36). The summits form a sequence of striking landmarks overlooking the broad, saucer-shaped Roe Basin to the south-west of the plateau.



Binevenagh and Roe Valley Basin

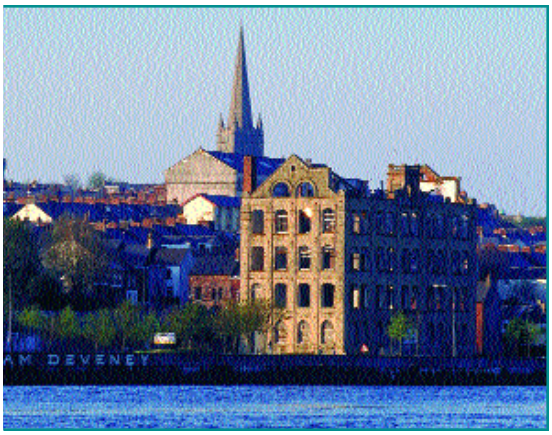
In contrast the flat Magilligan foreland (LCA 35) has been formed from the clayey glacial drifts deposited along the south shores of Lough Foyle at the end of the Ice Age. It was drained and reclaimed during the 19th century by the construction of embankments along the shore and a network of drainage ditches inland. The panoramic view from the cliff-top of Binevenagh (LCA 36) reveals the strong contrasts in the pattern and character of the landscapes below. The flat polder farmland is an engineered, artificial landscape, with fields, ditches and roads forming an abstract broken grid of straight lines and right angles. To the north, a rugged strip of sand dunes separates the arable fields from the sea, their natural forms providing a sharp contrast to the neat geometry of the farmland. The dunes reappear further east, at the mouth of the Lower Bann, where they have accumulated in the lee of Portstewart Strand (LCA 54). They form a rugged sequence of peaked ridges and resemble a miniature mountain range.

North Derry polderland, as seen from Binevenagh

Lough Foyle is a broad, windswept bay, guarded at its narrow mouth by Magilligan and Dunagree Points. The rugged Donegal uplands form a

backdrop to these tidal waters and a setting for the historic port of Londonderry on the banks of the Foyle (LCAs 31 and 32). Flowing along a geological fault line the river corridor is a busy transportation route linking the historic mill town of Sion Mills with Strabane and Londonderry. South of Sion Mills the river valley becomes deeply incised and the Foyle flows rapidly within a narrow wooded channel (LCA 27). The principal tributaries to the River Foyle in Northern Ireland are the Faughan and the Burn Dennet.

While the Foyle valley has a relatively spacious tranquil character, its eastern tributaries wind in deep, narrow valleys between the rounded foothills to the north of the Sperrins (LCA 30). This is predominantly a lowland landscape, with a verdant, settled character and there are numerous settlements and scattered farms. Many of the domed hill-tops are capped with a distinctive patch of brown moorland, creating a prominent contrast with the surrounding pastures.



Londonderry City historic core

Counties Londonderry and Tyrone are dominated by the massive mountainous summits of the Sperrins, which form a distinctive backdrop for views throughout the North West. In Irish the name Cnoc Speirin means 'pointed hills'. The Sperrins have broad, rounded profiles rising to knife-like ridges and pointed peaks (LCA 29). The mountains are underlain by some of the oldest rocks in the Province and have an ancient, timeless quality. At close quarters, the simple composition of the upland views draws attention to minor details of landform such as the shadows thrown by jagged gullies, the cones of broken grey scree and the rocky outcrops.

The steep slopes of the upland ridges are carpeted with closely-cropped grey-green moorland grasses, wrinkled with tiny terracettes and crossed by sheep tracks. Straight earthbanks of the ancient townland boundaries divide some of the slopes into broad, elongated rectangular plots. There are some conifer plantations, but the overriding impression is of an impenetrable, empty wilderness, with only occasional isolated barns and narrow, open roads.

Glenelly Valley

To the south of Sawel Mountain, the Glenelly, Owenkillew and Owenreagh Rivers flow within a series of linear glens along some of the principal fault-lines in the Sperrins (LCAs 24, 25 and 28). The picturesque, verdant landscape of these valleys is a striking contrast to the wilderness of the expansive, open moorland above. The ancient ladder pattern of pastures on the upper valley slopes dates back to the early Christian period and the journey up the long Glenelly Valley is like a trip back in time. The remote clachans, stone bridges, scattered ancient woodlands and steep earthbanks suggest a traditional, slower pace of life.

The distinctive silhouette of Slieve Gallion (LCA 41) is a prominent landmark on the eastern fringes of the Sperrins which, for many people, marks the beginning of the Sperrins chain. The summit is of volcanic origin and is flanked by a wild, rock-strewn landscape of moorland and grey scree. Slieve Gallion looms above the surrounding verdant lowlands of the Lough Neagh Basin.

Immediately to the south of the Sperrins, the Creggan Plateau (LCA 25) is a windswept upland where shallow ridges of sand and gravel are separated by extensive areas of blanket bog. Conifer plantations form a dark backdrop to scattered, isolated white farm buildings. The plateau is overlooked to the south by the crinkled granite summits of Evishandrum Mountain and Cregganmore (LCA 43). Here the landscape has a more irregular, finely-grained pattern of small pastures, scrubby birch woodland and patches of marsh.

River Mourne at Victoria Bridge

Further west, and near Newtownstewart, the long southern ridges of the Sperrins extend southwest to the pointed summit of Mullaghcarn and the outlying twin peaks of Bessy Bell and Mary Gray. Together these summits, separated by the deep wooded Strule River Valley (LCA 26), form a memorable gateway landscape at the confluence of many different landscape character areas. This is the western entrance to the high Sperrins along the Glenelly valley (LCA 28), but it is also the bridging point between the Foyle/Mourne valley to the north (LCA 27) and the Omagh farmland basin to the south (LCA 22). To the west, the wide River Derg valley leads on to the remote upland moors and forests of west Tyrone (LCAs 19 and 20).

The broad basin centred on the town of Omagh (LCA 22) is drained by the Strule, Fairy Water, Drumragh and Camowen Rivers. The lowland is strewn with drumlins, with extensive patches of lowland raised bog on low-lying land. The drumlins peter out towards the eastern waterlogged fringes of the basin at the foot of the Carrickmore Hills. Here the Camowen valley (LCA 23) is a flat landscape with a patchy mosaic of conifer plantations, bog and pasture.

The drumlin lowlands to the south of Omagh (LCAs 15 and 22) are flanked by broad sandstone ridges. The lower slopes of ridges such as Brougher Mountain and Pollaght have an attractive, convoluted landform, (LCAs 14, 16 and 44). Fingers of more resistant rock extend out into the drumlin lowlands, providing opportunities for longer views. There are stunning panoramas across the lowlands from the escarpment lanes. Overall, the topography of these drumlin lowlands and sandstone uplands displays the 'Caledonian' south west to north east trend and the broad lowland corridor (LCA 15) connects Tyrone with the Irvinestown farmlands of northern Fermanagh.

2.3 FERMANAGH

Fermanagh's distinctive identity and heritage owes much to its peripheral location in the far south west corner of Northern Ireland. The area has developed an independent thriving local culture which is reinforced by its unique range of landscapes.

Inish Lougher from Ely Lodge, Lower Lough Erne

Upper Lough Erne

Enniskillen

Fermanagh is famous for its lakelands (LCAs 2, 11 and 13). The interplay of water, reeds, meadows and mists against an undulating backdrop of mountains provides an infinite variety of scenic views. The shoreline landscapes are always enclosed; by the distant horizon of hills, mountains and cliffs, but at close quarters by drumlins, dense hedgerows, clumps of trees and woodlands. The River Erne flows through the centre of the area, linking Upper and Lower Lough Erne.

Lower Lough Erne is a broad crescent of open water which stretches from the steep, rocky scarps of Magho to the maze of low wooded islands clustered close to Enniskillen. In contrast Upper Lough Erne is a wonderful secret landscape of interlocking loughs and drumlins, with twisting channels winding their way in between. There is water everywhere, but this is a totally disorientating landscape and from land it is almost impossible to understand how different parts of the indented shoreline are linked. It takes a journey by boat to appreciate the scenic beauty and landscape variations of the loughs. The numerous historic churches and monuments on the shores and islands reflect centuries of travel by water.

Enniskillen is at the core of the district. The town is perched on a series of drumlin islands at a key bridging point between Upper and Lower Lough Erne where the lough waters meet and the River Erne connects and divides. The indented shoreline, with its promontories, secluded bays and wooded islands, provides an idyllic setting. The town is studded with striking landmarks including historic bridges, the Cathedral, Cole's Monument and the Portora Royal School. It is enclosed by steep drumlins and subdivided by winding water channels. The wooded estates of Castle Coole and Lisgoole Abbey provide a stunning unspoilt shoreline setting to the groups of hill top buildings. The roads radiating out from Enniskillen provide good links to the small dispersed rural settlements which are found in all parts of the district.

In west Fermanagh the skyline is dominated by Belmore Mountain and the dramatic limestone escarpment which wraps around the Ballintempo uplands, rising to a sheer cliff at Knockmore (LCA 6). There are aerial views from this summit across the Sillees Valley and to Lower Lough Erne. This is an area of stunning karst scenery. The escarpment is interrupted in places by stepped limestone pavements, cliffs, gorges and deep potholes. It is fringed by an attractive light hazel-ash woodland which contrasts with the grey limestone. To the west, the Ballintempo uplands (LCA 4) are carpeted with dense forest, although rocky outcrops and small loughs provide local variation and there are intermittent stands of native broadleaves.

To the west of the sandstone uplands, the ridged lowlands of the Garrison area extend to the secluded, indented shoreline of Lough Melvin (LCA 1). Much of this remote farmland is under-used and the rough-textured fields and hay meadows retain a slightly wild character.

Knockmore limestone escarpment (RT)

The tabular peat-covered summit of Cuilcagh dominates the south west corner of Fermanagh (LCA 9). It is underlain by tilted limestone strata and capped by resistant coarse sandstone and grits. Peatland cover is extensive but limestone outcrops as a magnificent escarpment which extends from the Marlbank and Hanging Rock to Greenan Rock. It is framed by luxuriant woodlands and hazel scrub. The surface of the limestone plateau is carpeted with valuable herb-rich grassland and there are masses of ferns and mosses in the limestone fissures. This is the setting for the Marble Arch Caves, the most extensive cave system in Northern Ireland, the Fermanagh Natural History Park and the designed estate landscape of Florencecourt.

Topped Mountain lough (RT)

At the foot of Cuilcagh, the broad flat valley of the Arney River (LCA 8) contrasts with the dramatic uplands. To the west, between the Ballintempo Uplands and Cuilcagh, the lowlands contain the twin lakes of Lower and Upper Lough Macnean, which are fringed by pastures, wooded promontories and reed beds. Parts of the limestone scarp, and in particular the steep cliff of Hanging Rock, provide a dramatic enclosing edge to the Lower Lough.

Like Upper and Lower Lough Erne, west and east Fermanagh have totally contrasting characters. The river valleys of the Finn/Lacky, Colebrook, Tempo, Ballinamallard and Glendurragh flow through broad east-west drumlin corridors to Upper and Lower Lough Erne. The broad valleys separate prominant ridge

lines; in the south, the capped limestone uplands of the Carnrock and the Cooneen Hills (LCA 18) and further north the broken sandstone ridges of Brougher Mountain (LCA 16).

The lowland pastures have an intensely verdant character. The drumlins are often partially linked so that the slightly sandy or rocky, undulating ridges are separated by bands of bog or small loughs. This landform is particularly pronounced in the Irvinestown area (LCA 15), but there are also chains of small loughs at the foot of the Carnrock Hills in the south east corner of Fermanagh (LCA 12). The valleys are often well marked by trees, particularly in areas with estate land as near Brookeborough, Tempo, Ballinamallard and Irvinestown.

Lough in Carnrock Hills (RT)

The broad Colebrook River valley leads into the Clogher Valley lowlands (LCA 17) to form the principal communications link between Fermanagh and the Lough Neagh Basin at the heart of Northern Ireland.

2.4 LOUGH NEAGH BASIN

Distinctive skyline, Clogher Valley

The Clogher valley (LCA 17) in south Tyrone has its own special landscape character. It is a detailed intricate landscape, rich in minor landscape features and idyllic views. The drumlins and long ridges on the floor of the valley have a scattered irregular character, producing a diverse undulating topography and constantly changing enclosed views. The valley landscape is enhanced by views to historic designed landscapes with splendid estate houses, lakes and wooded parkland in an attractive riverside setting. The valley is overlooked by the wooded escarpment of the

sandstone ridges to the north west (LCA 16), which provide a distinctive skyline, as well as an attractive wooded backdrop. Water has a strong presence. The River Blackwater and its many upper tributaries meander almost unnoticed around the drumlins. The streams are bordered by water meadows and there are many small rounded loughs, particularly towards the outer margins of the valley.

Lough Neagh, typical fringe landscape

Lough Neagh is a vast, lonely sheet of water. From the shoreline, the lough resembles an inland sea and there are long expansive views. Parts of the low-lying lough margins are densely settled, with lines of houses edging the straight or looping roads, but there are also empty areas of marsh and woodland. These are a maze of wet meadows, reedbeds, woodlands and scrub, with pastures and settlements on higher ground. They are valuable not only for their scenic qualities, but also for their nature conservation importance (LCAs 48, 52, 60, 61, 62, 63 and 64).

The principal rivers flowing into and out from Lough Neagh have each created their own distinctive setting. The Upper Bann, Blackwater, Ballinderry, Moyola and Main flow into the Lough and the Lower Bann is the principal outlet to the north coast. The Lower Bann (LCA 52), the Blackwater (LCA 46, 47 and 64) and the Upper Bann (LCA 64, 65 and 67) flow within broad valleys with extensive floodplains. In each case, the river channels are partially hidden from view behind steep embankments and the floodplains are an important focus for open views and recreation. The Lower Bann and the fringes of Lough Beg (LCA 52) are characterised by belts of woodland on wet low-lying land, and by extensive areas of lowland raised bog on the flat valley floor. The valley is overlooked by views from 'Long Mountain' to the east and is a dominant feature in the wider landscape.

The Blackwater (LCA 46) follows a more secretive, tortuous course through the east of the Clogher valley and the drumlins of south east Tyrone and west Armagh. The river is often tightly enclosed by drumlins and there are only limited views to the water's edge. Enclosed wooded gorge landscapes at Benburb and more open views to wet grassland and wooded estate landscapes, such as at Favour Royal, enhance the diversity of the valley landscape.

River Blackwater at Benburb

Peatlands Country Park

The floodplain of the Upper Bann provides a welcome contrast within the busy well-settled farmland and orchards of the Portadown-Craigavon area (LCAs 47 and 79). In places the flat marshy riverside landscape has an abandoned character, with woodlands, hawthorn scrub and gorse.

The Upper Bann and the Blackwater flow into the southern part of Lough Neagh through a distinctive flat landscape of peatlands, small pastures and scrub (LCA 64). Lines of traditional small cottages on drumlins and on the fringes of the peatlands have been supplemented by more recent dwellings, but the road pattern still reflects the ramparts and looping small roads which give access to the low-lying land. Much of the area has been previously worked for peat and has been extensively modified through extraction. It is a haven for wildlife, particularly waterfowl, and the Peatlands Country Park and the Oxford Island National Nature Reserve are popular retreats.

Portmore Lough Fringe

The extensive drumlin lowlands to the west of Lough Neagh vary considerably in character (LCAs 42, 45, 48, 50 and 52). The drumlins vary in scale and some of the most scenic and distinctive drumlin landscapes are found to the east of Brougher Mountain and to the south of Dungannon (LCA 45). They are steeper and higher than those elsewhere and are frequently separated by small, rounded loughs.

The farmland in this western part of the Basin has a diverse, lively character. Fields, hedgerows and small woodlands are laid out in an infinite variety of patterns and each drumlin has a unique identity. Farmsteads are positioned in sheltered sites on the drumlin slopes and narrow lanes skirt around the low-lying, marshy hollows between the hills. In the broader river valleys and on the immediate fringes of Lough Neagh, farms and villages are concentrated on shallow drumlins which often form prominent 'islands' in the floodplain. Strings of small houses typically mark the edges of the floodplain and there are long views framed by individual mature hedgerow oak trees.

