

Louth County Council

LANDSCAPE CHARACTER ASSESSMENT



DECEMBER 2002

Landscape Character Assessment

Background

Earlier Development Plans designated some areas of the County with the perception that landscapes are romantic in character. Definitions like, sublime, outstanding, high scenic quality etc have been used to categorise particular areas in this and other counties. In 1977, the then Foras Forbartha published an inventory of outstanding landscapes in Ireland. In that document three such areas were identified in Louth:

- (a) Carlingford Mountains – Flurrybridge to Grange Cross
- (b) Clogherhead – from the village to the port
- (c) Boyne Valley – a small part of which is in County Louth.

Outside of these areas the general description would have been rural or farmland. In the publication “Landscape and Landscape assessment – Consultation Draft Guidelines for Planning Authorities” published by the D.O.E. in June 2000, a new format is proposed. The guidelines suggest that the proposed method of assessment allows for a much more proactive approach to Landscape. The new policy shall have regard to the following:

- The National Sustainable Development Strategy.
- Regional Planning Policies (which to date have been economic in nature). Louth is in the Border Region, along with Monaghan, Cavan, Leitrim, Sligo and Donegal.
- Areas of Development potential (existing towns and Development Centres).
- Strategies for newer forms of development, such as wind farms and telecommunications masts.
- Capacity of the landscape to sustain development.
- New roads and housing.
- Forestry.
- New agri-environmental schemes.
- National Spatial Strategy.

It is proposed that the County should be divided into a number of landscape character areas. It is not proposed that any landscape policy should apply to existing towns, villages and designated Development Centres but may impact on the edges of those urban /village areas.

Landscape

Landscape has been described as “all that is visible when one looks across an area of land”. A view from a hilltop across a valley when compared with another view from the floor of the same valley across to the same hilltop can be very different and evoke different values.

Some definitions

Landscape Character

Is defined as a distinct and recognisable pattern of elements that occur consistently in a particular type of landscape and how these are perceived by people. It creates the particular sense of place of different areas of the landscape. It is by definition a value free process.

Landscape Character Types

Are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas of the county but where they occur they share broadly similar conditions of geology, topography, drainage, vegetation, historical land use, etc. e.g. Drumlin areas.

Landscape Character Areas

Are single unique areas, which are geographical areas of a particular landscape type or types.

Physical units

Are made up of two types; landform and landcover.

Landform is concerned with the spatial formal arrangement of landscape components as a natural product of geological and geomorphological, water drainage areas etc. It is sometimes described as the ‘skeleton’ of the landscape.

Landcover is composed of the detailed constituent parts of the surface, which includes soil types and vegetation. Landcover provides the ‘flesh’ to the landform skeleton.

Visual units

Are described as areas defined by spatial enclosure of pattern which are determined by landform and landcover e.g. valley enclosure. The criteria to be used should include scale, form, pattern complexity, enclosure, visual dynamic and composition e.g. Glenmore Valley.

Image Unit

These units are few and would usually include a feature providing a dominant element in the landscape, which would create a visual focus from a field of visual influence. The image of that feature, be it one of aesthetic quality, remoteness, tranquillity, panorama, etc

is what is perceived from that feature. Clogher Head, although it has a relatively low elevation, might be considered as such, being dominant in the flat coastal zone surrounding it.

Sensitivity Value

Of a landscape is the measure of its ability to accommodate intervention without suffering an unacceptable or detrimental loss or alteration of landscape character type.

Landscape values

Are judgmental in nature and will include environmental and cultural benefits including services and functions. Stakeholders should normally be involved at this judgmental stage (The term stakeholders describes the whole range of individuals and groups who have an interest in the landscape) .

Landscape is never static. Following the major geological and ice age formations and upheavals, which shape our landscape today, the single greatest intervention, has been that of human beings. The landscape as we know it today is largely the product of farming practices for the past 300 years. However with the advent of electricity and mechanical power the rate of change has accelerated over the past 50 years. There is an onus on the present generation not to degrade our landscapes but to understand the forces of change and direct them in a manner that is positive and sustainable so that we can pass them on to future generations as living vibrant units.

Heretofore, where change was to take place, landscape design when attached to a planning application or decision was seldom regarded as being at the upper end of the scale of importance. Neither should Landscape Assessment be used to resist changes which influence our environment but nurtured as a tool to help the decision making process in a sustainable way.

Archaeological Heritage

There are approx. 1600 listed monuments in the Recorded Monuments for Co. Louth published by the National & Historic Properties Service in 1996. It is not an exhaustive list, as many other sites still remain to be uncovered. This gives a crude average of 1 monument per 5 hectares.

In the Archaeological Survey of Co. Louth by Buckley and Sweetman they set down two basic periods:

(a) Prehistoric and early Christian period up to 12th Century

Items of note during this time included: flint scatters, middens, isolated settlements, tombs, mounds, barrows and cairns, burials (cist and pit), enclosures, standing stones, rock art, Fulachta fiadh, crannogs, forts, souterrains, ringforts, earthworks and enclosures, field systems and toghers. Louth has a high concentration of souterrains.

(b) Medieval and post medieval period (12th Century onwards).

Items listed here include in the main, churches and monastic remains, cemeteries, other ecclesiastical remains, mottes, moated sites, castles, deserted medieval village, town defences, stone head, bridge, military fortifications and post medieval houses.

Most of Co. Louth once formed part of the 'Pale' which was a fortified area set up by the Anglo-Normans in the 15th Century to protect themselves from the native Irish. It was once referred to as the Land of Peace, occupied by the obedient shires. There are no remains of this fortification in Louth today.

New Agencies involved in Landscape Development

- I. The Department of Arts, Heritage, Gaeltacht and the Islands published a document entitled the "National Biodiversity Plan" in May 2002. Biological diversity is described as the variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems."

It is proposed that Local Biodiversity Action Plans be prepared, along with the designation of Natural Heritage Officers.

The success or otherwise of the plan will only be achieved by involving a wide range of Government Departments, Local Authorities and other agencies establishing a specific Biodiversity forum representative of all the stakeholders.

- II. Integrated Coastal Zone Management (ICZM)
In 1999 the European Union set out a paper "Towards a European Integrated Coastal Zone Management Strategy". It recognises that coastal zones have been a major focus for the development of human society as distinct from inland development.

Some of the issues recognised are

- Agricultural production in coastal plans using coastal water resources
- Diversification of fishing activities
- Energy production oil, gas, wind and waves.
- Transport & Commerce, ports, harbours, coastal transport zones which are key elements in global transport links
- Cultural heritage
- Tourism, leisure, recreation, beaches etc
- Retirement and holiday homes

- Coastal erosion
- Pollution abatement

In May 2002 the E.U. recommended the adoption by each member state of a national strategy or several strategies to implement the principles for integrated management of the Coastal Zone.

Each state should report to the Commission before Feb 2006.. The Commission shall then submit an evaluation report to the European Parliament before December 2006.

Co. Louth has an extensive and varied coastline having regard to the areal size of the county.

Methodology of the Assessment

Format of study & Landscape Assessment

The format of this study relies heavily on two publications:

- (a) *Landscape Assessment - Consultation Draft of Guidelines for Planning Authorities*, by DOELG, June 2000.
- (b) *Landscape Character Assessment Guidance for England & Scotland*, by the Countryside Agency & Scottish Natural Heritage, June 2002

The DOELG guidelines, when adopted, will require each Local Authority to classify all the landscapes in their area into different Landscape Character Areas (L.C.A.s). In determining each L.C.A., regard must be given to:

- (a) Landscape character
- (b) Landscape sensitivity
- (c) Landscape values –

Landscape character was dealt with in Stage I. Landscape sensitivity and values are dealt with in Stage II

- Stage 1.** Sets out to identify and classify the landscape character as follows:
- Define scope
 - Desk study
 - Field Survey
 - Classification of Landscape character

In determining landscape character the physical units of landform and landcover are examined. This is followed by an assessment of the visual and image units. The information involved in Stage 1 should be 'value free' and merely a description of what our landscapes contain.

Scope

To provide a baseline inventory and description of landscape character at a county level, which may be applied to further future use. Consideration was given to work already published for the County Meath Development Plan and the Landscape Assessment for the Northern Ireland (Newry & Mourne District).

The Desk Study included:

- I. Analysis of O.S. maps (Discovery Series)
- II. CORINE Landcover maps (landuse)
- III. Geology
- IV. Soils
- V. Ecology
- VI. Habitats
- VII. Settlements & structure

Following the desk study a number of landscape areas began to emerge.

A field survey subsequently took place to identify the visual and image units.

Classification

Following the desk study and field survey a number of 'Landscape Character Areas (L.C.A.s) were identified and categorised. These in turn were given names to indicate the type of character that might best describe the area. The nine areas, which have been identified, are area specific e.g. Cooley Lowlands and Coastal area, and are set out below.

- Cooley Lowlands and Coastal Area
- Carlingford Lough and Mountains, including West Feede uplands
- Lower Faughart; Castletown and Flurry river basins
- Louth Drumlin and Lake areas
- Muirhevna Plain
- Dundalk Bay Coast
- Dunany, Boyne Estuary Coast

- Uplands of Collon and Monasterboice
- Boyne and Mattock Valleys

- Stage 2.** Sets out to appraise the landscape character sensitivity and values both positive and negative
- Approach to judgements – who is involved
 - Making judgements – on landscape sensitivity and values and what are the issues.

In Stage 2 it is only proposed to set out a possible scenario in the approach to and making of judgements. As landscape is about the relationship between people and place it is not the domain of “specialists” in any one field. Rather it is important that everyone involved in the process understands that some elements of it are relatively objective and not likely to be disputed while other elements are viewed differently and where opinions can vary.

A wide range of views should be taken into account in the making of judgements. For resource reasons this study did not involve the wider public interest in having local meetings in the various towns and villages throughout the County. It is important that this limitation is recognised. However, the Development Plan process does involve an element of public participation when it invites public comment for three months when each Draft Plan is advertised. In so far as there is a landscape dimension to the policies contained in each Plan, this does represent an element of public awareness and acceptance of the landuse policies proposed for rural areas.

Given the limitation of the study as previously referred to, an attempt was made to evaluate each L.C.A. and to place it into one of four categories viz. international, national, regional, and local.

The criteria used in the evaluation are as follows (D.O.E. Guidelines & Character Assessment Guidelines by the E.C.A. and S.N.H {already acknowledged}).

- Landscape Quality – the interactions of the landscape and the condition of features and elements
- Scenic Quality – which describes the landscape which appeal prominently to the visual senses
- Rarity – the presence of rare feature and elements in the landscape
- Conservation interests – the presence of features and particular wildlife, earth science, archaeological, historical and cultural interest
- Wildness – the presence of wild character in the landscape which makes a particular contribution to sense of place
- Recreational opportunity – the degree of open air recreation within the landscape in proximity to centres of population

- Cultural association – with particular people, artists, poets, writers; historical events; legends
- Tranquillity – relates to low levels of the built environment; traffic; noise; and where artificial lighting (public & private) is at a minimum.
- Representativeness – whether the landscape contains a particular character and / or features and elements which are felt by Stakeholders to be worthy of representation.

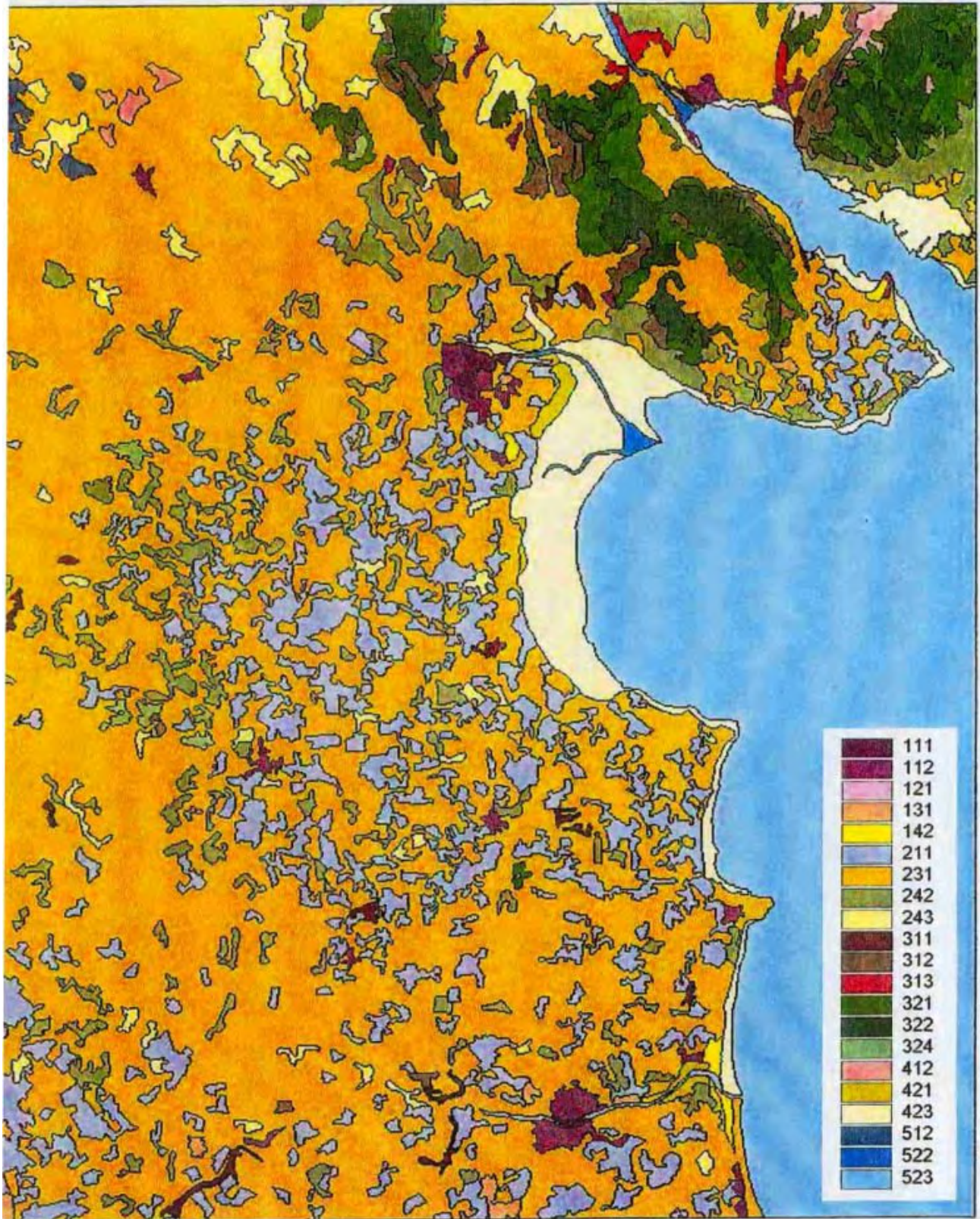
For example where a landscape area was deemed to have all of the above values it is proposed to qualify it as an area of international landscape importance.

Finally the purpose of the value assessment is to adopt objectives in relation to one or several of the following:

- Conservation and maintenance of existing character
- Enhancement of the existing character by the introduction of new elements or changes in management practice
- Restoration of character where it is appropriate to current land use activities and stakeholders preferences and is economically viable through either the public or private sector
- Creation of a new character which is different from the existing ones.