The character of the drumlin landscape also varies towards the upland fringes to the west. Here the landform becomes increasingly undulating and the drumlins are steeper and more tightly enclosed. The drumlin landform is often confused by the complex, irregular mounds of sand and gravel moraine on the upland margins.

The Moyola Valley (LCA 49), in the Draperstown area, is an exception. The landscape here has a more coherent character than in other parts of the drumlin lowlands and it has a deeply undulating landform, which becomes smaller in scale and more tightly enclosed towards the river in the centre of the valley. The numerous hedgerow trees and small woodlands also contribute to the special, secretive character of the landscape in this area. The valley is overlooked by the peak of Slieve Gallion and the landscape at the foot of Slieve Gallion (LCA 41) is also particularly distinctive as the streams flowing off the mountain have dissected deep narrow glens in the resistant rocks.

On the eastern shores (LCA 62)the farmland generally has a more open character. In places there are long views across a completely flat landscape, with prominent large farmsteads on small 'islands'; elsewhere, the shores are fringed by

secluded, small pastures which run right down to the water's edge. On the fringes of Portmore Lough (LCA 63), the regular pattern of fields gradually breaks down as the pastures are overgrown by rushes and carr. Portmore Lough is completely obscured by dense scrub.

Silent Valley and Ben Crom (RT)

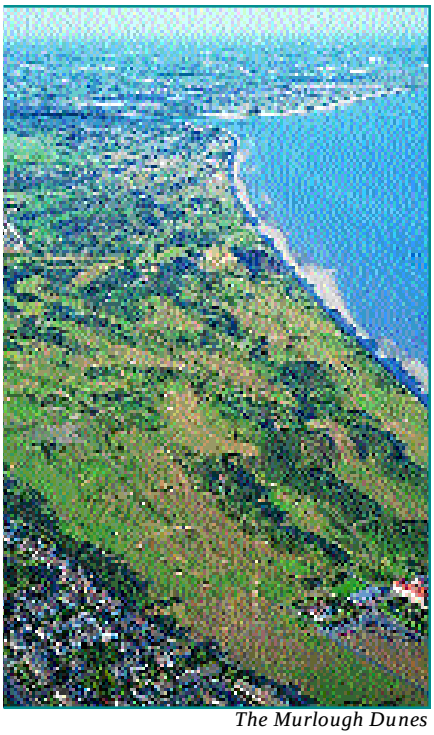
2.5 THE MOURNES AND SOUTH ARMAGH

The high pointed peaks of the Mournes (LCA 75) and the Ring of Gullion (LCA 71) dominate the landscape to the south of the Lough Neagh Basin and provide a stunning backdrop to views for miles around. The extensive foothills leading up to these steep summits form rugged upland landscapes with a broad scale and a relatively simple landscape pattern. There is a gradual transition to the surrounding drumlin farmland. The Slieve Roosky complex lies to the west of the principal Mournes chain (LCA 72) and the rolling uplands of the Carrigatuke Hills (LCA 68) extend north west from the Ring of Gullion towards Armagh City.

The Mournes are unique in Northern Ireland. The circle of twelve high granite peaks are a pristine mountain landscape which towers above the surrounding rocky foothills and drumlins. To the south east the steep slopes sweep down to the sea and to the south west the pointed summits are complemented by the tranquil waters of Northern Ireland's only fjord, Carlingford Lough. The upper slopes of the high peaks are littered with granite scree which glints in the sun and emphasises the plummeting landform. Stone walls snake up the open slopes, subdividing the marginal farmland and lending visual emphasis to the contours. But the farmland peters out on the exposed upper slopes, where the boulder-strewn heather moorland, developed over years of light sheep grazing, provides a habitat for some rare plant communities.

The Mourne peaks and the stone wall landscape

Loughs, reservoirs and rocky mountain streams occupy the steep coombes and valleys which dissect the mountain ridges. The conifer plantations which flank some of the outer slopes contrast with the open character of the upland landscape, where woodland scrub is only found clinging to the narrowest of upland gullies. Areas of blanket bog on the narrow plateaux between the peaks are punctuated by small, rounded loughs, the sources of the many small rivers and streams which radiate from the mountains.



The Murlough Dunes

The distinctive stone wall landscape to the south of the Mournes is known locally as the 'Kingdom of Mourne' (LCA 74).The land falls towards the smooth coastal plain and must at one time have been littered with large rounded boulders. But years of painstaking clearance by local farmers has created a remarkable landscape of small, open fields enclosed by high boulder walls. The steep mountain slopes provide a dramatic backdrop to this striking and unified farmed landscape, which descends to the bustling coastal road and the fishing ports of Kilkeel and Annalong.

The Mourne coastline has a particularly diverse range of coastal features. To the east of Newcastle, the Tyrella and Murlough dunes, the long sandy beaches and the mudflats of the Inner Dundrum Bay provide a striking contrast to the soaring mountain landscape, while to the west, the scenic deep waters of Carlingford Lough reflect the surrounding forested slopes. Narrow Water Castle marks the sheltered entrance to the narrow, steep-sided valley of the Newry River which leads to the port of Newry.

In the border country of South Armagh, the volcanic complex of hills known as 'The Ring of Gullion' (LCA 71) has yet another special, distinctive and unique landscape. The shape of the landform, which wraps tightly around an inner core, reinforces the strong sense of local culture and identity. The neat pastures of the farmland are encircled by a rugged ring of volcanic dyke hills and are dominated by the central bulk of Slieve Gullion, the original volcanic plug. This is a landscape of contrasts and drama, especially at the entrance or 'gateway' north from the relatively flat plains and bogs of central Ireland. The dyke hills have a broken, and in places, jagged silhouette. They form a craggy rampart around the secluded inner basin and provide opportunities for some wonderful sweeping vistas.

The 'Ring'from Slieve Gullion (RT)

The landscapes on the outer fringes of the 'Ring' have a relatively remote, isolated character. To the north west, the rounded summits, moorland and woodland of the Carrigatuke Hills provide a unified backdrop to the rolling, well wooded farmland of Central Armagh. To the west, the verdant drumlins and scrub-fringed loughs of the Crossmaglen area have a more domestic scale.They are overshadowed by the backdrop of dramatic uplands and look southwards, across the border to the Republic.

2.6 DOWN

The drumlin lowlands and the Quoile Pondage, Downpatrick

When people think of Down, they usually think of drumlins. The egg-shaped hills extend across vast areas of farmland, from Banbridge to Newtownards, creating a relatively enclosed landscape with a domestic scale and a diverse, intricate pattern. However, the landscape is not always completely enclosed; there are longer views along river floodplains, from higher land such as the Holywood and Lecale Hills and from the margins of even higher land, for instance on the fringes of the Slieve Croob uplands.

The central core of Down is dominated by the rugged uplands of Slieve Croob(LCAs 83, 84,87, and 88). The broken rocky summits stand out from the surrounding mosaic of open moorland and marginal pastures. The landscape retains an ancient, timeless quality and is dotted with prominent archaeological sites. The Legananny portal tomb, which dates from the Neolithic period, is the best known site, but there are cashels, raths and standing stones in many of the fields on the slopes leading up to the summits. The pastures are enclosed by rough stone walls which create striking patterns against the open slopes and stunted, wind-sculptered trees and small, derelict cottages are focal points.

The central moorland core is surrounded on most sides by a wide area of marginal farmland where drumlin tops are broken by rocky outcrops and clumps of gorse. This is a relatively accessible upland massif. The moorlands are traversed by several roads and there are long views across the foothills to the Mournes and over the surrounding drumlin lowlands and deep valleys.

Castle Hill and the Dorn Nature Reserve, near Kircubbin

Each drumlin has its own, individual character. Most are subdivided neatly by hedgerows into fields, with small stands of woodland, patches of scrub and single dwellings or barns creating an infinite variety of landscape patterns. Hedgerows typically emphasise the rounded landform and the break of slope at the foot of the hill. They reinforce the natural contrasts in land use between the well-drained drumlin farmland

and the waterlogged scrubby bog and meadows in the inter-drumlin hollows. There is a scattering of rural development, with farms and groups of houses sited on mid-slopes so that they are always set against a backdrop of rolling fields and hedgerow trees. Whenever farms or tightly spaced groups of small houses are sited on hilltops and associated with tree planting, they are generally well integrated and appear as a larger farmstead. The drumlins often create striking entrances to small towns and villages such as Ballynahinch and Killyleagh by obscuring the settlement right until the last minute.

Skettrick Island,Whiterock

The most impressive drumlins in Down are found within the broad valley system of the Upper Bann near Banbridge (LCAs 78 & 67) and between Killinchy and Dundrum (LCAs 91 and 94). The drumlins in these areas are generally steeper and higher than those elsewhere. Their topographic form is emphasised by winding watercourses and, on the lowland fringes of Strangford Lough, by small inland loughs or fens in the inter-drumlin hollows. The loughs often have partially wooded margins and display varying stages of vegetational succession, from open water and reeds to gorse scrub and small trees.

Fields in the Quoile and Lecale areas (LCAs 91, 92 and 93) are typically enclosed by attractive dry stone walls. The drift geology map provides the explanation (see Section 5) as this is an area where the bedrock is close to the surface. The abundant stone has been put to good use, giving the landscape a robust, well-structured character and a special, local identity. The stone walls are complemented by larger stone-built farmhouses and barns and by avenues of mature beech trees. Stands of pine are also characteristic features which stand out in the landscape, particularly where they occur on the summits of the smooth hillocks. The drumlins provide a scenic landscape setting for Northern Ireland's largest sea lough.

Strangford Lough is a unique enclosed area of sea with a diverse shoreline of rocky and boulder strewn shores, sandy bays and lonely mud-flats. Along the western shores, the drumlins continue right out into Strangford Lough, forming a sheltered waterside landscape of half-drowned, oval islands and winding inlets. The islands are a focus for some stunning shoreline views and have been favoured sites for churches, castles and chambered graves. The historic town of Newtownards is sited at the head of the Lough. In contrast, the eastern shores are relatively smooth, and sweeping areas of inter-tidal mudflats expand towards the head of the Lough and the estuary of the Comber River. To the south, the rocky Lecale Hills and meandering Quoile estuary provide a more dramatic landscape setting and Downpatrick, perhaps the most historic town in Northern Ireland, sits astride the marshes of the river corridor.

'The Narrows,' the strategic link between Strangford Lough and the sea is an important ferry route linking the twin ports of Portaferry and Strangford (LCA 93).

The many wooded parklands on the shoreline of the Lough originated in the 18th century, when wealthy landowners realised that this was an idyllic spot for their landscaped demesnes. The woodlands of Mountstewart, Finnebrogue, Castleward, Rosemount, Portaferry and Delamont are strategically planted for visual effect and contribute much to the distinctive character and scenic qualities of the Lough (LCAs 93, 94, 100 and 101).

Strangford

To the south of Strangford Lough, the rugged, open landscape of the Lecale region has a very different character. The Lecale Hills, which extend from Downpatrick to Portaferry (LCA 93), have a rocky, gorse strewn character. The tiny settlement of Saul has long been considered the starting point for St Patrick's missionary work and St Patrick's shrine is a local landmark on the summit of Slieve Patrick, visible for miles around.

The coastal landscape of the Lecale has a windswept, remote character (LCA 92). It retains a distinctive local identity and is steeped in the past, with numerous ancient sites including standing stones, chambered graves, crosses, churches, raths and holy wells. Forts, castles and windmills are prominent landmarks in the open farmland and are often sited on hilltops. By contrast, settlements are generally small and tightly clustered in sheltered sites. The largest is the attractive south coast port of Ardglass. The robust stone buildings and harbour walls are perfectly integrated with the surrounding landscape and the town seems anchored onto its rocky headland.

Saul Church, the Lecale Hills (RT)

To the north of Cloghy, a sequence of low, rocky headlands and rounded bays continues right along the outer coastline of the Ards peninsula (LCA 99). Each bay has its own small fishing village, with colourful buildings clustered around stone quays. Many of these settlements have expanded to accommodate the demands of holiday homes and caravan sites, but they remain dwarfed by the expansive seascape. The stands of mature woodland associated with the many small estates provide welcome shelter in a relatively exposed setting.

In North Down, the Holywood Hills (LCA 102) provide a scenic, undulating backdrop to the settlements on the shores and at the head of Belfast Lough. The steep slopes, pastures, estate woodlands, conifer plantations and shelterbelts contribute to a deeply rural landscape on the fringes of some major urban areas.

Ballyquintin Point,Ards Peninsula (RT)

Northern Ireland

Landscape Character Assessment

2000

Forces For Change

3

Northern Ireland

Landscape Character Assessment

FORCES FOR CHANGE

The landscape of Northern Ireland is constantly changing in response to human activity. In the past, sudden, permanent changes were wrought by war, famine and changes in patterns of land ownership. The strong influence of the railways, canals and linen mills during the 19th century proved more transient and was steadily replaced by a dependence on travel by road. More recently, the expansion of urban areas on the fringes of Belfast and elsewhere, together with a proliferation of housing and infrastructure in the countryside, has brought a further wave of change. Yet the countryside is increasingly valued as a resource for tourism and recreation, as well as for its intrinsic landscape, nature conservation and historic interest.

The pace of change is now more rapid than ever, and the implications of change are always difficult to assess. Changes regarded as negative by some may be seen as improvements by others; perceptions change with time and new features will often become established as valued elements of the landscape. However, it is crucial that change is managed to retain or enhance the qualities which make the landscape of Northern Ireland special.

The Draft Regional Strategic Framework for Northern Ireland (3) published in December 1998, proposes a spatial framework for development in Northern Ireland up to the year 2025. It reviews the forces driving change in economic, land use and physical development in the region, many of which will have landscape implications.

Among the main trends and issues highlighted in the draft strategy are:

- rapid growth in the regional economy, which shows the fastest rate of improvement in the United Kingdom;
- demographic and household change that could generate a need for up to 200,000 additional dwellings by 2025;
- high rates of population growth in rural areas relative to urban areas;
- dispersal pressures leading to extensive suburban growth and declining urban areas;
- a need to improve the quality of the roads infrastructure as a key requirement of economic development, particularly in the west:
- a need for a vibrant rural economy with strong regional towns and revitalised small towns and villages; and
- the importance of building a compact and thriving metropolitan core at Belfast combined with a strong north-west regional centre based on Derry/Londonderry.

In rural areas, it is recognised that some towns and villages have grown rapidly in the past and their original character and identity could be swamped by further large scale development; while other rural towns and villages are in decline and need development to help revitalise them. The cumulative impact of housing development on the countryside,

particularly within the Belfast travel to work area, gives rise to concern and will require further consideration in policy and Development Plans. The benefits to the community of building within existing cities and towns, rather in rural areas, are highlighted, in terms of better services, reduced transport need, and protection of greenfield land.

This section examines the most influential driving forces behind landscape change in Northern Ireland, setting changes in a long term context, and analysing trends for the future. It includes broad guidelines for each of the principal forces for change which indicate how change can be managed to ensure that it has a positive, sustainable influence on landscape character.

Sprucefield Shopping Centre

3.1 BUILT DEVELOPMENT

In the last decade, built development has occurred both on the fringes of towns and villages and in a more scattered pattern along smaller roads in the open countryside throughout Northern Ireland. In future it seems likely that development will be focused to a greater degree in the region's cities and towns but the scale of development in town or country that is likely to take place means that particular care and attention to issues of siting, layout and design will be critical (4).

3.1.1 Expansion of Existing Settlements

Most current Development Plans identify and zone land for additional built development on the fringes of existing settlements. New built development on the edges of existing settlements has mostly been in the form of large housing estates, and sites for industrial, retail and commercial units. Unfortunately these large estates are often built to a standard design and tend to be unrelated to the pattern of the surrounding countryside, for instance at Bangor, Ballymena, and Strabane. Red brick is extensively used despite the predominance of stone in most towns and villages. Such housing estates often have the effect of isolating the core of the settlement from its landscape context, restricting views to the open countryside and creating a nondescript first impression on principal approach roads.

New shopping centre developments, at principal junctions on the outskirts of towns, are often precedents for further leisure, retail and service developments such as petrol filling stations, cinemas, garden centres and even hotels. They form a predictable and rather bland gateway to the towns they serve and may lead to the decline of local town centre shops and services. Most retail/commercial developments of this kind are associated with bypasses around the larger towns in and around Belfast.