CORINE 1990 FOR COUNTY LOUTH

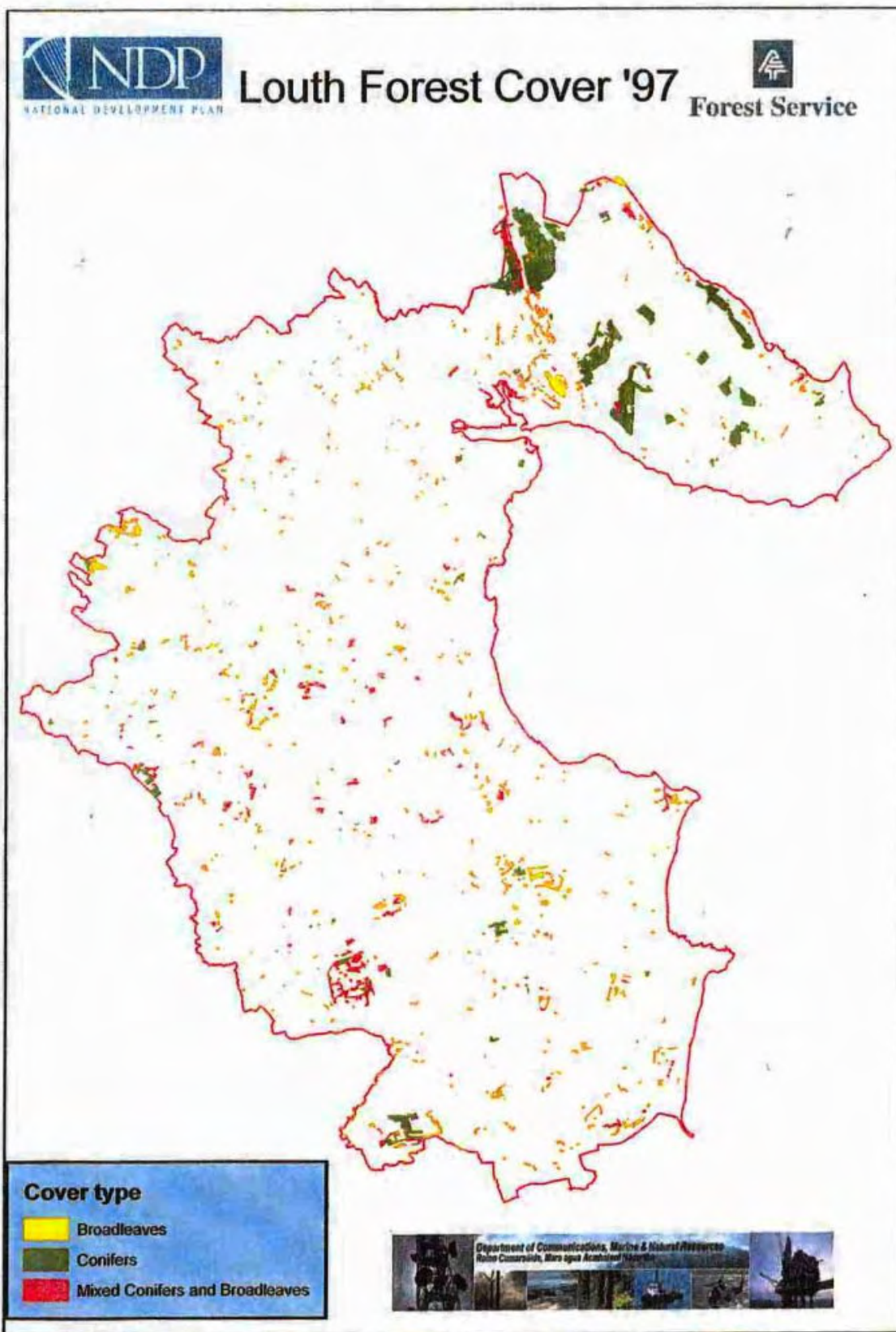
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CORINE Land Cover Nomenclature

Source: CORINE Land Cover Project Draft Technical Guide (Part 1)

Level 1	Level 2	Level 3
1. Artificial surfaces	1.1 Urban fabric	1.1.1 Continuous urban fabric
		1.1.2 Discontinuous urban fabric
	1.2 Industrial, commercial and transport units	1.2.1 Industrial or commercial units
		1.2.2 Road and rail networks and associated land
		1.2.3 Sea ports
		1.2.4 Airports
	1.3 Mines, dumps and construction sites	1.3.1 Mineral extraction sites
		1.3.2 Dump
	1.4 Artificial non-agricultural vegetated areas	1.3.3 Construction sites
		1.4.1 Green urban areas
2. Agricultural areas	2.1 Arable land	1.4.2 Sport and leisure facilities
		2.1.1 Non-irrigated land
	2.2 Permanent crops	2.1.2 Permanently irrigated land
		2.1.3 Rice Fields
		2.2.1 Vineyards
	2.3 Pastures	2.2.2 Fruit trees and berries plantations
		2.2.3 Olive groves
		2.3.1 Pastures
	2.4 Heterogeneous agricultural areas	2.4.1 Annual crops associated with permanent crops
		2.4.2 Complex cultivation patterns
		2.4.3 Land principally occupied by agricultural with significant areas of natural vegetation
		2.4.4 Agro-forestries
		3.1.1 Broad leafed forest
	3. Forest and semi-natural areas	3.1 Forests
3.1.3 Mixed forest		
3.2.1 Natural grassland		
3.2 Scrub and/or herbaceous vegetation associations		3.2.2 Moors and heathlands
		3.2.3 Sclerophyllous vegetation
		3.2.4 Transitional woodland-scrub
3.3 Open spaces with little		3.3.1 Beaches, dunes, sand
		3.3.2 Bare rocks
		3.3.3 Sparsely vegetated areas
		3.3.4 Burnt areas
		3.3.5 Glaciers and permanent snowfields
4. Wetlands		4.1 Inland wetlands
	4.1.2 Peat bogs	
	4.2 Coastal wetlands	4.2.1 Salt marshes
		4.2.2 Salines
5. Water bodies	5.1 Continental waters	4.2.3 Intertidal flats
		5.1.1 Stream courses
		5.1.2 Water bodies
	5.2 Marine waters	5.2.1 Coastal lagoons
		5.2.2 Estuaries
		5.2.3 Sea and ocean



Forces for landscape change.

- **Climate** is the most basic element which sustains our landscapes. Ireland has a temperate climate which for the purpose of this study is not expected to change to any significant degree in the short term future, despite the effects of global warming.
- **Population** The population of Louth has increased from 92,166 in 1996 to 101,802 in 2002, an increase of 10.5% (Preliminary Census 2002). Drogheda urban increased by 15.7% and Dundalk by 6.4%. The rest of the county (villages and rural areas) increased by some 10%. Migration into the entire county (population change minus natural increases) was 5,589 over the six-year period. These changes, if continued, will put greater pressure for additional lands in terms of infrastructure, industrial, commercial, community, recreational etc. As a result changes in our landscape are inevitable and the council will be a major player in deciding how best to meet the challenges in a sustainable way.

The number of Planning applications made to a local authority can be a crude indicator of demographic trends. The success of a planning application for development does not mean it will be built. It should also be remembered that there is a time lag from the grant of a permission to the completion of a project of, perhaps, two years. Planning applications have increased steadily from 764 in 1994 to 1657 in 2000. There has been a decline to 1491 in 2001 and figures for the current year (2002) are slightly down again. If developments are to proceed at the 2000 level there will be an even greater rate of change in the next five years.

- **Agriculture** is largely dictated by the European Union's Common Agricultural Policy (CAP). The industry has become less labour-intensive and there is a trend towards the amalgamation of small holdings on the better quality lands. New drainage schemes, hedgerow removal and the large number and scale of agricultural buildings have a strong visual impact on vulnerable landscapes. The excessive use of fertilizers and insecticides can lead to a significant decline in water quality.

Just under 6% of Louth's population is engaged in agriculture. Average farm size in 1991 was 28 hectares (ha). The area of the County is 81,120 (ha). Some 20,800 (ha) is taken up in tillage and horticulture, with livestock taking up some 43,000 hectares (ha). The balance includes housing, commercial, industrial and other land unsuitable for agriculture e.g. mountainous areas.

Our field boundaries of hedgerows and stone walls as we know them today are in some areas undergoing change and falling into disrepair with the consequent impact on biodiversity and historic interest of those systems.

However the EU, under the CAP, is placing greater emphasis on farming methods which do not degrade our landscape. The Rural Environmental Protection Schemes (REPS) provide support for environmental and conservation work on farms which includes the maintenance of field boundaries. Since its inception in 1994 the numbers of farmers joining the scheme has been encouraging. However, An Teagasc, at its annual REPS conference in October 2002 indicated that some farmers are becoming disenchanted with the scheme and that the numbers of existing members rejoining REPS 2 is down by approximately 40%. New members taking up the scheme

are not expected to increase by more than 25%, up to 54000 by 2006. This latter figure is only 50% of the total number of farmers who are eligible to join the scheme.