Expansion of existing settlements usually involves the development of greenfield sites and therefore the loss of a proportion of the region's landscape resource. Such development represents a significant, and potentially detrimental, force for change in landscapes which are sensitive in visual terms. Development can be particularly significant in scenic areas, shorelines or prominent ridges, and in landscapes which are important for their inherent historic or ecological interest.

Urban expansion, North Down

The quality of the aquatic environment is also affected by built development since run-off from hard surfaces is often polluted. New standards apply to protect the main rivers and their tributaries and often it is the minor watercourses which are most at risk. Frequently they are ignored, culverted or polluted by run-off instead of being treated as a central focus for a scheme. Such watercourses could often be managed more positively as attractive features, for instance within the Belfast's open space network.

At a smaller scale, roadside ribbon development and new development on the fringes of settlements may encroach on the setting of distinctive landscape features and views, threatening their special character and local sense of place. For instance, the fringes of Kilkeel have been affected by ribbon development; at Carrickfergus the delicate pattern of small fields and woodland on the escarpment slopes is threatened by recent and proposed development; and at Downpatrick, where the summits of the Lecale Hills have long provided a striking backdrop to the historic town, the skylines are already becoming dominated by recent housing developments.

3.1.2 Isolated Buildings in the Countryside

Northern Ireland has a distinctive traditional pattern of rural development, with numerous individual houses and buildings dispersed throughout the countryside. Many of the traditional rural buildings have become derelict or under-used, and this too has landscape consequences. Derelict buildings are particularly prevalent in areas of marginal farmland on the fringes of the upland moors where they give an air of abandonment. They may be unsightly or overgrown but they usually display historic styles and building materials.(A study by the University of Ulster in 1992 (5) listed almost 8000 derelict sites in County Londonderry and almost 1000 in County Tyrone. Settlement patterns can be strikingly different even within short distances and new dwellings set with no relationship to local patterns can have a significant landscape impact.)

Historic style and well integrated

Forces For Change

Ribbon development,Annetter Point, Lough Neagh

Pressure for housing in the countryside is greatest close to Belfast, Londonderry and all regional towns and service centres, as well as near motorway junctions, where good road connections bring urban areas within easy reach. The Green Belt also has a strong influence: there is evidence that recent dispersed rural development is dominant in many rural areas which lie just beyond the outer edge of the green belt, such as around Dromara, Glenavy and Antrim. Scenic, coastal and loughside areas, for instance on the County Down coast, Lough Neagh and in the Fermanagh Lakeland are also under greater pressure, both for residential development and second homes.

In traditional farming communities, particularly in the west, pressures for new rural housing - especially new or replacement farmhouses - have increased throughout the post-war period, as much of the housing stock in rural areas was substandard and the older buildings proved difficult to renovate and convert to provide modern facilities. In addition, there is a constant demand for new houses on family farms, to enable the younger generations to remain in their home communities. There is also a strong pride in the new, and perhaps a tendency to undervalue traditional vernacular buildings.

The continued development of new isolated houses and large modern farm buildings has had a cumulative negative impact on the quality and character of the countryside. Recent development has tended to have a suburban character and has introduced a profusion of different building materials and styles. Most houses front directly onto rural roads and many have prominent entrance gates and garden plots with an ornamental style which do not integrate well with the surrounding landscape. The continued expansion of new development is inevitably associated with an increase in waste. The drumlin landscapes often present particular problems in this respect as the effectiveness of septic tanks, the usual method of waste disposal in many rural areas, is compromised in drumlin lowlands which have a relatively high water table.

Rosemount House, Greyabbey (RT)

Such recent development contrasts with the many older groups of houses and farm buildings, which often are built of local stone and have attractive landscape settings; they are usually associated with groups of mature trees and are sited in sheltered locations which seem in harmony with the local topography.

3.1.3 Summary of Key Issues

- standardised development on the fringes of existing settlements which compromises their distinctive landscape character and setting;
- out-of-town centre shopping facilities and their associated services;
- the proliferation of scattered new housing in the open countryside, resulting in loss of quality and character of rural landscapes;
- the introduction of a profuse variety of building materials and styles and the lack of reference to traditional rural buildings as models for siting and design;
- the culverting of minor water courses as part of the development process and the subsequent loss of streams and rivers as a local focus for recreational and amenity use; and
- dereliction and decline in the stock of traditional rural buildings.

3.1.4 Broad Landscape Guidance for Built Development

Siting

- Take account of local variations in landscape character - the Landscape Assessment Reports for each District Council area provide further details.
- Site new built development in sheltered positions on lower slopes, using landform and planting as protection from prevailing winds.
- Avoid siting buildings close to the crest of ridges, particularly where they may appear on the local skyline.
- Consider the potential impact of new buildings from a range of viewpoints, both in the immediate surroundings and the wider countryside, placing particular emphasis on views from critical vantage points.
- Examine the traditional relationship between buildings and local roads and use this to inform the siting of new built development: In general, avoid linear, suburban style development which faces directly onto principal roads.
- Consider the sensitive conversion of derelict traditional buildings, particularly in areas close to other settlements; Those in remote, isolated situations may not be appropriate candidates for conversion.

Design

- Use the scale, spacing, orientation and siting of traditional settlement form/layout as a model for considering how new development can be fitted into the landscape without disrupting its traditional pattern and grain.
- Respect existing field boundary patterns and ensure that fencing, hedgerows and lighting along property boundaries are subtly delineated, particularly in rural locations, where they should merge naturally with adjoining fields and woodland.

- Minimise disturbance to the local landform and design earthworks associated with new development to integrate buildings with the local landform: Avoid the use of substantial retaining walls or under-building on sloping sites.

- Consider the location and scale of outbuildings, driveways and areas of hard-standing as part of the overall design, ensuring that they are not dominant in views from the road and using traditional layouts as a model for new development.

- Minimise the scale of new development, particularly modern agricultural, industrial or commercial buildings: Design exterior finishes, colours and details to reduce the apparent size of the building.

- Retain as many existing trees as possible and plant native trees to help screen and accommodate built development, particularly where it forms a continuous line at the foot of steep slopes.

- Minimise the risk that new development will reduce the conservation value and scenic quality of water courses, particularly minor streams: New developments should be designed to benefit from the visual focus and amenity value which water provides.

- Use buildings, styles, forms and architectural details which are characteristic of the local landscape: Most have contributed to a simple, sturdy and distinctive regional style.

Materials and Colours

- Limit the range of materials and colours used on any one building and use natural materials, such as timber, stone and slate to link with existing buildings and trees.

- Select cladding materials and colours for modern agricultural, forestry or industrial buildings to minimise their impact in the surrounding countryside: Avoid the use of very light colours, which can reflect the light, and intense greens or blues, which often clash with the surrounding natural tones of fields and woodland.

- Ensure that the materials and colours used are in harmony with one another and with existing buildings nearby.

- Avoid strong contrasts between ornamental garden plants and styles and the surrounding natural landscape.

3.2 INFRASTRUCTURE

3.2.1 Transportation

Roads are by far the most dominant form of transport in Northern Ireland; changes in patterns of built development reflect our increasing dependence on roads, although rail, airports and regional ports are also important centres of expansion.

The traditional, relatively dense network of rural roads in Northern Ireland is complemented by the principal routes radiating from Belfast. The M1, M2 and M5 motorways, and strategic routes such as the A1, A4, A5, A8 and the A24, link Belfast to the rest of the region and beyond, with a series of local linkage routes and bypasses on the outskirts of Belfast, Derry and the regional towns. Unfortunately road development can and has often had a significant impact on landscape character. It may fragment the countryside, destroy valued landscape and habitat features, and generate further development, particularly service facilities and out-of-town retail centres. Much major large-scale development is often strikingly out of character in small scale rural landscapes.

Trans-European Roadway

Recent changes in transport policy to reflect a more sustainable approach, are likely to restrict the development of new roads, except where they are shown to be essential to the regional development strategy. The DoE (NI)'s policy statement, Transportation in Northern Ireland - The Way Forward (6), sets out the key principles which underpin the new approach to transportation planning. In essence, it suggests that there will be a stronger emphasis on minimising the impacts of transport on the environment, an improved public transport system and more integration between land use and transportation planning, together with a recognition that the demands of future traffic growth should not be met simply by building new roads. In the short term, new roads and major road upgrading schemes are likely to be concentrated on the key Trans-European routes (the two motorways, the A1, A4, A5 and the A8) which provide strategic links to principal British ports. Local bypasses are likely to be confined to towns on these strategic routes such as Omagh, Newtownstewart, Limavady and Strabane. Looking further ahead, the trend in transportation planning is towards a closer integration of the road network with public transportation systems; priority will be given to the development of bus-lanes, cycleways and park-and-ride schemes, as well as to creating stronger links with railway corridors and recognising the transportation needs of future built developments.

Despite the increased emphasis on reducing dependence on the car, future economic growth is likely to generate increasing levels of car ownership. This has

already been a factor in the proliferation of new housing in relatively isolated rural areas and in the demand for out-of-town-centre shopping. While major new road schemes are likely to be limited in future, minor road improvements and the development of privately-financed roads within new housing, retail and commercial developments may nonetheless represent a significant force for change, particularly in rural areas.

The cumulative impact of minor road improvements over the years has gradually eroded the distinctive local identity of rural landscapes. Pressures from increasing volumes of traffic, and in particular from the use of larger farm vehicles and lorries, have often been the catalyst for straightening sections of roads. An example is the stretch of road between Dungannon and Ballygawley, where the introduction of roadside kerbs, signage, white lines and lighting, and the removal of hedgerows and trees to provide visibility splays and sightlines has had a negative impact. An increased emphasis on road safety and the upgrading of minor roads has also played a part. There is a need to extend the emphasis on high standards of design and to pay particular attention to the conservation of attractive local roadside features, such as hedgebanks, stone walls and bridges, which may be vulnerable to insensitive improvements.

Road improvements with loss of mature trees and hedges

In recent years, other forms of transportation have become an important influence on patterns of development. Improved rail links to Dublin and the planned re-opening of the railway between Belfast and Antrim will increase the relative accessibility of these major centres and encourage additional built development in Antrim. There has also been a significant investment in Northern Ireland's regional ports and airports, reflecting the importance of communication links to other parts of the UK and Europe, as well as further afield. Both Derry and Enniskillen airports have expanded and the increase in travel by water, for instance across Lough Foyle, Carlingford Lough and to Rathlin Island, has implications for the development of sensitive coastlines and local harbour ports.

Water travel, Carry Bridge, Lough Erne

3.2.2 Overhead Transmission Lines, Telecommunication Masts and Pylons

Overhead transmission lines are particularly prominent in the more open upland and coastal landscapes of Northern Ireland, such as the Antrim plateau and Island Magee, where they converge on the power station at Ballylumford. On a smaller scale, they may also be visually intrusive when they appear on the skyline as they cross ridges. The number of electricity pylons has recently increased as a result of an upgrading of facilities in rural areas, where the capacity of many lines has been increased to 33 kV.

Single high communication masts or towers are associated with civil aviation, defence industries and the various telecommunications companies. They are prominent on the open upland summits of the Belfast Hills, where there are a number of masts on the summits of Slieve Croob, the Ring of Gullion and elsewhere. They may detract particularly from landscapes that have a remote or wilderness character. It is difficult to predict whether the development of new masts will continue to be a significant force for change in the future as technology in this field is constantly being updated; it may be possible to minimise new developments by combining a number of transmitters onto single masts and removing any masts which have become redundant.

Pylon interrupts views to Larne Lough and Island Magee

3.2.3 Renewable Energy

Northern Ireland is under mounting pressure for wind farm development, as it has a good wind resource and government policy favours the development and use of renewable energy. The best winds speeds are found in the west, for instance in the Sperrins and in South West Fermanagh. There are a number of existing wind farms, for example on the southern slopes of Bessy Bell; on the summit of Temain Hill to the north of Dungiven; and at Tardree on the Antrim Plateau. All of these developments are prominent visually and, while they do not necessarily enhance the landscape, they are not unduly intrusive. However, in planning for any future wind farms, it will be important to consider the cumulative impacts upon the landscape.

Other environmental factors to consider include the overall scale and character of the local landscape, its relative remoteness, the character of local skylines, the degree of enclosure provided by topography or vegetation and site-specific factors such as distinctive landscape features. The region's Areas of Outstanding Natural Beauty (AONBs) and coasts would be particularly sensitive to the development of wind farms.

One other form of renewable energy that may be developed in coming years is the small scale hydro-electric scheme. Such schemes should be handled with care as they are likely to be located in special landscapes; for example the Antrim glens or the Mournes. As well as their direct impacts on the landscape, both wind farms and hydro-electric schemes are likely to create pressure for further overhead lines and pylons.

Ballylumford and Larne Port, from Magheramourne

3.2.4 Summary of Key Infrastructure Issues

- ongoing, piecemeal road improvements, such as widening and straightening, development of new access and bypass links and the use of excessive lighting, signage and white lines, which together have a cumulative impact;
- heavy lorries on narrow rural roads, leading to erosion of verges and characteristic roadside features;
- loss of hedgerows and trees due to junction improvements;
- expansion of regional ports and airports;
- standardising influence of road landscapes on local landscape character;
- additional electricity pylons, overhead lines and communication masts; and
- pressures for wind farm and hydro-electric developments in upland parts of the region.

3.2.5 Broad Landscape Guidance for the Assessment and Design of Infrastructure Developments

Linear Transportation Developments

- Avoid developing infrastructure in remote areas with a wild character
- Align routes to follow contours and minimise disruption to local landforms
- As far as possible, keep routes to lower elevations and follow natural breaks of slope; avoid straight alignments at angles to the natural grain of the land.
- Avoid creating straight, geometric cuts for transmission lines through commercial forests; soften woodland edges along such corridors and design plantations to form a backdrop to power lines where they appear on the local skyline
- Consider under-grounding transmission lines for short distances to avoid breaking the skyline in sensitive locations
- Give special consideration to infrastructure developments on small islands or narrow peninsulas where they may be prominent on the skyline in local views.
- Design infrastructure developments to minimise the risk of water pollution from runoff.
- Consider the potential to use more aesthetically pleasing mast and pylon designs.
- Develop opportunities to enhance the value of railway lines, roads and canals as wildlife corridors
- Design airport runways to minimise the potential for contamination through surface water runoff and to minimise disruption to sensitive habitats in the immediate vicinity of the airport.
- Design new planting as an integral part of all infrastructure development, aiming to reinforce local landscape character and create a seamless 'fit' with the surrounding landscape
- New planting should avoid creating a linear 'corridor' of planting which would draw attention to infrastructure developments; opportunities to emphasise areas of broadleaved woodland should be developed
- Give special consideration to the design of local landscape associated with roads at the entrance to settlements, using traditional stone walls, hedgerows and tree planting to enhance the 'gateway' effect.
- Use local materials characteristic of the area, ie local stone for stone dykes and native species for new planting.

Wind farm

Windfarm Developments

- the presence of ***landscape designations*** - those which are of national importance and which relate to scenic quality (such as AONBs) will be particularly sensitive;
- ***remoteness*** and the degree to which the landscape is affected by man's activities – remote landscapes have very limited capacity to accommodate wind farms and will be especially vulnerable to cumulative impacts, while more accessible landscapes, where human influence is already prominent, will be less sensitive;
- the ***character of local skylines*** - an open skyline, on which the wind farm might appear in silhouette, would be particularly vulnerable, while an undulating, wooded skyline could accommodate wind farm development more easily;
- the overall ***scale of the landscape*** - a wind farm would be a bold statement in a large scale landscape, but in a small scale landscape it may either detract from or be absorbed within existing landscape patterns, depending on specific circumstances;
- the ***degree of enclosure*** (by topography or vegetation) - an open landscape will have wide visibility, whereas the visibility of a relatively enclosed landscape will be restricted;
- site specific factors, such as the ***presence of distinctive landscape features***, historic monuments and buildings and important semi-natural habitats;
- the **scale** of the windfarm development - large scale landscapes are more able visually to accommodate large numbers of turbines;
- the **design, size, colour, siting and layout** of the turbines and the potential impact of any transmission lines and associated infrastructure, such as access roads; and
- the **cumulative impacts** of wind farm developments; once a development is constructed, the capacity of the landscape to accommodate further wind farm developments may be significantly reduced.