In general farm buildings (barns & stores) under 300 sq m in area, less than eight metres in height, and not less than 10 m from a public road, are exempt from planning permission. With the advances in plant and materials, larger buildings are becoming more common. Landscape design should form part of new planning applications.

Some full-time farmers are now taking up other non-farming, part-time work to supplement their incomes. The farming community is also being encouraged to diversify into agribusiness. In particular it is capable of accommodating tourist activities, like bed & breakfast and holiday homes, by the restoration and conservation of old, unused farm buildings. Farmers are also being encouraged to introduce new forms of farming viz. stud farms, deer farming, organic farming, free-range poultry and goat production. Some farms have been taken out of agriculture and given over to recreational use e.g. golf courses.

- **Forestry** accounts for only 1.7% of the area of county Louth viz. 1629 ha (as compared with 9% for the entire country). These plantations are mainly located on the Cooley Peninsula and the Boyne Valley. In "Growing for the Future – A Strategic Plan for the Development of the Forestry Sector in Ireland" (1996) it is national policy that the percentage of land given over to forestry should increase from 9% to 17%. Of that area some 20% should be given over to broadleaf species. In the recent "National Biodiversity Plan" it is considered that the latter figure for broadleaf species should be increased to 30% of the national forest so as to enhance biodiversity. Initial afforestation is now totally exempted development under the Planning Acts and taken out of the Planning Control system. Total responsibility is now given over to the Department for the Marine and Natural Resources. However an Environmental Impact Assessment is required for afforestation above certain limits. The thresholds are as follows
 - I. Initial afforestation involving an area of 50 ha or more.
 - II. Replacement of broadleaf high forest by conifer species where the area involved would be greater than 10 Ha.
 - III. Deforestation for the purpose of conversion to another type of land use, where the area to be deforested would be greater than 10 Ha of natural woodlands or 70 ha of conifer forest.

Practically all afforestation is grant aided by the Forest Service. All applications for such grants, for areas in excess of 2.5 ha, are notified to the public by way of notice in an appropriate provincial newspaper. Applications above 25 ha are normally referred to the Local Authority for comment. It should be remembered that commercial forestry, as opposed to broadleaf woodland landscapes, has a relatively short term life cycle from planting to harvesting. Lands previously used for such can easily be returned to their original condition or to other sustainable uses. On the other hand landscape architects of the 18th & 19th Century, who designed landscaping for large formal estates, never lived to see their creation come to maturity some two to three hundred years later.

Since the adoption of the County Development Plan in 1997 there has been a limited but not significant number of forestry grant applications in this county. The council has listed in the 1997 Development Plan the following areas which it considers to be sensitive to afforestation:

- I. Areas of Outstanding Natural Beauty (A. O. N. B.)
- II. Areas of High Scenic Quality (A. H. S. Q.)
- III. Scenic routes
- IV. Views and prospects
- V. Viewing points
- VI. Amenity schemes
- VII. Groups of trees
- VIII. Proposed National Heritage Areas
- IX. Areas of Specific Archaeological Interest
- X. Archaeological Structures

The forest service does not provide grant assistance for planting in SPAs and SACs. Applications that would affect pNHAs and archaeological sites and monuments are considered on their merits. The Forest Service has issued a number of guidelines in connection with afforestation viz.

- Forestry and the landscape
- NeighbourWood Schemes
- Forestry and Archaeological
- Forest Biodiversity
- Forestry and water quality
- Native Woodland Schemes
- Forest harvesting
- Aerial Fertilization
- Grant and premium schemes

The Forest Service does not envisage any great change in grant applications for Louth in the foreseeable future.

▪ **Rural Housing**

The question of rural housing has been the subject of fierce debate since the coming into force of the first Planning Act in 1964. This debate has intensified in the last 10-15 years, with the opposing sides as far apart as ever. To sustain our rural community there is a genuine need for a measure of isolated housing and there is no great conflict of opinion here. However it is the question of urban generated housing (U.G.H.) where the difference of views occurs.

The Urban Generated Housing phenomenon is described as the demand by urban dwellers to live in a rural area and who have little or no connection with these areas. This issue is particularly strong in Louth for several reasons.

- (a) Louth is the second most densely populated county in Ireland (26 Cos), after Dublin
- (b) Proximity to Dublin
- (c) Good road, rail, and bus network
- (d) Maritime County

The building of one-off housing in rural areas is normally an irreversible change. One has only to look at old dilapidated houses to realise that once a site is separated from a farm unit there is no real possibility that the new site will ever be returned to the original farm unit.

The Council in the 1997 Development Plan introduced a policy to stem Urban Generated Housing and regulate isolated housing. The County was divided into areas, which had different controls with regard to Urban Generated Housing.

- I. The hinterlands of Drogheda and Dundalk which broadly extend to approximately 6 kms around each town
- II. Areas of Outstanding Natural Beauty
- III. Areas of High Scenic Quality
- IV. Development Centres (two categories) to attract new housing
- V. The rest of the county

In the first three areas prospective applicants had to demonstrate that they were long time residents in those areas. Town dwellers from Dundalk and Drogheda and further afield would be excluded.

Development Centres offered an alternative to those who did not wish in the larger urban areas.

In the rest of the county development control was not as strict, other than, ribbon development (at least three houses in a row) was to be avoided.

Over the past five years there has been a tendency to leapfrog across the hinterlands of Dundalk and Drogheda into category (V). This anomaly should be addressed in the next review.

Historically, our rural ancestors lived in clachans where large families would live in small houses. This trend is now being reversed to one of small families living in very large houses. Each house in a rural area normally requires at least 0.2 Ha, which is approx. 17 persons/ha or 7 persons/acre. Second or holiday homes also create their own problems.

Our ancestral farming community built their houses and farm buildings close to each other, in sheltered places. They normally planted trees as shelter belts rather than for aesthetic reasons. Today improved building methods, such as insulation, allow us to build on hilltops and other exposed areas.

Urban Generated Housing is not sustainable for the following reasons:

- High energy costs in terms of greater travel distances to work, school, shopping and recreation
- Loss of agricultural land
- Narrow rural roads have to be upgraded to cater for increased traffic
- Threat of ground water pollution
- Uneconomic provision of services such as: water, sewerage, footpaths, lighting and other public utilities (including telephone lines and deliveries by eg An Post)
- Urbanisation of the rural landscape

The 1997 Development Plan attempted to minimise the obtrusion of housing in the landscape by limiting the floor areas in scenic areas to a maximum of 170m². Within the new Landscape Character Areas this approach could be extended to landscape areas of high sensitivity.

In many cases where the granting of permission for a house is sustainable in the countryside, conditions regarding access visibility require the removal of existing hedgerows and/or the set back of walls, thereby creating a visual break in the original road boundary landscape. Native hedgerows should be retained, and maintained at a lower level to achieve the required visibility standards. In a similar way, stone walls should be retained in their original format (loose or otherwise).

In 1999 Louth County Council published a document "Building Sensitively and Sustainability in Co. Louth" by P & D. Geoghegan, to assist prospective applicants on how to design future housing for rural areas, in terms of location, enclosure, mass, materials, shapes, boundaries and landscaping.

As an alternative to isolated rural housing the Council has designated 46 Development Centres (D.C.) throughout the county. These were subdivided into 14 Category One and 32 Category Two D.C.s. The former D.C. category would have a range of services e.g. school, church and shops. The latter would be relatively small settlements without foul drainage and little

or no community facilities or social structure. In this way the council hopes to direct Urban Generated Housing into these areas and minimise the urbanisation of the landscape.

- **New Roads**

Louth is presently completing the penultimate section of the M1 Euroroute within the county viz. Boyne to Monasterboice. The first section (Dunleer Bypass) was completed in 1993 and the Dunleer-Dundalk section was opened in 2001. The final phase from South of Dundalk to the Border will be completed by 2006. For each phase an E.I.A. was prepared in which the impact of the motorway on the landscape was dealt with. The new motorway from Monasterboice to Dundalk, when travelling north, opens up the entire landscape of the county, culminating in the Cooley Mountains and Slieve Gullion in County Armagh.

The final section between Dundalk and the border will pass through the Flurry Valley and might prove to be the most sensitive section yet to be completed. On the other hand, the new Motorway Bridge across the Boyne is already a dominant feature in the landscape and over time should give a new sense of identity to the area in a way similar to the existing 19th Century Railway stone viaduct in Drogheda.

Motorway junctions in particular are very demanding for space and in themselves can cover many hectares of land originally given over to farmland. They may be very well illuminated with very high public lighting columns. Add to that the desire by industry and commerce to locate in proximity to such junctions when the scale of the intrusion into the landscape can be overwhelming. There are four motorway junctions in Louth, viz Drogheda, Dundalk south, Castleblayney Road and Ballymascanlan, which have been identified for industrial and commercial expansion in the Development Plan. In each case it is considered that a landscape assessment for each development zone should be prepared at the preliminary design stage.

Product advertising in rural areas can be incongruous in the landscape and should be discouraged.

- **Industrial and Commercial development.**

In particular motorway junctions are attractive sites for developers and their enterprises. Due to the high rise in car ownership some large-scale industry, warehousing, and large retail parks may seek to locate at the edge or outside villages and towns. Quite apart from the massing of buildings, further large areas are required for car parking. In these cases the landscape is very vulnerable to this type of change.

- **Tourism and Recreation**

Tourism and recreation can be a force for change, which may not always be positive in terms of landscape sensitivity. New recreational pursuits are being established which demand large areas of land. In other cases rising property values in urban areas are increasingly driving out recreational pursuits from cities and towns into rural areas.

Tourists expect easy access to their destinations by new road improvements. Large accommodation units, like hotels with recreational facilities, would seek to locate towards water edge sites or sensitive scenic areas.

Overhead lines

The E.S.B network has remained relatively static for years. Some lines have had to be moved for urban and motorway developments.

The likely changes that may take place in the next few years are:

- I. Line upgrading of the 10 KV network to 20 KV which will retain existing corridors.
- II. Possible future North South initiatives
- III. New lines to meet wind energy installations

Telecommunication masts

With the advance of radio and television and more recently the mobile phone, society demands that these facilities are made readily available. The Planning Authority has recognised this fact and to date the number of permissions granted stands at approx. 10 with a similar number being refused. The technology for these facilities is continually being improved e.g. satellite systems etc. Public reaction to masts has in the main been negative with health risks being cited as the major cause for concern.

In 1996 the Department of the Environment issued planning guidelines entitled "Telecommunications Antennae and Support Structures: guidelines for Planning Authorities".

These guidelines propose that listed landscapes and scenic routes listed in development plans S.P.A.s, S.A.C.s, proposed National Heritage Areas; archaeological sites; and other monuments, should be avoided where possible, as sites for the location of masts. Co-location on other masts with other telecommunication bodies, is recommended but this solution is not supported by the different companies themselves.

Where planning permission is granted it is usually limited to a life span of five years, when the mast must come down or a further permission is granted.

Companies have in some cases availed of the exemption granted under the Planning & Development Regulations 2001 which allows antennae to be attached to:

- I. Public or commercial buildings (other than education facilities, childcare facilities or hospitals, by way of façade, roofs, chimneys etc
- II. Telegraph poles, lampposts, flag poles, C.C.T.V. Poles
- III. Electricity pylons.

Wind Turbines

In 2000, 6% of our national energy requirements came from renewable energy. Of that, 1% was generated by wind resources. In the “Green paper of Sustainable Energy” published by the Department of Public Enterprise in September 1999, a target was set for renewable energy to be increased from 6% to 12% by 2005, now revised to 13.2% by 2010. Wind energy is seen as contributing the greater part of that increase viz. 1% to 7%, an increase of 600%.

Ireland is rich in wind resources, particularly on the western seaboard. To date the majority of those existing turbines are located in those parts of the country. Wind farms may vary in size from 3 to 50 or more turbines. To be efficient they have to be separated by a distance of 5 and 10 rotor blade diameters apart. Consequently wind farms can be very extensive and impose a very strong visual statement in the landscape.

In 1996 the D.O.E. published “Wind Farm Development – Guidelines for Planning Authorities”. Three conditions must be met for a developer to consider any potential site for wind farm development.

- (a) There must be adequate wind resource. There are no actual records readily available for Louth. The nearest meteorological land station is Dublin airport.

However E.S.B International have prepared computer generated theoretical wind speed maps for Louth for mast hub heights of 45m. It is considered that a wind speed of 8.0 m/s is required at present for the economic provision of wind farms. Only one location within the county achieves this threshold viz. the Cooley mountains.

Below that threshold, viz. 7.5 – 8.0 m per second, there are five other areas.

- Greater part of the Cooley Mountains
 - Uplands of Collon
 - Brownstown/Fieldstown Hill
 - Head at Clogherhead
 - Baltray
- (b) This suitability and strength of the E.S.B. national grid along with the accessibility to it. Wind farm developers have to be able to connect to the National E.S.B. grid. This cost may threaten the economic viability of the project in terms of the distance to be travelled and the size of the E.S.B. depot. It is much cheaper to connect to the 10, 20 and 38 KV lines than the higher voltage lines.
 - (c) There must be an economic return to the developer. The price per unit paid to the developer in Ireland is relatively low when compared with other countries that have invested in wind as an alternative energy resource.

These three issues interact with each other. Along with that, the technology of these developments is constantly being upgraded. For example the threshold of wind speeds at 8 m/s could be reduced if the unit cost of electricity paid to contractors was increased. Wind turbines usually have a hub height in excess of 40 metres with blade motors of at least 50m in diameter. The tip of the normal vane would be some 65 m above ground level. The current trends in the industry are that the turbines are getting higher and there are fewer of them. A current application in Kerry has hub heights of 75 m with 80 m rotors.

As previously mentioned, sites are not normally considered where the average wind speeds are less than 8m/s at the hub height. Again, new technology, with improved turbine design, is likely to reduce this figure also, thereby bringing a large increase in the availability of sites throughout the county.

Rotors are cut off at windspeeds less than 4 m/s and when they exceed 25 m/s, in case of structural damage.

Main Impacts of Wind Turbines

I. Visual Impact

By definition the developer requires an open landscape to avail of the best wind source available. It is difficult to "hide" structural icons where the towers may be appreciably higher than 40 metres and the numbers on each farm can be up to 200.. Distance from urban and rural developments and from roads and railways is the major factor in alleviating the impact of turbines.

However some landscapes are more vulnerable than others. Ridgelines should be avoided. Flat plains may also present difficulties. Is the landscape convex or concave? The latter may be more acceptable. Is the skyline broken in a significant way?

In assessing any proposal the Planning Authority should insist on computer digital terrain models to describe the zone of visual influence of any proposal. The zone should have a minimum radius of 10 kms.

Off Shore wind farms are now forming part of the current debate. Permission for these enterprises will be outside the administrative area of County Councils. However, on shore facilities will come under the Planning Control of the Local Authority.

The colour of the towers and the vanes are also important and may be different for different landscapes.

II. Shadow Flicker

This is caused by the shadow cast by the sun as the blades rotate. The impact of these shadows extends to their greatest distance in early morning and late afternoon. Buildings occupied by humans, other than onsite structures, should not be subject to undue shadow flicker.

Again, a computerised digital terrain model should be prepared.

III. Electromagnetic Interference

Wind farm sites, like telecommunication mast sites, usually seek out similar locations viz. elevated sites. Measures should be taken to avoid interference with existing television, radio and mobile phone masts.

IV. Biodiversity and Heritage

Windfarms may impact on areas such as Special Protection Areas (SPAs), Special Areas for Conservation (SACs), Proposed Natural Heritage Areas (pNHAs), monuments and other items protected under the National Monuments Acts.

For example, windfarms could pose a threat to bird life, including migratory birds, by way of noise and interference with flight paths, particularly near feeding grounds.

Hill tops and slopes are common places to find items of archaeological heritage. Due regard will be given to the latest Sites and Monuments Records of Dúchas.

V. Other land uses.

Wind Turbines are not likely to impact to any significant degree on existing or new farm methods. However, they may impose some limitations on future forestry proposals.

The expansion of towns and villages and development centres should not be impeded by the proximity of wind turbines.

Isolated rural housing may be impacted upon to some degree.