Communication Masts

Much of the guidance applicable to wind farms will also be of relevance to communication masts. The use of existing structures to support mobile phone aerials and the practice of amalgamating several transmitters onto one mast minimises the need for visually intrusive structures. It is also good practice to ensure that masts and turbines are constructed from matt, non-reflective materials.

3.3 MINERAL EXTRACTION

Northern Ireland has a relatively rich and diverse resource of minerals which are significant in landscape terms. Local building materials are evident in vernacular buildings while the quarrying and transport of rock is an important aspect of the local economy in some localities.

Village street with local colours and building materials (RT)

Disused sand pits are common features in the rural landscape throughout Northern Ireland as glacial deposits of sand and gravel were dumped intermittently by the retreating glaciers at the end of the last Ice Age. Such deposits provided a convenient local resource of sand and gravel for building construction. Today the large scale commercial extraction of sand and gravel is concentrated in North Derry, the Kilkeel coast and on the fringes of the Sperrins. The widespread working of the rich deposits in these areas is often to the detriment of the landscape, for instance in the Cookstown area.

Northern Ireland's long established hard rock quarries are centred on the Mournes (granite), Fermanagh (limestone) and Antrim (basalt). Gritstone and greywacke quarries are found in a broad belt across Armagh and mid Down. Most extraction is on a relatively small scale, but the quarries often have a significant impact on the character and quality of the local landscape. However some prominent disused quarries, such as those on the slopes of the Belfast escarpment and on the cliffs above Glenarm, have become an integral part of the landscape, contributing to its historic, industrial character.

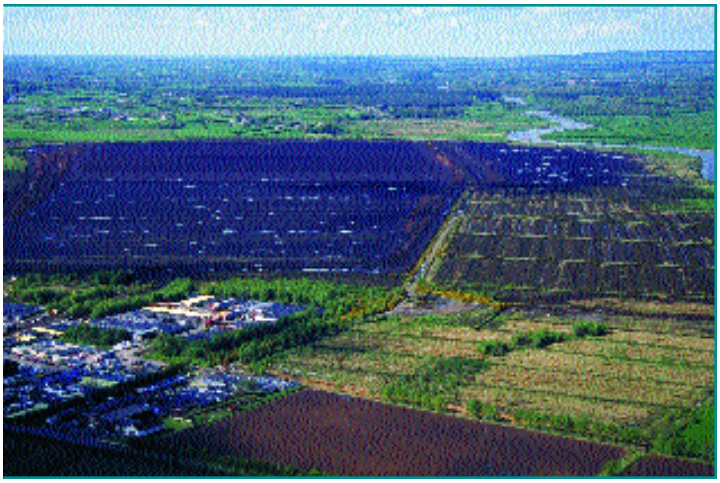
The larger quarries have a major landscape impact; most are subject to strict regulations which require complete landscape restoration when extraction has ceased. However, problems may arise when older quarries, which are not subject to the regulations, are still actively worked. In these cases, the quarry owner is under no legal obligation to restore the landscape and the quarry may be left as an eyesore.

The aggregates market is currently in a state of flux. The recent decline in road building has reduced the demand for crushed rock aggregate and the potential for large super-quarries, but the quarrying industries will inevitably continue in future, fuelled by the demand for house and road building materials. Despite some 180 quarries and pits, there is no evidence of long term depletion and there is a sustainable supply. The strict environmental conditions attached to new planning permissions for mineral working will help to ensure that any landscape impact is minimal and short-term. Public demands for environmental conditions are an important influence on the decision-making process.

Peat cutting has long been a traditional activity in rural areas throughout Northern Ireland. Such localised cutting for domestic use has little long-term landscape impact, but peat extraction on a commercial scale can be extremely damaging as it involves the removal of an irreplaceable resource. Significant areas of landcover are literally stripped away, wildlife habitats are lost and there may be damaging long term hydrological impacts. If planning permission is granted for commercial peat extraction, conditions should be attached requiring the complete restoration of the landscape once extraction is complete.

3.3.1 Summary of Key Issues

- the visual impact of major quarries in scenic upland and coastal locations;
- the negative impact of commercial peat extraction on landscape and nature conservation interests over wide areas;
- the visual impact of pitted sand and gravel landscapes (broken, altered topography and loss of earth science and heritage interest); and
- the legacy of disused quarries from the past, some with waste and abandoned machinery, but others with potential for restoration.



Commercial peat extraction

Abandoned Quarry, Belfast Hills

1.3.2 Broad Landscape Guidance for Mineral Extraction

- The diverse landscapes of Northern Ireland often provide opportunities for screening quarries, particularly if they are a relatively small scale and in sheltered locations.
- Heritage, nature conservation and earth science interest should be conserved by sensitive siting and extraction.
- Large-scale quarries should be sited where they are relatively hidden from principal viewpoints, public roads and local communities.
- Local areas with concentrations of small scale operations would benefit from a comprehensive landscape restoration plan eg Kilkeel, Belfast Hills
- Phased restoration of active workings and, where possible agreed restoration of expired mineral workings, will lessen or obviate long term impacts and may result in some visual improvements.
- Monitoring, frequent clearance and the wider provision of local landfill sites may help to reduce the problem of fly-tipping.

3.4 AGRICULTURE

Northern Ireland retains a grass-dominated agricultural landscape despite strong influences from changes in the Common Agricultural Policy (CAP). However, the industry has become progressively less labour intensive and there has been an ongoing trend towards the amalgamation of the many small land-holdings typical of much of Northern Ireland. There has been a corresponding general increase in the average size of farms, which now stands at 40 hectares. Amalgamation of farms is most common on the better quality land. It has often led to revised drainage schemes, hedgerow removal and an increase in the number and scale of modern farm buildings (including retirement dwellings), all of which have a strong visual impact in small-scale rural landscapes.

The intensification of agriculture has also had a detrimental impact on water quality. A recent survey of river quality in Northern Ireland by the Environment and Heritage Service (7) showed that there is a significant decline in chemical quality of a number of rivers due to excessive nutrient enrichment. This eutrophication may cause severe diurnal swings in the dissolved oxygen content of the water and can be a significant source of stress for invertebrate and fish life. The over-use of fertiliser therefore affects not only the larger water bodies such as both Lough Neagh and Lough Erne, but also the many smaller inter-drumlin wetlands.

In contrast, in areas of marginal farmland, extensive grazing has led to rush infestation of wet pastures and overgrown, unmanaged hedgerows, significantly altering the colour and texture of the landscape. Indeed in many areas, the distinctive patterns provided by field boundaries, local tracks, gate-posts and farm buildings are gradually degenerating as these landscape features become less relevant to the local agricultural economy.

For instance, in stonier parts of Northern Ireland, many dry stone walls are falling into disrepair, and most hedgerows are unmanaged and in poor condition. As field boundaries often represent ancient townland boundaries and support a diverse range of plant and animal species, the decline not only affects the landscape, but also its historic and wildlife interest. Hedgerows with a gappy, stunted character are often rather distracting in visual terms, particularly when they are silhouetted against the skyline.

Valuable heritage features (RT)

The ongoing changes, and in particular the loss of habitats and the erosion of important landscape and heritage features prompted the introduction of the Environmentally Sensitive Areas (ESAs) scheme, which covers many of Northern Ireland's most scenic areas: the Antrim Coast, Glens and Rathlin; the Mournes and Slieve Croob; West Fermanagh and Erne Lakeland; and the Sperrins and Slieve Gallion.

The ESA grant schemes can provide a means of conserving the rich variety of habitats, landscapes, archaeological sites and other heritage features. The scheme also offers financial incentives to encourage traditional farming techniques.

However, there is a need for a more broadly-applicable agri-environment scheme in Northern Ireland which is designed to encourage ongoing countryside stewardship and the protection and enhancement of landscape features.

Species rich meadow, Fermanagh (RT)

Changes in the agricultural economy have prompted the trend to 'farm businesses'. Farm diversification has included the conversion of outbuildings to workshops and a range of tourist related activities such as Bed & Breakfast, farm museums and the development of nature trails and farm holidays. These changes provide opportunities to bolster local rural economies while conserving farm buildings and traditional farming practices. However, exceptionally high standards of design and construction are required to ensure that the development and diversification of small farms has a positive landscape impact in sensitive rural landscape settings.

Agri-tourism

3.4.1 Summary of Key Issues

- the influence of European (CAP) and national policies and the changing structure of agricultural subsidies;
- the amalgamation of farms and a general increase in farm size and degree of mechanisation;
- neglect or removal of traditional farm buildings and field boundaries;
- ongoing loss of local wildlife habitats and the lack of a broadly based agri-environment scheme designed to encourage a sustainable stewardship of the environment in parallel with agricultural production;
- over-use of fertiliser leading to a steady increase in the nutrient content of water bodies throughout Northern Ireland and a risk of eutrophication.

3.4.2 Broad Landscape Guidance for Agriculture

- Contrasting land management systems maintain a diverse landscape character: Recognition and encouragement of traditional practices will help to maintain the distinction between upland and lowland areas.
- Retention of unimproved pastures, encouragement of conversion of semi-improved or improved land to wildlife-rich grasslands and management of herb-rich meadows and wetlands will add diversity to the lowland agricultural landscape.
- Farm and forestry tracks can be visually intrusive on a hillside: Routing along screened alignments or along natural contours will help to ameliorate impact.
- Management to maintain or re-establish, where appropriate, a strong field pattern of traditional stone walls or hedgerows will enhance the overall structure of the landscape and reduce its vulnerability to change.
- Modern agriculture can be particularly disruptive to the natural historical and archaeological heritage; Education, information and incentives can help to reduce this impact.
- Overgrazing and/or the wrong type of grazing leads to loss of diversity and encroachment by bracken; Appropriate sheep, deer and cattle numbers will encourage a more diverse landcover.
- Enclosure of pockets within farmland encourages woodland growth and adds diversity to the farmed landscape.
- The provision of buffer strips adjacent to water courses and lakes may help to intercept diffuse pollution and enhance their ecological and landscape value; However, their width or effectiveness will depend on local soil types and rates of infiltration.
- The clutter associated with small-holdings can detract from local landscape quality; 'Good Housekeeping' such as maintenance of out-buildings, removal of scrap and debris and repair of fences helps to maintain and enhance the landscape.

3.5 FORESTRY AND WOODLANDS

Overall, Northern Ireland has a relatively small proportion of woodland, with only 5-6% of the land under trees; in the vicinity of Belfast this proportion is much lower, perhaps only 1-2%. This section examines the changing pattern of woodland cover, from the localised pockets of semi-natural woodland to estate and farm woodlands and commercial forestry.

3.5.1 Semi-Natural and Estate Woodlands

The original natural woodland, which re-colonised most of Northern Ireland in the wake of the last Ice Age, has now largely disappeared. Over the last 6,000 years, farmers have gradually removed it to provide land for settlement, cultivation and grazing. Scattered woodlands remain in relatively inaccessible places, such as the steep slopes of glens, coastal cliffs and the more extensive areas of lowland moss.

Shane's Castle, overlooking Lough Neagh

The estates of the Plantation period contain some of the most significant remaining areas of mixed and broadleaf woodland in Northern Ireland. Some, like Castle Crom, are owned and managed by the National Trust, some are in private ownership and others have been taken over by the Forest Service to be managed on a commercial basis. They make an important contribution to landscape character in areas such as the lower Lagan valley, the fringes of Strangford Lough, the Clogher valley and in Fermanagh and the North West. Country Parks, such as Castle Archdale in Fermanagh and the Roe Valley Country Park near Limavady are carefully managed by Environment and Heritage Service to provide public access for recreation while conserving nature conservation interest. However, the majority of smaller estate woodlands and shelterbelts suffer from under-management or neglect, for example through encroachment of rhododendron or where they have been under-planted by commercial species. Much historic parkland demesne planting is now approaching the end of its life and requires positive management in the near future.

3.5.2 The Private Sector - Farm Woodlands

The majority of farms in Northern Ireland are small, and farm woodlands tend to be extremely small. Most are small tree rings and shelterbelts, but hedgerow trees are important landscape features in many parts of the region. The stands of mature trees which shelter many of the older farmsteads provide a prominent and attractive landscape setting.

Estate woodland

The proportion of farm woodlands is closely related to trends in agriculture, in particular to land prices and the availability of subsidies and grants. The expansion of grant- aided planting in the late 1980s (peaking at 1098 ha in 1989-90 across Northern Ireland as a whole) resulted from the substantial increases in grants for planting when the various tax incentives for commercial forestry were removed.

Current forestry grant schemes are designed to provide farmers with the opportunity to diversify their agricultural enterprises by planting. The principal objective is not usually commercial benefit; farm woodlands are also considered important for amenity and wildlife. This type of planting looks set to expand in future and in the longer term could assist in strengthening the wooded character of farmland landscapes.

There are estimated to be 19,000 ha of privately- owned forests and woodlands in Northern Ireland, approximately 12,000 ha of which have been established under the various grant schemes operating since 1927. The total area of new planting each year is quite small, but the proportion of broadleaves is relatively high. The average area planted is approximately 3 ha and there is a general increase in applications from landowners who are not farmers, suggesting that much of the planting is for amenity purposes or for very long-term commercial benefit. Relatively small areas of woodland planting are appropriate in landscape terms, but large scale planting could potentially obscure the minor variations in landscape pattern which contribute to local landscape character.

Trees and hedges, Mournes in background (RT)

3.5.3 Commercial Forestry

Most commercial-scale planting remains within the State sector, managed and operated by the Department of Agriculture, although the steady increase in private sector planting remains a significant force for change. Most such areas were acquired between 1950-80, when there was a rapid expansion in State forestry. However, from about 1985 forestry development has slackened as most of the upland areas, where forestry is considered to be the most appropriate long-term land use, have been planted. The large plantations have had a significant landscape impact in areas such as north Antrim, the Sperrins and West Fermanagh, particularly now that the early, rather geometric planting schemes are reaching maturity.

Approximately 70% of all commercial planting is with Sitka spruce, with broadleaved trees such as oak, ash, birch and alder, and conifers such as pine and larch, planted for landscape and conservation reasons. Sitka is highly productive in a wide range of sites and the timber is very marketable. However, all new planting must contain a minimum of 5% broadleaved species.

A review of trends in new planting and replanting during the past 5 years throughout Northern Ireland suggests that there has been a steady decline in new planting, but that this is counterbalanced by an increase in replanting, and that the restructuring of existing forests will continue to be an important force for change in the immediate future. The design of the new planting schemes reflects an increased sensitivity to landscape, wildlife and heritage issues.

The key document setting out environmental policy in relation to forestry is Afforestation - The DANI Statement on Environmental Policy (8), which sets out assessment procedures and guidelines for the treatment of different types of site and habitat. The advice suggests that there should be a presumption against forestry in important habitats, such as bogs, heather moorland, broadleaved woodland and scrub and species rich grassland. It also recognises the need for sensitive planting in areas of scenic landscape and for protecting archaeological sites. An associated publication, Conservation Guidelines (9) provides further guidance on the design and management of forests to conserve wildlife, landscape character and archaeological sites.

The conservation, educational and recreational value of woodlands is increasingly recognised. All State-owned forests are open to the public and there are additional recreational facilities in selected forest parks. Country Parks, National Trust landscapes and woodlands planted and

Annalong Wood (RT)

managed by the Woodland Trust also provide an informal recreational and educational resource for the public. They promote an appreciation of woodland landscapes and a practical understanding of woodland management and sustainability issues.

3.5.4 Summary of Key Issues

- the restructuring of existing commercial forestry plantations;
- the development of small (grant-aided) farm woodlands by farmers and other landowners for amenity as well as commercial benefit;
- the promotion of State forests as an educational and recreational resource; and
- increasing demand for community woodlands on the perimeter of urban areas.

3.5.5 Broad Landscape Guidance for Forestry and Woodlands

- Conservation, restoration and management of semi-natural woodlands will maintain the diversity of landscape features and nature conservation interest; estate woodlands, including ornamental species, can make an important contribution to local landscape character.
- A diverse mix of species (appropriate to the site), including broadleaved woodlands, adds visual interest and reflects more natural woodland patterns; however in a very simple landscape type a woodland with a more limited range of species may be accommodated more readily.
- Irregularly shaped felling appears more natural in the landscape, but woodland shapes should reflect those of the natural landform.
- Recognising and responding to the relationship between woodlands and open space is fundamental to enhancing landscape character.