Quarrying

Co. Louth is rich in sands and gravel and very well located in the greater Dublin area to supply these raw materials for the built environment to a much wider market than the local area. The main extraction areas are in Cooley. Stone is quarried at Dunleer and Gallstown, the products of which are used in making of concrete and road surfacing.

The County has a legacy of old unfinished and abandoned quarries. In more recent times the illegal extraction of material for landfill and infrastructural projects has created problems for the Council.

There are extensive areas of glacial deposits in the county and it is reasonable to assume that this existing demand for sand and gravel will continue.

The ground water table normally dictates the depth to which it is feasible to extract material for economic reasons and the possible interference with neighbouring water supplies. The quarrying of sand and gravel is conducive to the ground being returned to its original agricultural use provided

the topsoil overburden is retained on site and the site is reasonably contoured for the use of farm machinery. Stone quarrying on the other hand normally involves blasting which leaves the quarry edges quite sheer with shelving.

Stone quarries also have a long life span, which may go on for generations. Carrara marble is still being quarried in Tuscany where Michelangelo selected stone for work on the Vatican. The after use of such quarries is not a simple matter to resolve. They also tend to leave a permanent scar on the landscape. The use of old stone quarries for landfill waste disposal is now being discouraged as a solution to waste management.

Guidelines for Quarrying are currently being prepared between the D.O.E. and the Irish Concrete Federation.

Peat extraction is not significant in Louth and is only carried out on a very limited scale in the Black Mountain area of Ravensdale. The Ardee Bog is a proposed N.H.A. and is under much greater threat from land drainage and reclamation than further peat extraction. The Irish Peatland Conservation Council have identified 11 areas as being worthy of conservation, eight of which are covered by proposed Natural Heritage Areas or S.A.C.s. (three others are Cartonstown Lough, Drumshallon Lough and Tinure)

Contaminated Sites

The council has designated 10 sites throughout the county as being contaminated. Three of these sites were previously used by the council for the disposal of waste but they are now closed. The Council landfill site at Whiteriver is still open. The remaining six sites were used illegally by outside businesses but are now dormant or closed.

Legal Position under the Planning & Development Act 2000

Part 13 of the Planning & Development Act 2000 deals with amenities and outlines the powers conferred on a Local Authority with regard to landscape.

Section 202 states:

“where, in the opinion of the Planning Authority by reason of

(a) Its outstanding natural beauty, or

(b) Its special recreational value

And having regard to any benefits for nature conservation, an area should be declared under this section to be an area of special amenity, it may, by resolution, make an order to do so and the order may state the objective of the Planning Authority in relation to the preservation or enhancement or special features of the area including objectives for the prevention or limitation of development in the area”

Likewise the Minister for the Environment may direct a Planning Authority to make an order under this section to be an area of special amenity by reason of its outstanding natural beauty or its special recreational value.

This section ostensibly prevents or limits certain types of development in an area.

Section 204 states that:

“A Planning Authority may, by order, for the purposes of the preservation of the landscape, designate an area or place under the functional area of the authority as a Landscape Conservation Area.”

In a Landscape Conservation Area the planning authority may prescribe certain developments which would normally be exempt but would not now be exempt in a designated conservation area e.g. agricultural buildings below a certain floor area and height threshold which are normally exempt would, in future, have to obtain planning permission in the normal way.

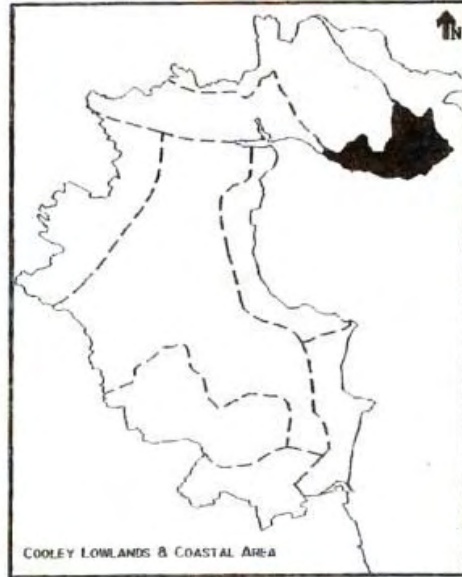
Following the appraisal of the nine Landscape Character Areas it is recommended that consideration be given to:

- Declaring the designated Carlingford Mountain S.A.C. as a Landscape Conservation Area.
- Declaring the Head at Clogherhead, east of the village to be an Area of Special Amenity by reason of its Outstanding Natural Beauty and its Special Recreational Value.

The area involved is quite small and it is a very distinctive promontory of land along the coast with the village and fishing port at its base.

COOLEY LOWLANDS & COASTAL AREA

LANDSCAPE EXAMPLES
IN THIS AREA.



Cooley Lowlands and Coastal Areas

Key characteristics

- A dramatic gentle sloping landform from the base of the Carlingford and Slieve na Gloch mountains to the sea.
- Predominantly agricultural land with well defined hedgerows and small field patterns, which sustain the biodiversity of the area.
- Main settlements at Greenore and Gyles Quay, with a number of very small centres. Isolated housing is scattered throughout the many narrow country roads.
- Regional route 173 links Dundalk with the peninsula with Greenore, Carlingford, Omeath and further on to Newry.
- Rich in archaeological items
- Extensive views of both Cooley and Mourne Mountains and across Dundalk Bay.
- Prominence of quarrying in the area.

Description

The Cooley Lowlands and Coastal area forms part of the eastern tip of the Carlingford peninsula, which has a southern and eastern aspect.

The area is relatively flat and slopes gradually to the sea to the north, east and south, in contrast to the Carlingford Mountains, which rise steeply to the rear. At Cooley Point there are some sheer faces onto the shore.

The major route through the area is regional route 173 which offers panoramic views of the Carlingford and Mourne Mountains with its rugged coastline, when travelling towards Greenore. Oyster farming on the intertidal mudflats is a significant economic activity in the area.

In the County Development Plan 1997 a part of the area has been listed as an area of High Scenic Quality. Two scenic routes are identified viz. Muchgrange to Carlingford and Grange to Greenore.

Landform & Landcover

The topography of the area is dictated by the bedrock of limestone from the Carboniferous period throughout the entire area. This is overlain mainly by glacial sands and gravels of morainic origin with a coastal band of raised marine deposits extending from Templeton to Greenore. The area is rich in sand and gravel deposits. The underlying cover of limestone and glacial deposits have resulted in a rich soil cover of acid brown earths with some gleys and brown podzolics.

Crop growing and particularly potatoes is the main agricultural activity with some areas given over to grazing and silage production.

A shelter belt of Scots Pine at Greenore Golf Club is a landscape feature, which is visible from a wide area and only threatened by its maturity and possible loss of regeneration.

The shoreline is principally stony with rock outcrops and has 3 small sandy beaches.

Parts of two Special Protection Areas (S.P.A.) and one Special Area Of Conservation (S.A.C.) are located in this area viz. Carlingford Lough (S.P.A. & S.A.C) and Dundalk Bay (S.P.A.). Liscarragh Marsh is listed as a proposed Natural Heritage Area (N.H.A.)

Being practically surrounded by the sea, surface water is discharged to the sea by means of small water courses, the largest of which is the Castletown river draining the Glenmore-Castletowncooley Valley.

Human Intervention

Greenore is a 19th century village established with the railway line (no longer in existence) to serve the natural port and hotel and provide a connection right along Carlingford Lough to Newry. The old hotel is now very dilapidated and used as offices by the port authorities. The significance of this coastline for leisure facilities has been recognised for some time.

There are approximately 70 recorded archaeological monuments in the areas (Recorded Monuments of Co. Louth, Archaeological Survey of Ireland, 1996). Grange village is identified as an area of Special Archaeological Interest. Gyles Quay developed as a small holiday resort, which has an intimate tidal quay and strand. It still retains its original use due mainly to the existing caravan park. It is also very popular for daytrippers.

Buildings of note among many others are Greenore village, Grange Church and thatched house at Rampark. The small settlements of Rathcor, Ballynamaghery and Whitestown have been listed as conservation areas of the built environment. (Co. Louth Development Plan 1997). The former two have been delisted in the proposed 2001 Draft review of the plan.

There are four aquifers which provide water supplies to the area.