Florencecourt Estate Gardens (RT)

3.6 TOURISM AND RECREATION

Tourism is widely recognised to be an important but under-developed resource in Northern Ireland generally. There will be much encouragement to expand the tourist economy and to provide new employment in the coming years. Promotion is largely led by the Northern Ireland Tourist Board but local councils have been increasingly active. The principal scenic landscapes include Strangford Lough, the Mournes, the Glens of Antrim, the Causeway Coast, and the Fermanagh Lakeland. Other areas such as Armagh, the Sperrins and the Foyle area are as yet relatively undeveloped, but may have tourism potential.

Dunluce Castle (RT)

At the heart of the new strategic approach to tourism development are the concepts of sustainability and local identity (10). The distinctive and unspoilt coast, countryside, towns and villages are recognised as key assets to be enhanced and developed. Environmental image and first impression points will be important, while a low key, sustainable approach to the provision of tourism infrastructure will be adopted, with a strong focus on outdoor pursuits. It is proposed that the character of each of the principal holiday areas should be used as a key marketing mechanism. Quality developments by the private sector are to be encouraged, possibly through the use of design competitions.

While in most parts of Northern Ireland existing pressures on the landscape from tourism and recreation development are modest, there are a few exceptions. These include the Strangford Lough, the Causeway Coast, the Mournes and the Fermanagh Lakeland. In all these areas there is pressure to develop second homes, hotels and other accommodation, all of which may

intrude upon the landscape. At Strangford and in the Fermanagh lakes, the principal issues are access to the waterside, and conflicts between the interests of nature conservation and water-based recreation. There are also enormous pressures for marinas and other built development on the lough shores. Any new tourism development in these areas will need to pay particular regard to issues of siting, layout and design as well as wildlife and heritage interest.

Cattle on beach at Whitepark Bay (RT)

At a local scale, opportunities for informal recreational access to the countryside are relatively limited as, in comparison with other parts of the United Kingdom, there are relatively few public rights of way. Exceptions are long distance and themed footpaths such as the Ulster Way and North Down Coast Path, Forest Parks and Forest Service land, Country Parks such as that at Crawfordsburn, National Trust land, and the Lagan Valley Regional Park.

A study entitled Access to the Northern Ireland Countryside (11) recognises that an accessible countryside, with a range of recreational opportunities, is increasingly important to the people of Northern Ireland and fundamental to the development of rural tourism. This study included a market research survey of public perceptions of the Northern Ireland countryside, which showed that 28% of the population go to the countryside for relaxation or enjoyment once a week or more and countryside attractions such as Crawfordsburn Country Park, Cave Hill, and Tollymore Forest Park all have more than 200,000 visitors a year. The study indicates that visiting the countryside is an important, and growing, recreational activity, with potential benefits for the tourist economy as a whole. It also indicates that there are growing demands for more opportunities to walk, ride, cycle and fish, but that there is a need for more access to off-road paths and for more ancillary services and visitor accommodation. Northern Ireland's Countryside Recreation Working Group's strategy (12) sets a proactive agenda. It includes a range of initiatives to encourage partnership and action in developing facilities for sustainable outdoor recreation.

The Northern Ireland Tourist Board (13) recognises the importance of developing the tourism industry in a sustainable way to ensure the regions principal asset, its natural beauty and historic landscapes, are not damaged by tourist activities. Sustainable tourism involves working in harmony with the environment and local communities. It implies that all tourist developments should be carefully integrated with the local landscape, taking account of basic principles of siting and design, as well as the potential wider impacts of traffic, ancillary services, energy use and pollution.

3.6.1 Summary of Key Issues

The landscape resource of Northern Ireland is potentially a key economic asset for tourism and recreation. One of the greatest planning challenges is how to resolve the potential conflict between permitting further tourist development and protecting the resource that people come to experience. Key issues are:

- pressures from water-based recreation and shoreline development on Northern Ireland's coasts, inland loughs and waterways;
- poorly sited second homes and caravan parks in coastal locations such as the Outer Ards coast;
- erosion of footpaths (often by mountain bikers) at key honey-pot sites, such as the Lagan Valley Regional Park and in the Mournes;
- the proliferation of golf courses in scenic locations;
- the impact of water pollution from tourist activities on sensitive shorelines; and
- poor design/siting of picnic sites, parking, signs and interpretation boards.

Rostrevor - a sensitive shoreline

3.6.2 Broad Landscape Guidance for Tourism Developments

- Frequent viewing points and small car parks (with advanced signs) along roads will provide more opportunities for visitors to experience the landscape, reduce congestion and encourage people to leave their cars.
- Development and management of footpaths for short distance (2-3 mile) walks will open up local areas of landscape to a large number of people.
- The use of local materials for tourist developments will help to ensure that they are well-integrated with the surrounding landscape and reflect a strong sense of local identity.
- Allocation and enforcement of specific mountain bike routes will help to reduce erosion on other tracks and footpaths.
- In naturally wooded landscapes, appropriate planting around caravan parks will help reduce their landscape impact while retaining outward views; in more open landscapes, landform screening may be more appropriate. Control of the scale of caravan parks will also help to limit visual impact.
- Waterside and marina developments can be used to enhance and invigorate poor quality urban waterfronts.

Scrabo Country Park

Northern Ireland

Landscape Character Assessment

2000

Key Issues and Recommendations

4

Northern Ireland

Landscape Character Assessment

KEY ISSUES AND RECOMMENDATIONS

4.1 INTRODUCTION

4.1.1 The Value of Ordinary Landscapes

The Northern Ireland Landscape Character Assessment draws attention to the value of landscape diversity and of recognising and reinforcing contrasts in landscape character. The relatively fine grain of the analysis provides an opportunity to focus on local identity and to define the special landscape characteristics, features and patterns which make local landscapes instantly recognisable to those who live and work in them.

The assessment therefore takes account of the full range of landscapes found within Northern Ireland: there is no bias towards those landscapes which are widely recognised for their scenic, nature conservation or heritage value. Instead it gives particular emphasis to the intrinsic value of local places and suggests the need to conserve and enhance the relatively ordinary landscapes which provide the setting to local towns and villages.

4.1.2 Evolving Patterns of Land Use and Landscape Character

The countryside is a dynamic resource; patterns of land use and landscape character have evolved over hundreds of years of cultivation, land management and settlement. The Landscape Character Assessment identifies the key forces for change which are currently most influential and provides guidance to help accommodate change in a positive way. It also indicates those landscapes which are particularly sensitive to change and emphasises the need to consider the capacity of the landscape to accommodate development, new activities and changes of use without loss of local character and identity.

Nevertheless, there is also a strong emphasis on the potential for enhancement and on finding opportunities to strengthen special character and local identity through the design and management of new and existing landscapes, including those which are recognised and protected for their landscape, heritage or wildlife interest.

4.1.3 The Need for a Strategic Approach

The Landscape Character Assessment highlights the wide range of issues to consider in making judgements about the capacity of the landscape to accommodate change, including the overall balance between different land uses, the pattern of settlement and the character and sensitivity of local landscapes. The degree of enclosure provided by landform, the scale and character of forest and woodland cover and the diversity and value of wildlife habitats all contribute to an assessment of landscape sensitivity, although perceptual aspects such as tranquillity and recreational potential are also important considerations. Capacity

to accommodate change will differ from one landscape character area to the next, but each landscape character area has a role to play within the overall 'jigsaw'. Balancing all these issues with other locational and wider socio-economic considerations requires a positive, strategic approach to the release of land for development and to the conservation of sensitive landscapes.

4.1.4 How the Landscape Character Assessment Can be Used

At present, strategic regional plans and policies are under preparation or have been prepared to help 'Shape the Future' of Northern Ireland for the first 25 years of the new Millennium. The Landscape Character Assessment offers a detailed description and analysis of Northern Ireland's landscapes, integrating strategic considerations with detailed landscape briefs for each of the 130 landscape character areas. It will be a vital reference source which feeds into and complements the regional and local policy framework, as well as acting as a reference source in the development control process, helping to develop consistent yet locally appropriate responses to landscape issues.

The assessment will be equally important to the wide range of organisations involved in promoting conservation issues. It adopts a proactive approach, providing advice on creative landscape management, and assisting in the process of targeting funds and resources to areas where they will be most effective. It provides a baseline description of the landscape at a point in time, a common source of information and guidance, and all users should consider their role and decide priorities for action. It may also be used by groups, schools and individuals who have an interest in their local area.

The Landscape Character Assessment Research Papers for each local government district may be used to supplement local planning policies and form a context for discussions with designers and developers. For those involved in conservation, the guidance should provide a strong understanding of the key landscape characteristics and context, and should highlight priorities for action.

Landscape issues relate to a complex web of forces for change. One development pressure will often directly or indirectly affect others and their impacts will be unevenly distributed across the region. It is therefore crucial to adopt an integrated approach - to the broad issues of land use and landscape management, and to the specific issues such as the siting and design of new development. The assessment provides a framework for this integrated approach, establishing principles to guide the decision-making process at a range of scales, from broad landscape management strategies to design briefs and best practice guidelines for individual sites or features.

4.2 Summary of Key Issues and Regional Priorities

At a strategic level, the key issues affecting the landscapes of Northern Ireland are summarised below. Each have been examined in turn, and compliment Section 3 by suggesting broader actions that could be taken at a regional level.

- **The impact of new buildings in the countryside.**
- **The erosion of distinctive rural landscape patterns and features.**
- **The loss of distinctive landscape settings to settlements.**
- **The impact of infrastructure developments and improvements.**
- **Pressures for tourist and recreation developments and the neglect of public open spaces.**
- **Damage to the landscape setting of historic and archaeological features.**
- **Continued threats to semi-natural habitats.**

4.2.1 THE IMPACT OF NEW BUILDINGS IN THE COUNTRYSIDE

In recent years, the increasingly standardised approach to development has led to the homogenisation of both urban and rural landscapes. The Landscape Character Assessment is intended to build an understanding of the striking variations in landscape character across Northern Ireland. It indicates how the design and integration of new buildings, and the management of the countryside resource, can help to conserve landscape diversity and sometimes to bolster its capacity to accommodate development. This requires a proactive approach. Ongoing pressures for new rural development create an urgent need for high standards of siting and design, to reflect local traditions of layout, built form and construction materials.

Recent development is generally concentrated along roads; it is most intrusive when it forms a continuous ribbon, impinging on views to the surrounding landscape and creating an impression of rural suburbanisation. Ribbon development has a significant impact in many parts of the region, particularly on the fringes of settlements, in scenic coastal areas and along lough shores, such as Lough Neagh. However, isolated buildings in the open countryside may also be visually intrusive as they are often sited prominently, to maximise views rather than integrate with their surroundings.

Traditionally, rural farmsteads and cottages were sited (often with narrow lane access) in sheltered locations, on the mid-slope of drumlins, at the foot of a ridge or within a natural 'fold' in the local landform. Most are associated with stands of

New houses in Foyle Valley Corridor

mature trees which help to integrate the buildings within the wider landscape. By contrast, many roads follow local ridges, making any roadside development particularly prominent; it has the highest visual impact when houses appear on the skyline in areas where the pattern of hedgerows and trees are depleted. The problem is particularly acute in areas with small-scale, relatively linear patterns of development, such as in the Maze area of the Lagan Valley, the coastal road along the Ards Peninsula and parts of the Sperrin foothills. In situations where the local settlement pattern has become confused, it will be important to establish the most appropriate settlement pattern for the future, taking account of socio-economic factors. Landscape buffer areas may be an appropriate measure to prevent coalescence between adjacent settlements.

The impact of new buildings in the countryside is heightened by generally poor standards of siting and design. Houses typically front directly onto the road, with 'suburban' style gateposts, fencing and boundary walls, which are insensitive or unrelated to the patterns of adjacent hedgerows and fields. Many houses appear oversized, as they are linked to outbuildings such as double garages, greenhouses etc which may be sited in a line, fronting the road. The effect is exacerbated by ornamental garden plants, which seem discordant in juxtaposition with local native species, and by the use of imported and often garish building materials.

Priorities for Action

- Seek to ensure, through the development control process, that new development in rural areas takes greater account of variations in landscape character and sensitivity.
- Encourage the use of traditional layouts in order to reduce the apparent scale of buildings in rural settings.
- Consider the preparation of good practice guidance for planners and developers to help raise the quality of developments. Such guidance could include advice on the use of local materials, building patterns and styles in different parts of the region and might be related to the provision of new Planning Policy Statments (PPSs) and updated development plans.
- Consider how the delineation of Green Belts and Countryside Policy Areas can be adapted to reflect variations in landscape character and sensitivity rather than relating to a boundary line which has little meaning on the ground.

4.2.2 THE EROSION OF DISTINCTIVE RURAL LANDSCAPE PATTERNS AND FEATURES

The Landscape Character Assessment defines and describes important variations in landscape character and diversity across Northern Ireland. The assessment identifies the distinctive rural landscape patterns and features which contribute to scenic quality at both local and regional scales. Prominent examples such as particular patterns of fields and woodlands are of regional importance, but more subtle variations in landscape pattern also merit recognition and conservation. Examples are the contrast in enclosure and field pattern between the floodplain of the Ravarnet River and its surrounding drumlins; and between the ladder field pattern of small-holdings on the lower slopes of the Antrim glens and the more open moorland summits. The conservation of linear features, such as river corridors, wooded glens and lough shore fringes and disused railway lines is particularly important as they have a relatively wide visual impact. Traditional rural buildings also make a key contribution to local landscape character.

Colin Glen, an important linear feature

Key Issues and Recommendations

Distinctive rural landscape patterns and features such as eskers, basalt pillars and stone walls are uniquely site-specific as they are directly related to variations in the underlying bedrock and to physiographic features. Most have evolved over the years from traditional patterns of farming, forestry and settlement, which have in turn been influenced by physical landscape factors.

Since many of the region's distinctive landscape patterns and features are historic remnants, they are particularly vulnerable to landscape change resulting from development, land management practices or simply neglect. The assessment provides visual evidence of the ongoing erosion of distinctive landscape patterns and features, including field patterns, hedgerows, gates, gateposts and raths. It is occurring in a piecemeal way, but the effects are cumulative. The detailed landscape descriptions, in the Research papers (1) for each local government district provide examples and guidance on how to tackle the problem.

The landscape assessment also defines potential *Areas of Scenic Quality*. These are landscapes of regional or local importance for their scenic quality, that is they are important landscape resources in their own right, regardless of location or setting. They are characterised by visually pleasing patterns or combinations of landscape elements; and by their generally unspoilt character, free from major visual intrusion. In addition, they may include significant sites or features of nature conservation, historic or cultural importance. Often, they are visually prominent landscapes such as ridgetops, scarp slopes above settlements, and lough shores; and therefore many of these areas are particularly sensitive to change. The Areas of Scenic Quality identified are considered to be of regional significance; they represent a second tier (below AONBs) in the hierarchy of landscape classifications.

Mill Bay, Rathlin Island - unspoilt and part of Antrim Coast and Glens AONB (RT)

The landscape assessment defines the following 15 Areas of Scenic Quality:

Clogher Valley
Dungannon Drumlins & Hills
Blackwater Valley
Bessy Bell
Sperrin Foothills
Lower Bann Estuary
Slieve Gullion Granite Bench
Lough Neagh Fringe
Islandmagee
Carrickfergus Escarpment
Carnmoney Hill
Belfast Basalt Escarpment
Craigantlet Escarpment
Castlereagh Slopes
Magheraknock Loughs
Colebrook Estate

The *Areas of Scenic Quality* are particularly vulnerable to change, but the small-scale distinctive landscape features and patterns highlighted in the Landscape Character Assessment should also be a priority for conservation and management.

Priorities for Action

- Recognise the importance of conserving distinctive landscape features and patterns throughout the region and take the Landscape Character Assessment into account in the preparation of Development Plans.
- Give particular consideration in Development Plans to the conservation of Areas of Scenic Quality, as well as AONBs and Countryside Policy Areas.
- Give consideration to the preparation of landscape management plans to ensure the conservation and enhancement of key landscape features, such as the Belfast Hills, the Foyle Valley river corridor and the shores of Strangford Lough.
- Encourage programmes to rehabilitate the region's stock of traditional buildings as part of any new strategies for tourism development, particularly in the west of the region.

Church with surrounding trees add to village setting

4.2.3 THE LOSS OF DISTINCTIVE LANDSCAPE SETTINGS TO SETTLEMENTS

The landscape setting of settlements is particularly important in Northern Ireland, where so many towns are relatively small and the character of the surrounding countryside has a strong influence on settlement character. This relationship between landscape and settlement patterns is emphasised further by the striking diversity of landscape character within the region, and by the fact that many settlements occur on the boundary of one type of landscape and the next.

Most settlements derive their sense of place and identity from distinctive views, local landmarks or landscape features. However, recent expansion has often ignored these distinctive landscape settings, resulting in settlements which are now fringed by housing estates and approached through a ribbon of suburbia. The extension of housing developments high onto prominent local ridges, hills or drumlins can be particularly damaging and has already had a detrimental influence on the landscape setting of settlements such as Downpatrick, Newtownards and parts of Belfast.

Large housing estates on the fringes of settlements tend to cut villages and towns off from their landscape setting, blocking local views and footpaths and destroying the often subtle relationship between local field patterns and the pattern of streets and buildings. In some cases, these field patterns are themselves important heritage features. The problem is particularly acute in settlements which are largely surrounded by housing estates, such as Banbridge and Ballyclare, as important contrasts in landscape character on the fringes of the settlement are blurred. The bypasses around larger towns, such as Ballymena, Bangor and Omagh also tend to form a divisive barrier, cutting off the town from its landscape setting.

Priorities for Action

- Take account of the *Landscape Character Assessment* in the review of Development Plans and in the strategic planning process for Northern Ireland as a whole.
- Give regard to landscape buffers, distinctive landscape settings and prominent ridge lines in the Development Plan and Development Control processes.
- Recognise in Development Plans the distinctive landscape, habitat and heritage features which have influenced the growth of each settlement and which should enable future expansion without loss of identity.
- Ensure that new development is associated with landscape enhancement schemes, particularly at key locations such as along principal approach roads.

Port Braddan, a unique setting (RT)

4.2.4 THE IMPACT OF INFRASTRUCTURE DEVELOPMENTS AND IMPROVEMENTS

Infrastructure developments tend to have a significant impact on the landscape as they are generally linear in form and uniform in character, but they may cut across a number of different landscape character areas. The impact of roads is particularly significant as they often have a standardized effect, creating a corridor of predictable landscape across broad areas of the countryside. In addition, roads have an important influence on the way in which we perceive the landscape. The quality of views from the principal roads is therefore particularly important.

It is not just new roads which have a significant impact; piecemeal, relatively minor road improvements, such as widening and straightening and the development of new access and bypass links often destroy local roadside features and have a cumulative, negative impact on landscape character. Visual continuity along roadsides is often eroded by ribbon roadside development, lighting, kerbs, signage, excessive white lines and lack of roadside definition, particularly at night. The most common problem is the loss of hedgerows to allow for visibility splays at cross-road junctions on small country roads. In these situations, the hedgerows are generally replaced by post and wire fencing and the stands of mature trees, which so often form distinctive local features at cross roads, are often lost.

Communication masts, overhead lines, wind turbines and electricity pylons are prominent in some of the more sensitive upland and ridgetop landscapes of Northern Ireland. Even relatively small developments may have a significant visual impact; they tend to diminish the apparent scale of the landform and detract from the unspoilt, remote character of upland summits. Overhead power lines may be especially intrusive in expansive open moorland landscapes or in the vicinity of power stations, where a number of lines converge, for instance on the approaches to the Ballylumford power station on the north west tip of Island Magee.

Priorities for Action

- Integrate new road developments with their surrounding landscape context by careful alignment and landscape design; the aim should be to minimise fragmentation of local landscape patterns and to reflect the changing landscape character along the route.
- Environmental impact assessments for major infrastructure projects should include detailed consideration of landscape character; opportunities and constraints should be a fundamental part of the landscape and visual impact assessment.
- Ensure that minor road improvements are associated with reinstatement of local landscape elements, particularly hedgerows or traditional stone walls.

A distinctive landscape feature at Crom, Upper Lough Erne (RT)

4.2.5 PRESSURES FOR TOURIST AND RECREATION DEVELOPMENTS AND THE NEGLECT OF PUBLIC OPEN SPACES

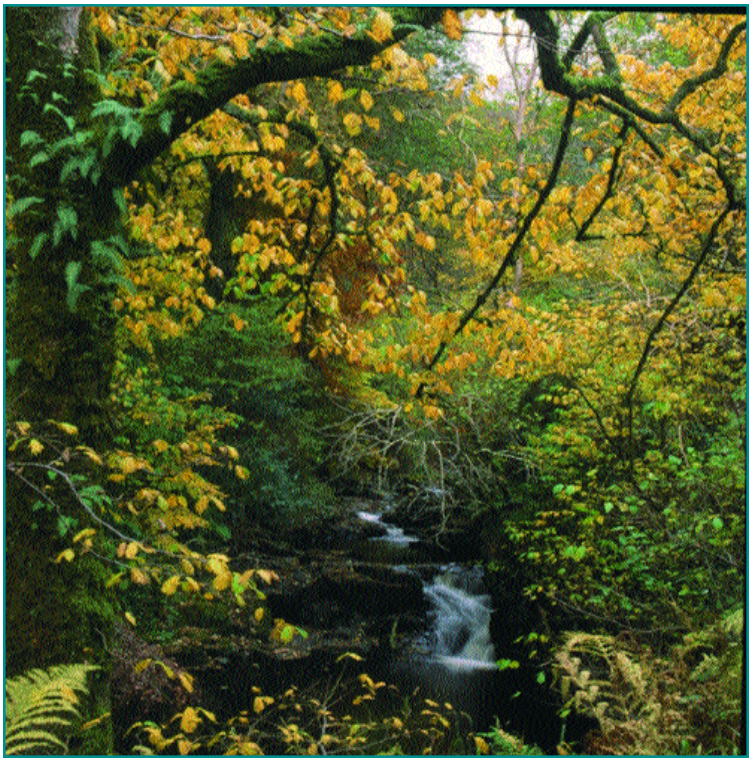
Tourist developments tend to be concentrated in some of the most sensitive and scenic locations in Northern Ireland and it is therefore important that their management is carefully monitored and that future developments are undertaken with great care to ensure that they are well integrated with their surroundings. Even small scale development can be detrimental if sited badly and without specific reference to local identity and the use of local materials. Equally, overuse of distinctive landscape features can destroy their enjoyment and create pressure on local environmental assets.

Pressures for large tourist developments, such as caravan parks, golf courses and hotels are increasing and there is much demand for the conversion of country houses into hotel/conference centres. Such developments generate considerable infrastructure and traffic and require very careful siting and design. Car parks and picnic sites, especially along coasts, tend to have a bland, uniform character, with little relationship to the local landscape. Instead in most areas, it would be preferable to have small-scale sites, discretely hidden and each specifically designed to reflect its local setting and functions. The larger, multi-purpose recreation developments on the shores of Lough Neagh and golf courses on the fringes of settlements, such as those at Coleraine and Whitehead, are also relatively predictable. All would benefit from more careful and specific use of local materials and from a more imaginative layout.

Public open spaces and parks within and on the fringes of settlements are often bland and unrelated to local landscape character. There is enormous potential to enhance the local landscape in areas such as Colin Glen, Belfast and to improve the quality of life for local residents with cycleways, walks and nature trails.

Priorities for Action

- Upgrade car parks and visitor facilities throughout Northern Ireland showing sensitivity to local habitat, heritage and landscape interests.
- Take forward the potential for new, high quality country and regional parks, to improve access to the countryside for urban populations, for instance in the Belfast, Holywood and Castlereagh Hills and at Carnmoney Hill in Newtownabbey. There may also be opportunities to create new country parks in areas of degraded land.
- Consider options for improving access to the wider countryside by developing new cycleway/footpath links, for example along river corridors such as the Lower Bann and along scenic lough shores. There may also be scope to develop new public rights of way along disused railway lines and Forest Service access routes.
- Give priority to the design and enhancement of bland public open spaces and car parks which are the visual focus in settlements for residents and visitors alike.



Waterfall in Glenarriff Glen (RT)

Rough Fort, Moira (RT)

4.2.6 DAMAGE TO THE LANDSCAPE SETTING OF HISTORIC AND ARCHAEOLOGICAL FEATURES

The wealth of historical and archaeological features throughout Northern Ireland is a unique and priceless aspect of its landscape heritage; many are also important and well-known landmarks. However, many are threatened by neglect, over-use, poorly managed access and by ongoing landscape change, particularly from agricultural intensification, infrastructure and built development.

There is a need for careful conservation of the features themselves and, wherever possible, their wider landscape setting. This may most easily be accomplished as part of a careful process of site appraisal and design. The presence of listed buildings and heritage features on a site will often form the basis for a more distinctive design, contributing to local identity and to the conservation and enhancement of landscape character.

Priorities for Action

- Recognise and promote the importance of the wider landscape setting of historic landscape features, taking account of local views and historic or visual relationships.
- Indicate significant historic landscape features on Development Plans, so that they can be conserved and enhanced through the Development Control process.
- Encourage a pro-active approach to the ongoing design and management of historic sites, buildings, designed landscapes and mills (valued for their industrial archaeology) taking account of relevant historic research and precedents, but incorporating fresh ideas and techniques wherever appropriate. Successful restoration projects such as the courtyard stables at Belleisle, Fermanagh provide a model for other sites.

Purple Hair-Streak butterfly, Crom (RT)

4.2.7 CONTINUED THREATSTO SEMI-NATURAL HABITATS

The conservation and management of semi-natural habitats, such as heather moorland, long established broadleaved woodland, sand dunes, rivers, mudflats and marshes is vitally important to maintain and enhance natural biodiversity. Some quarries, eskers and valley landscapes are also important for their earth science interest.

Northern Ireland contains many national and internationally important sites, such as the wetlands on the fringes of Lough Neagh and Strangford Lough, the sand dunes at Murlough, the peatland habitats of Brackagh Bog on the floodplain of the Upper Bann, coastal headlands such as Ballyquintin Point and Magilligan, and the limestone pavements of Marlbank in Fermanagh. Such sites also make an important visual contribution to the landscape, but because they are often of little direct economic value, they are under constant pressure from all aspects of landscape change and particularly from tourism, quarrying, agricultural intensification and all forms of built development.

Priorities for Action

- Indicate all sites of nature conservation importance (international, national and local) on Development Plans so that they can be conserved and enhanced through the development control process.
- Encourage partnerships between government bodies, landowners, District Councils, community groups, schools, conservation volunteers, the Ulster Wildlife Trust, the RSPB etc. in the proactive management and enhancement of sites.
- Seek to build on the educational potential of sites of nature conservation potential, encouraging visitors and informal recreation at sites where small numbers of visitors will not damage the conservation resource.

4.3 A VALUABLE HERITAGE

This landscape assessment is intended to lay the foundation for a common framework for policies and action on the landscape by all concerned. It may be used as a tool for creative conservation and landscape enhancement as well as a basis for seeking opportunities for robust and attractive new development and for providing guidance on siting and design.

The landscapes of Northern Ireland are a unique and valuable asset. They will be increasingly important to the local economy of rural towns and villages which rely on meeting the demands and expectations of visitors and investors; they are also crucial to sustaining the special quality of life of the people who live and work in the region. Yet the landscape represents a vulnerable resource, faced with mounting pressures for change. If left unguided and unchecked these pressures will gradually erode the landscape's special qualities. Action now will enable landscape change to be positive, creative and effective.

Brackagh Moss, Portadown (RT)

Northern Ireland

Landscape Character Assessment

Northern Ireland

Landscape Character Assessment

2000

Maps Illustrations and References

5

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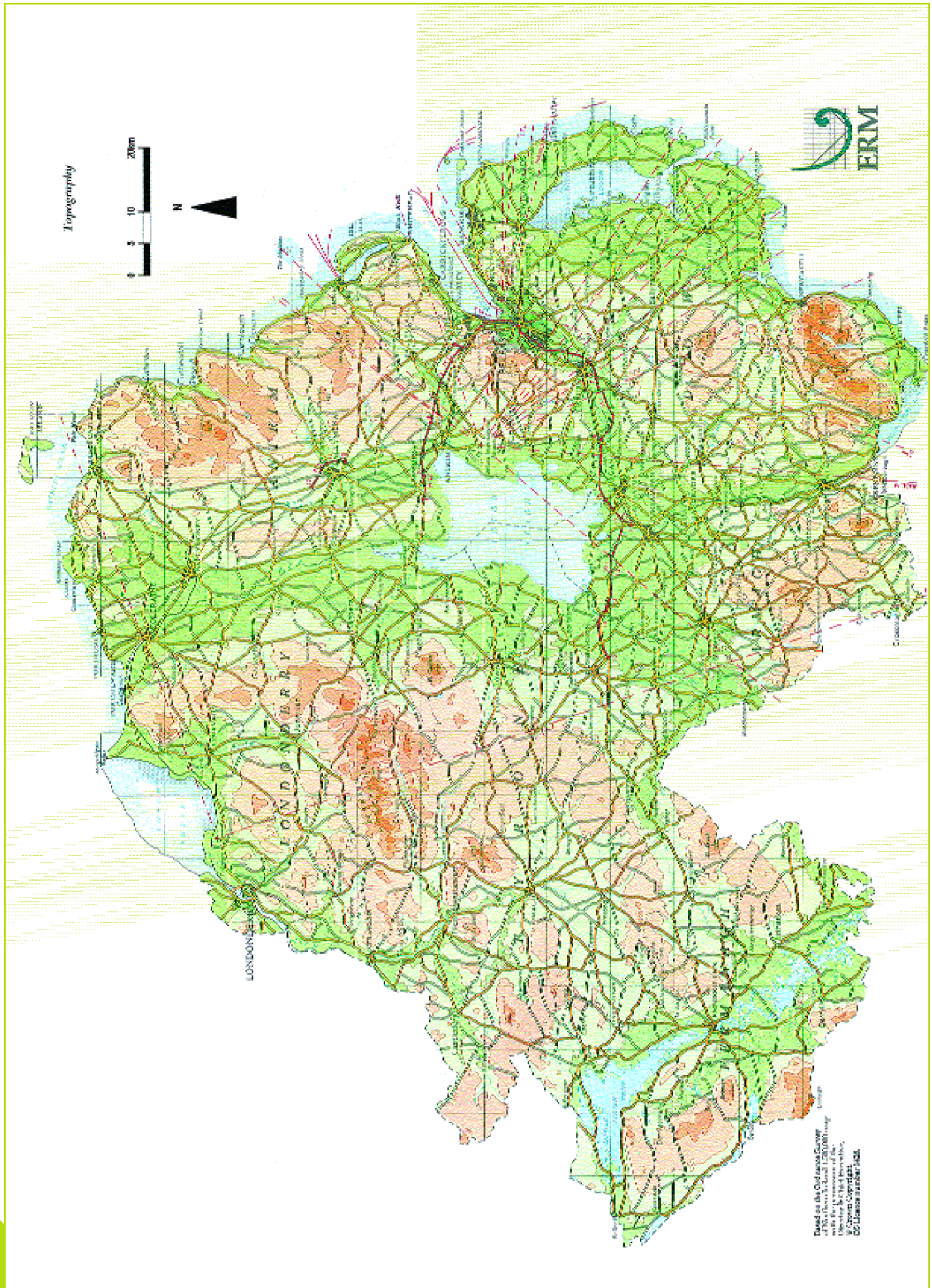
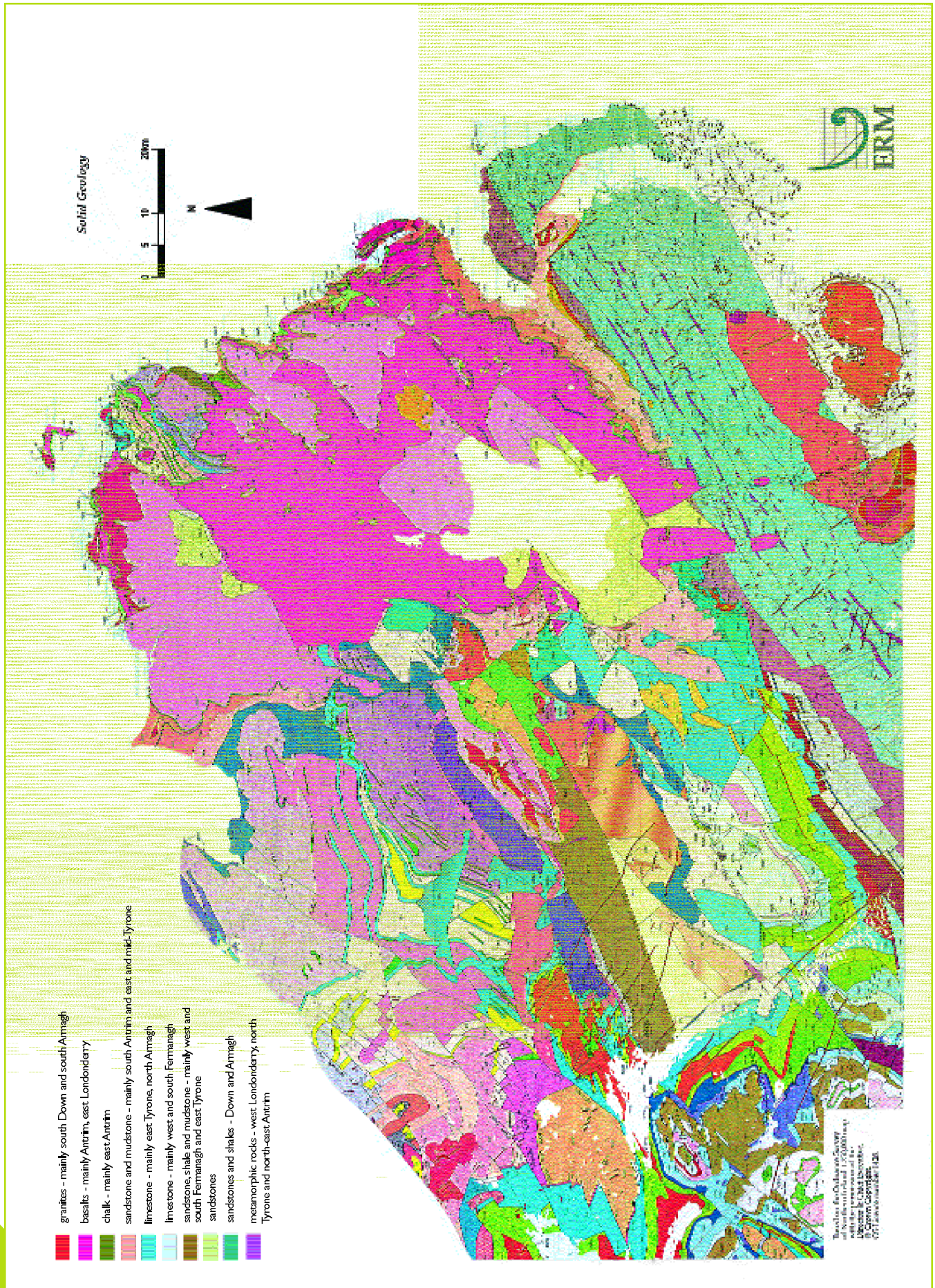
Topography