Field patterns are small and complex in the main with well maintained hedgerows of thorn and bramble with dotted trees of ash, sycamore and elder. In many cases, these hedgerows conceal a bank or loose stone wall. Nearer the coast the hedgerows are less pronounced.

Isolated housing is very evident in this area with most of the new housing located along the class 1 and class 2 county roads. Apart from Greenore and Giles Quay eight other Category II Development Centres have been listed in the Development Plan.

The growing of potatoes in the areas gave rise to the building of the alcohol factory at Riverstown, which no longer uses this source of raw material, some 60 years ago.

Landscape Sensitivity

The agricultural landscape in this area is very robust due to the presence of strong hedgerows, which help to occlude the number of isolated houses in the area. On this account, interference with the existing walls and hedgerow patterns would serve to degrade the landscape.

Along the designated scenic routes in the Development Plan the introduction of further isolated housing would not be sustainable and it should instead be located within the listed Development Centres in the area.

Further extraction of sands and gravels can be anticipated. Proposed sites, along with their plant and machinery, should not be visible from scenic routes, and should not necessitate the 'material' upgrading of the existing road system.

The landscape is capable of accommodating some mixed forestry but would be sensitive to extensive planting, particularly along the designated scenic routes.

Further communication masts may be sought due to the difficulty of terrain along Carlingford Lough. An alternative to masts should be investigated viz. Farm buildings, and port structures.

The feasibility of putting wind turbines in this area is a distinct possibility where the theoretical wind resource at 45 m above ground level is between 7.5-8.0 m per sec. This area would be sensitive to any large wind farm development because of the exposed nature of the landscape on the eastern edge of the peninsula where the face of the mountains is convex rather than concave. Due to the density of rural housing and the number of small settlements in the area it would be difficult to find a site in the area remote enough to meet distance parameters in terms of flicker and noise. Wind farm proposals, if any, should be at the smaller end of the scale.

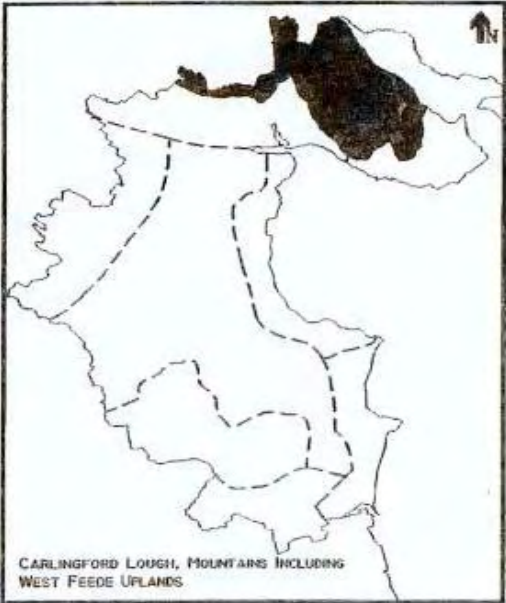
Cooley Lowlands

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ High scenic quality views towards Cooley and Mourne Mountains and Dundalk Bay. ▪ Part of Carlingford Lough (S.P.A. & S.A.C.) and Dundalk Bay (S.P.A.) are included. ▪ Recreational opportunities are plentiful due in the main to the maritime nature of the area. ▪ Contains the 19th century railway village of Greenore established for its natural port facilities and fine railway viaduct at Mountbagnall. 	<p>Conserve & Restore</p> <p>Conserve</p> <p>Enhance</p> <p>Enhance & Restore/Create</p>
Overall Classification	Local

CARLINGFORD LOUGH & MOUNTAINS

LANDSCAPE EXAMPLES
IN THIS AREA.



Carlingford Lough & Mountains including West Feede uplands.

Key Characteristics

- A dramatic mountainous area where the visual impact is increased, by its location on a peninsula.
- The valley of Glenmore, tapering off to its enclosure at the higher level which allows for a full appreciation of the landform in the area.
- The open moorland of the higher areas with its variety of bracken, gorse and heathers.
- The imposing geological feature of the Lough itself between the Cooley and Mourne mountains.
- The intimate road network in the area which offers a great variety of landscapes in such a small area.
- The sense of isolation of tranquillity in the Moneycrockroe area.
- Large pockets of coniferous forests throughout the area, a few of which are poorly defined.
- Area is rich in archaeological items and renowned in legend folklore.
- Pressures for isolated housing in the scenic areas, which tend to be quite large in their mass.

Description

This area forms the greater part of the Carlingford peninsula and Feede mountain. Slieve Gullion to the north in Armagh is also part of this complex. Slieve Foye (588m O.D.) and Black mountain (508 m O.D.) are separated by steeply sloping valleys. It has two very well defined ridges at Aghnameen and Windy Gap which present a dramatic change in landscape as one approaches from both the south and north.

Some pasture land is evident at the 170 m contour. Above that height there is little evidence of modern field boundaries where the land is taken over with bracken, gorse and heather which bring variety to the landscape with their changing colours at different seasons. There is a small but notable water area enclosed by marsh and peat land close to the Windy Gap.

Rock scree is also evident at the lower slopes of Slieve Foye in Glenmore. The road between Carlingford and Omeath (R173) offers panoramic views across the lough to the Mourne. Expansive views are also available when travelling north between Windy Gap and Omeath and South from Aghameen to Jenkinstown.

The Ravensdale Park valley between the Feede and Blacks Mountain with its narrow steep sloping wooded landscape is very enclosed and was once considered for the construction of a large water reservoir to supply Dundalk.

Almost all the County Roads west of Feede Mountain have come under development pressure for housing due to the availability of scenic views southwards across the Muirhevna Plain.

In contrast to the rest of the coastline, Slieve Foye slopes steeply to the coast where there is a sharp precipitous edge.

Landform and Landcover

The bedrock is comprised of granophyre with pockets of layered Gabbro. Along the lough and across the Black Mountain into Ravensdale there is a band of mixed red mica and red shale.

There are large areas of rock outcrops, and shallow rock which has a boulder clay overburden in the lower reaches. The Vikings are responsible for the naming of Carlingford by calling it the “fjord of Carlinn” from the formation in the lough itself.

The area has quite a variety of soils. In the higher areas of the peninsula there are Lithosols with blanket peat and peaty podzols. Lower down there are a variety of brown podzolics with gleys and peats. To the west there are acid brown earths with some gleys and podzols.

Drainage of the area takes place via 3 small rivers viz. the Flurry river, Big /Castletown river and the Ryland river. Numerous streams, some with small waterfalls, cascade down the slopes. Carlingford and Omeath have their own catchment areas for their water supplies. The previous main water supply for Dundalk from the Jenkinstown area has now been largely replaced but is still retained as a source for water.

A large part of this area has been designated as S.A.C.s viz. Carlingford Lough and Carlingford Mountain mainly for their ecological, botanical and zoological values. Carlingford Lough is also an S.P.A. and noted for its ornithological values.

In the Development Plan, a large part of the peninsula is classified as being an Area of Outstanding Natural Beauty and an area of High Scenic Quality. There are 18 scenic routes listed, along with 5 viewing points.

There are two notable woodlands viz. at Ravensdale and Omeath Park . The former is primarily conifer and the latter broadleaf. Elsewhere there are pockets of commercial forest which tend to adhere to the old field boundaries giving in some cases a serrated edge to the tree line at the higher levels.

In the general Ravensdale areas hedgerow trees on each side of the road have enveloped each other to give a shaded arched effect.

Human Intervention

Carlingford & Omeath are the principal settlements within the area. The former has been designated as a Heritage Medieval Village. Apart from its mountainous landscapes this area has approximately 170 archaeological items which include 5 National Monuments. At the higher reaches where mans influence has been least, some of the early prehistoric field patterns associated with ringforts can be seen.

Farming is mainly pasture for sheep and cattle. Above the 200 m O.D. contour most of the land is unenclosed except for the post and barbed wire fencing along the roads and in some cases further back across the heathlands. Below that level, the field boundaries change from loose stone to indigenous hedgerows, some of which include small stretches of forsythia.