Solid Geology



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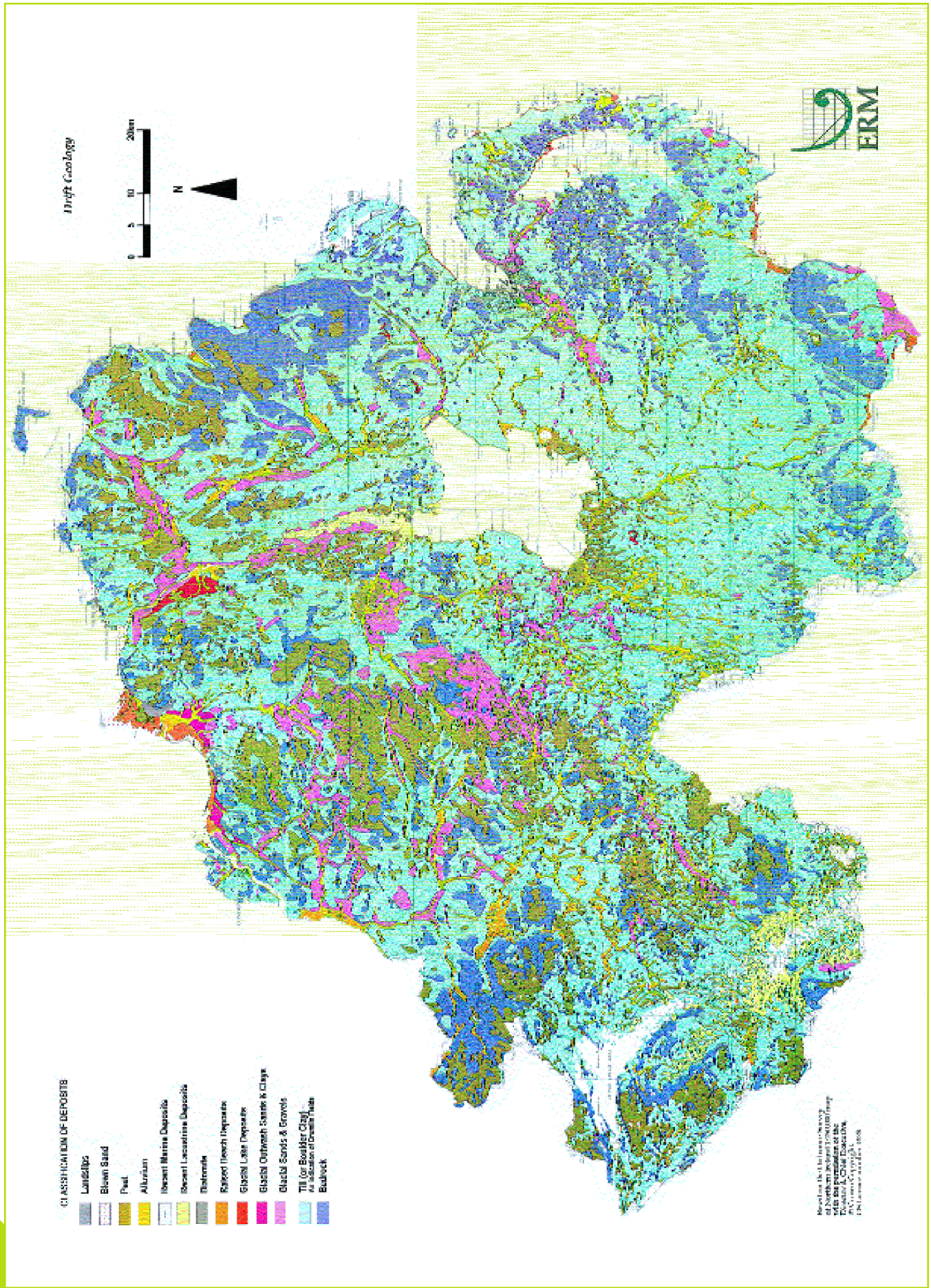
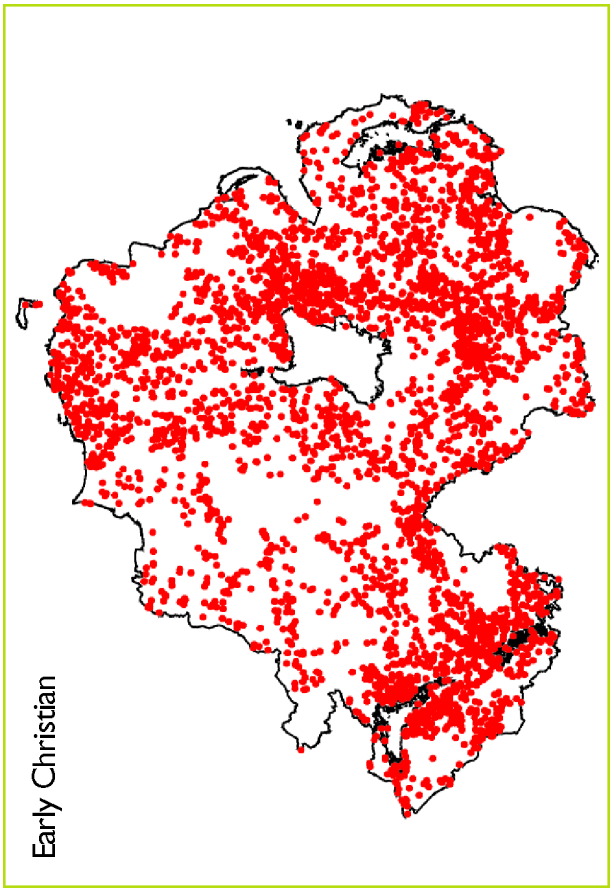
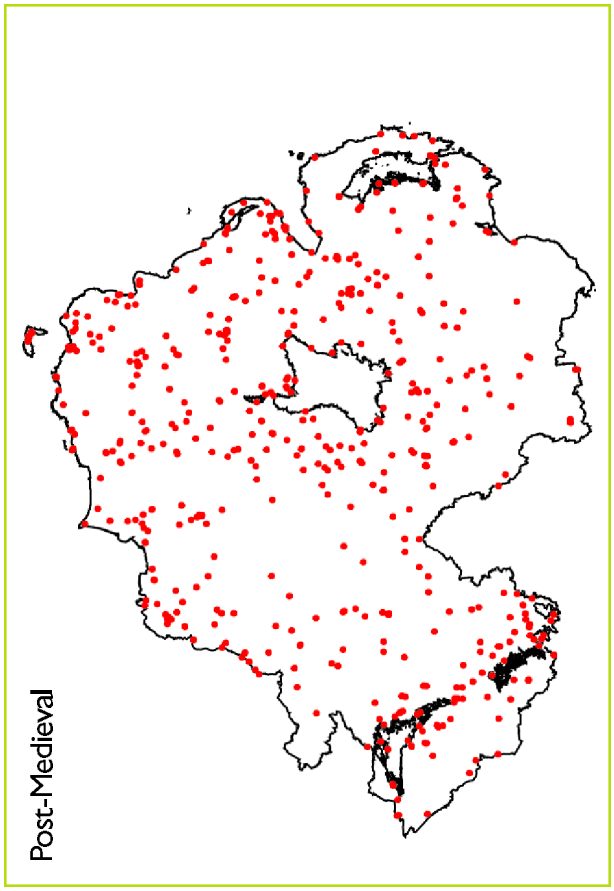
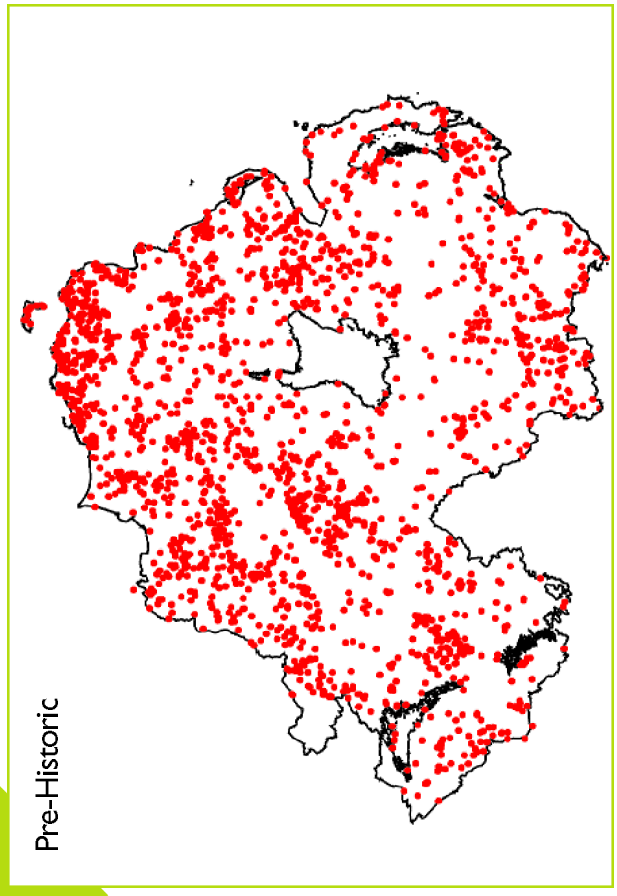



Early Christian


Post-Medieval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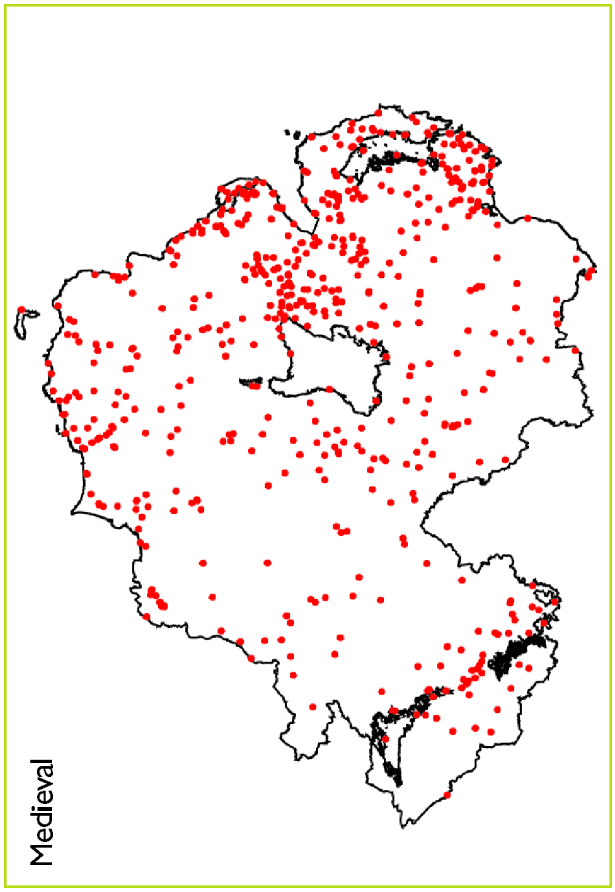
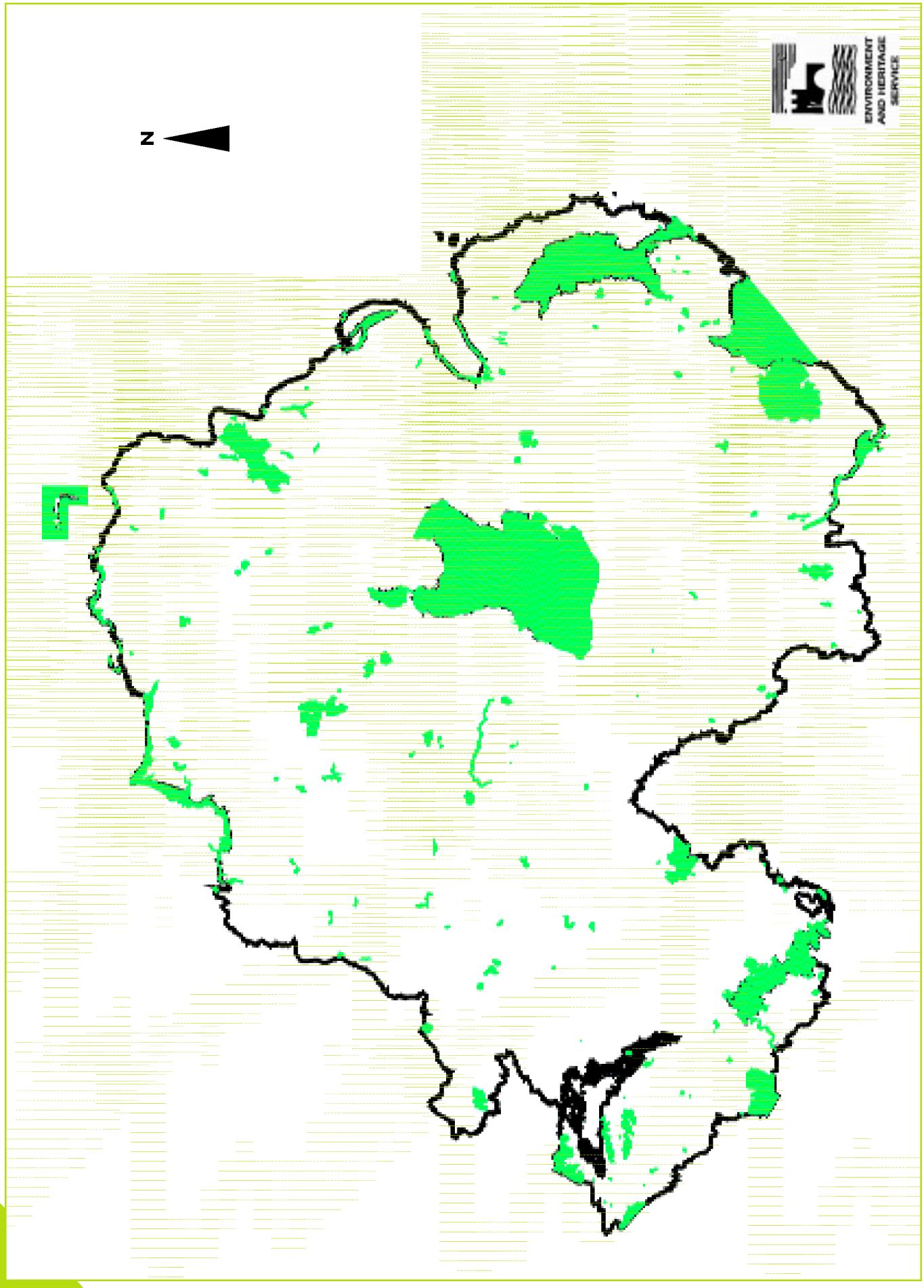

Medieval

Designated natural conservation sites



Special Landscapes

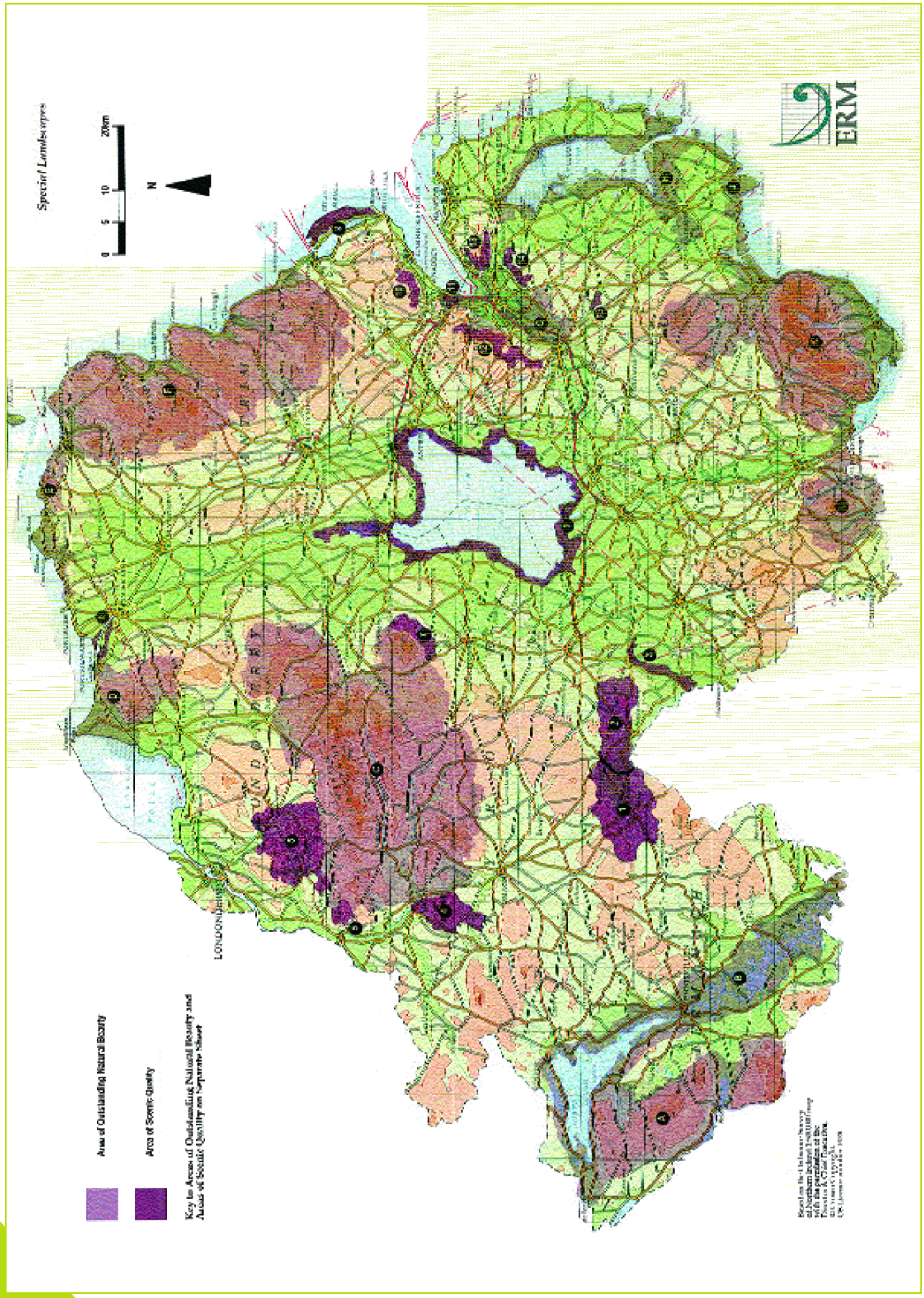
Areas of Outstanding Natural Beauty

A	Fermanagh Caveland (proposed)
B	Erne Lakeland (proposed)
C	Sperrin
D	North Derry
E	Causeway Coast
F	Antrim Coast and Glens
G	Lagan Valley
H	Strangford Lough
J	Lecale Coast
K	Mourne
L	Ring of Gullion

Areas of Scenic Quality

1	Clogher Valley
2	Dungannon Drumlins and Hills
3	Blackwater Valley
4	Bessy Bell
5	Sperrin Foothills
6	Lower Bann Estuary
7	Slieve Gallion Granite Bench
8	Lough Neagh Fringe
9	Island Magee
10	Carrickfergus Escarpment
11	Carnmoney Hill
12	Belfast Basalt Escarpment
13	Craigantlet Escarpment
14	Castlereagh Slopes
15	Magheraknock Loughs
16	Colebrook Estate

Special Landscapes



Landscape Character Areas

No. NILCA NAME

1. The Garrison Lowlands
2. Lower Lough Erne
3. Croagh and Garvary River
4. The Lough Navar and Ballintempo Uplands
5. The Lough Macnean Valley
6. The Knockmore Scarpland
7. The Sillees Valley
8. The Arney Lowlands
9. Cuilcagh and Marlbank
10. Slieve Russel,Derrylin and Kinawley
11. Upper Lough Erne
12. Newtownbutler and Rosslea Lowlands
13. Enniskillen
14. Lough Bradan
15. Irvinestown Farmland
16. Brougher Mountain
17. Clogher Valley Lowlands
18. Slieve Beagh
19. Killeter Uplands
20. Derg Valley
21. Fairy Water Valley
22. Omagh Farmland
23. Camowen Valley
24. South Sperrin
25. Beaghmore Moors and Marsh
26. Bessy Bell and Gortin
27. Foyle Valley
28. Glenelly Valley
29. Sperrin Mountains
30. Sperrin Foothills
31. Burngibbagh and Drumahoe
32. Derry Slopes
33. Lough Foyle Alluvial Plain
34. Loughermore Hills
35. Magilligan Lowlands
36. Binevenagh
37. Roe Basin
38. Eastern Binevenagh Slopes
39. Glenshane Slopes
40. Upper Moyola Valley
41. Slieve Gallion
42. Cookstown Farmlands
43. Carrickmore Hills
44. Slievemore
45. Dungannon Drumlins and Hills
46. Blackwater Valley
47. Loughgall Orchard Belt
48. West Lough Neagh Shores
49. Magherafelt Farmland
50. Moyola Floodplain
51. Garvagh Farmland
52. Lower Bann Valley
53. Lower Bann Floodplain
54. Coleraine Farmland
55. Garry Bog
56. Dervock Farmlands
57. Causeway Coast and Rathlin Island
58. Long Mountain Ridge
59. Cullybackey and Clogh Mills Drumlins
60. River Main Valley
61. North Lough Neagh Shores
62. East Lough Neagh Points
63. Portmore Lough Fringe
64. Lough Neagh Peatlands
65. Upper Bann Floodplain
66. Armagh Drumlins
67. Armagh/Banbridge Hills
68. Carrigatuke Hills
69. Newry Basin
70. Crossmaglen Drumlins and Loughs
71. Ring of Gullion
72. Slieve Roosley
73. Kilkeel Coast
74. The Kingdom of Mourne
75. Mourne Mountains
76. Ballyroney Basin
77. Iveagh Slopes
78. North Banbridge Hills
79. Craigavon Plateau
80. Donaghcloney Valley
81. Kilwarlin Plateau
82. Dromore Lowlands
83. Lower Slieve Croob Foothills
84. Mourne Foothills
85. Newcastle Valleys
86. Tyrella Coastal Dunes
87. Slieve Croob Summits
88. Craggy Dromara Uplands
89. Hillsborough Slopes
90. Ravarnet Valley
91. Quoile Valley Lowlands
92. Ballyquintin and Lecale Coast
93. Portaferry and North Lecale
94. Strangford Drumlins and Islands
95. Ballygowan Drumlins
96. Castlereagh Plateau
97. Belfast/Lisburn
98. Carrickfergus Upland Pastures
99. Outer Ards Coast
100. Ards Farmlands and Estates
101. Scrabo
102. Holywood Hills
103. Bangor Coastline
104. Craigantlet Escarpment
105. Castlereagh Slopes
106. Lagan Parkland
107. Hummocky Lagan Lowlands
108. Broad Lagan Valley
109. Upper Ballinderry Plateau
110. Derrykilultagh
111. Divis Summits
112. Belfast Basalt Escarpment
113. Expansive Crumlin Farmland
114. Three and Six Mile Water Valleys
115. Tardree and Six Mile Water Slopes
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119. Ballycastle Glens
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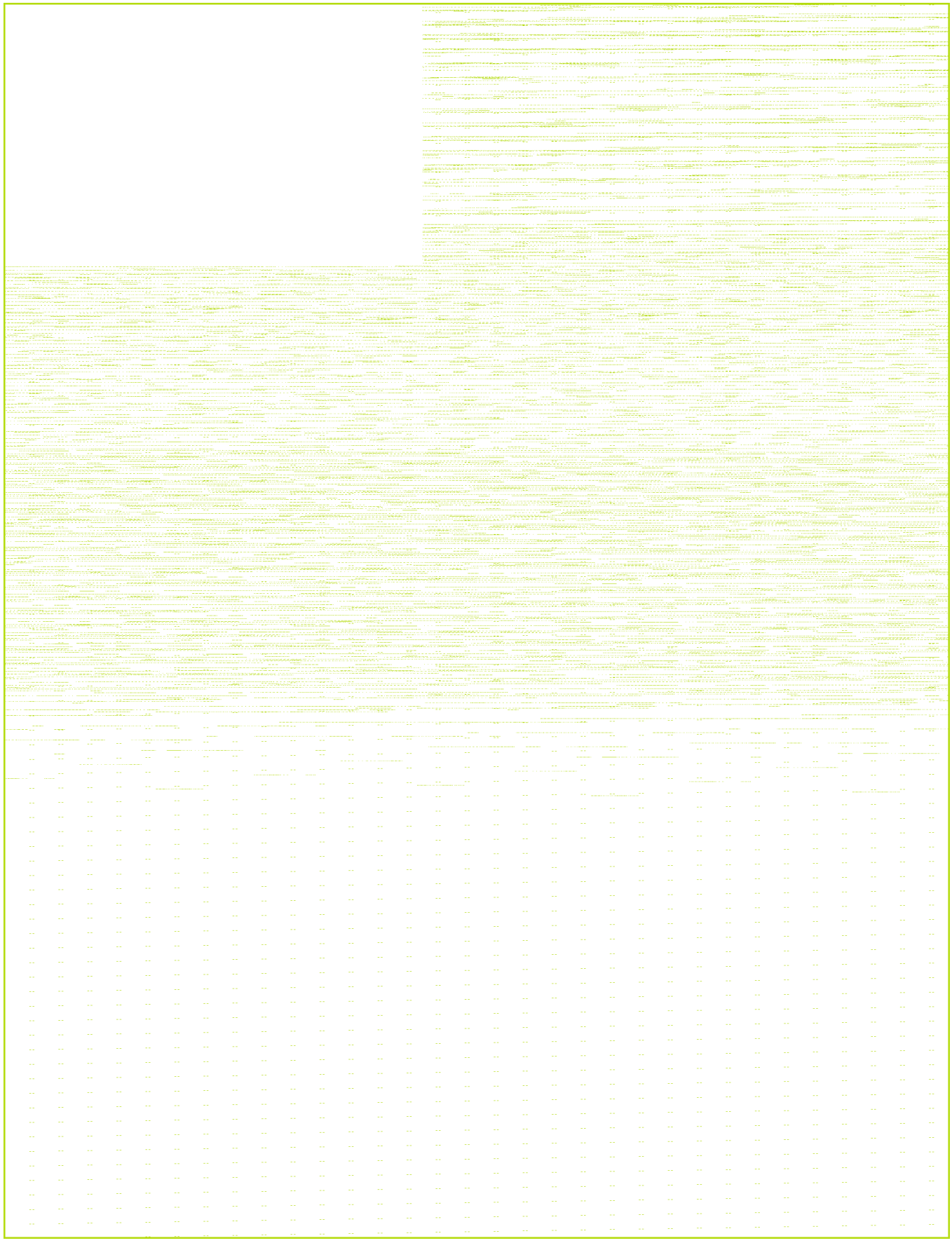
125. Tardree Upland Pastures
126. Larne Coast
127. Larne Ridgeland
128. Island Magee
129. Carrickfergus Shoreline
130. Carrickfergus Farmed Escarpment



Summary of the Geological History of Northern Ireland

PERIOD	AGE (millions of years)	MAIN NORTHERN IRISH ROCK TYPES	GEOLOGICAL ENVIRONMENT	EVOLUTION OF PLANT AND ANIMAL LIFE
QUATERNARY	1.6	Blown sand,peat Sand,gravel and boulder clay *The rocks of tomorrow!*	Beach,lake, river and peat bogs Glacial deposits from glaciers and ice-caps	Modern humans. Woolly mammoth.
TERTIARY	65	Clay, lignite Basalt lava	Marsh and lake Volcanic eruptions	Earliest Hominids. Widespread mammals. First primitive apes. Main bird groups present.
CRETACEOUS	142	White Limestone Sandstone	Marine conditions with accumulating planktonic material. Marine sediments	Extinction of dinosaurs, plesiosaurs and ammonites. Early flowering plants.
JURASSIC	206	Mudstone with minor limestone	Marine conditions	Dinosaurs dominant on land,plesiosaurs in oceans and pterosaurs in air. Early mammals.
TRIAS	248	Red mudstone with salt Sandstone	Coastal lagoons Shallow water in continental desert	First dinosaurs and large marine reptiles.First flies.Ammonites common.
PERMIAN	290	Limestone and sandstone	Desert conditions with occasional marine influence	Reptiles spread on land. Insects spread. Conifers common.
CARBONIFEROUS	354	Sandstone and minor coal Limestone	Coastal lagoons Marine with coral reefs	Amphibians spread. Shark-like fish. Early trees and reptiles appear.
DEVONIAN	417	Sandstone, mudstone and conglomerate. Some volcanic activity.	Continental desert with periodic floods; major mountain chain	First amphibians. Fern-like plants on land.
SILURIAN	443	Shale and sandstone	Mainly deep marine conditions	First land plants. Armoured,jawless, fish common.
ORDOVICIAN	495		Occasional volcanic activity	Early fish appear. Graptolites, trilobites and brachiopods common in oceans.
CAMBRIAN	545	Not present		Dominance of trilobites in seas and development of early shelled forms.
PRECAMBRIAN	4,600	Metamorphic rocks	Sedimentary and some igneous rocks changed by later metamorphism	Early multi-celled animals. Early bacteria and algae

Summary of the geological history of Northern Ireland

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Environment and Heritage Research Research Development Series

RESEARCH PAPER	*NUMBER*
Derry/Londonderry	*99/1*
Limavady	*99/2*
Coleraine	*99/3*
Moyle	*99/4*
Ballymoney	*99/5*
Ballymena	*99/6*
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Belfast/Castlereagh/Newtownabbey	*99/24-26*

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Note:
Copies of the EHS Research Papers (one for each of the 26 local government districts) which complement this Report and further details of the Project may be obtained from:

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Commonwealth House
35 Castle Street
Belfast BT1 1GU
United Kingdom