The Cooley area and Faughart hill are largely featured in the Irish epic Táin Bo Cuailgne. A Táin Trail (40 km) has now been established across the Glenmore Valley and around Slieve Foy and Black Mountain. In the recent past, another exploit of Cú Chuláinn, who was named Setanta as a boy, has been established. It is recorded that he used to hit a ball with a hurley as he went along. The Poc Fada, is now celebrated as an annual event at Annaverna where hurlers compete to determine who can hit a ball the furthest across mountainous terrain, for a specific number of 'pocs'.

The higher areas are served by a network of county roads which are narrow, steep and winding due to the particular landform. As a result traffic moves slowly and is confined to local service traffic and those visitors to the area.

A power line passes through the Moneycrockroe area on the upper side of the county road.

The minor settlements in the area are Glenmore, Benagh and Grange Irish. In particular the steep cul-de-sac county roads at Annaverna, Ballymakellet, Jenkinstown, Carlingford and Ballyoonan, are displaying pressures for large isolated houses. There are also some dilapidated and abandoned old houses throughout the area.

Landscape Sensitivity

Practically the total amount of sand quarrying in the county has taken place in the Bush area and further reserves remain. Due to its height above the 100 m contour, extraction has proven to be a scar on the landscape. Some restoration has taken place but the problem is proving difficult to minimise. Further extensions above the 100 m contour should be the subject of critical appraisal. There are one or two small pockets of stone quarries but which have been closed for many years. Further expansion should not be encouraged.

The land above the 200 m contour is almost totally uninhabited and the only immediate threat is, that enclosure should take place. Thereby limiting access to the mountains. The areas between the 100 m and 200 m contour are extremely sensitive to all new forms of developments. The obvious example is the higher area of the Glenmore Valley.

The Council has consistently resisted for a long time development pressure along the seaside of the R173 between Carlingford and Greer's Quay. However, on the landward side the demand for urban generated housing has been at a premium to the extent that the very narrow cul-de-sac (Class 2 & Class 3) county roads are hardly capable of accommodating further increases. Just as people from the Carlingford area can appreciate the landscape of the Mourne across the lough so too should those people on the other side have the benefit of our similar and not as yet unspoilt coastline.

Carlingford's success in the Tidy Towns Competition in 1988 was a catalyst for change in the village. It is now identified as a tourist resource and daytripper area, and designated as a Medieval Heritage Village. It has a widely popular marina and further pressures for tourist accommodation and facilities are likely to continue here and throughout the entire peninsula.

The Forest Service have stated that planting will not take place in S.A.C.s and S.P.A.s. Proposed N.H.A.s are open to formal consultation with the Heritage Service. This policy rules out a large portion of the mountain area and only leaves the Glenmore Valley, the uplands above Omeath, Ballymakellet and the West Feede uplands. Care should be taken in the Glenmore area to retain the open nature of the valley by setting any forestry well back from the roads. The uplands of Feede are sensitive in that existing views may be obscured. The land between the road and the lough between Carlingford and Omeath should be a no go area for planting. New forests and reforestation should be phased and have the appropriate broadleaf mix planting.

Practically the entire peninsula has a theoretical wind speed contour in excess of 7.5 m/sec with some areas above 9 m/sec. This would identify this area as the most viable area in the county using the wind resource criteria. Access to sites and to the E.S.B. grid would prove difficult in the higher areas which are largely designated as an S.A.C. The existing R.T.E. mast at Clermont Cairn is 107 m high. As a comparison, some of the latest technology turbines could be as high as 115 m at the rotor tip. A preliminary appraisal would suggest the north eastern slopes of Slieve Na Gloch where the prominence of the turbines would be obscured from views north from across Dundalk Bay. The height of the turbines should be at the reduced height at the expense of more units, in the area. The West Feede uplands are unsuitable for this form of development.

Carlingford Lough & Mountains including West Feede uplands.

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ Very high landscape quality particularly above the 170 m contour which gives a sense of wildness. 	Conserve
<ul style="list-style-type: none"> ▪ Very high scenic quality in the Glenmore Valley and Flurry river valleys at Ravensdale Park. 	Conserve
<ul style="list-style-type: none"> ▪ The primitive nature of the landscape within the Carlingford Mountain S.A.C which has a high biodiversity value. 	Conserve/ restore
<ul style="list-style-type: none"> ▪ The scenic county road between Jenkinstown and Omeath which by its narrow and winding alignment reduces the volume of motor vehicles and gives a sense of isolation and tranquillity to the visitor. 	Conserve/restore
<ul style="list-style-type: none"> ▪ The wonderful views across the lough to the Mournes. 	Conserve
<ul style="list-style-type: none"> ▪ Maritime recreational opportunities which are widely recognised. 	Conserve
<ul style="list-style-type: none"> ▪ The association with the Táin legend, the Poc Fada and other myths associated with the area (Long Woman's Grave). 	Conserve / enhance
<ul style="list-style-type: none"> ▪ Rich in archaeological features and the existence of these features at such a high altitude viz. Clermont Cairn, and some early prehistoric field patterns. 	Conserve
<ul style="list-style-type: none"> ▪ Strong cultural links with writers and historical events. 	Enhance

<ul style="list-style-type: none"> ▪ National winner of the Tidy Towns competition followed by its designation as a medieval village has dramatically increased the prominence of and interest in, this area both nationally and abroad. 	Enhance/Restore/Create
Overall Classification	International
<p>Consideration should be given to declaring the Carlingford Mountain S.A.C (No 453) as a Landscape Conservation Area and extending its boundary to include Co. Roads No. 84 & No. 52 from Jenkinstown to Ardagh and lower down to conserve its existing status.</p>	

LOWER FAUGHART, CASTLETOWN
& FLURRY RIVER BASINS

LANDSCAPE EXAMPLES
IN THIS AREA.



Lower Faughart, Castletown and Flurry River Basins

Key Characteristics

- Variety of landscape types within the area, dictated by the landform and drainage areas
- Some fine examples of mature broadleaf roadside trees at Bellurgan and Aghnaskeagh.
- Prominence of Trumpet Hill in the landscape and its importance in terms of biodiversity giving reason for its proposed N.H.A. status.
- The flat marshes along the Flurry estuary (Designated S.P.A.).
- Early Christian associations with St. Bridget, along with many other archaeological features.
- Scenic roads around the wooded Ravensdale area and from the R174 at Ballymakellet and Jenkinstown.

Landscape Description

This area borders on Co. Armagh which has an adjacent designated Landscape Area called the Crossmaglen Drumlins and Loughs. This area, along with the Slieve Gullion Complex and part of the Carlingford mountain areas drain into Lower Faughart by means of the Castletown and Flurry rivers via the southern ground slopes.

Trumpet Hill, of igneous origin, and over 200 m O.D. is a striking landmark but its dominance is lost against the backdrop of the mountains behind. When viewed from the Jenkinstown Ravensdale route (R174) its prominence becomes very pronounced.

The area at Marshes North, Aghaboys and Bellurgan is very flat and subject to flooding. Fields tend to be small and are divided by traditional hedgerows, which are poorly kept. Rush infestation is evident.

Bellurgan Point, which once was a station along the old dismantled railway line, went into decline when the line was closed almost 50 years ago.

There are extensive views when looking northwards towards Slieve Gullion, Feede and Carlingford Mountains.

Landform and Landcover.

The main rock formations are Dinantian limestones from the early Carboniferous period and turbidite with red mica and red shale from the late Ordovician /Silurian period. There are two small areas of igneous intrusions of early Gabbro, one of which is Trumpet Hill.

The glacial deposits are boulder clay with glacial sands and gravels of morainic origin, and also some raised marine deposits around the river basins and coastline.

The soils are acid brown earths with a mix of gleys and brown podzolics. Around the Dundalk Bay area the soils are gleys with grey brown podzolics which are mainly wet mineral and organic soils. There are a few small areas of lowland peat bog.

In the west and east of the area the lands are marginal. In the Sheelagh area rock outcrops are noted, displaying the shallowness of the soil cover. In the Dundalk Bay Area the land is poorly drained and for this reason a large part of it is included in the designated Dundalk S.P.A.

This area provided the major source of water to the Dundalk area by means of two catchment areas and 2 aquifers. However the catchment areas are still being retained. The new main source is now being extracted from Lough Muckno in Monaghan via the River Fane for the past few years.

The igneous formation at Trumpet Hill, displays rocky outcrops with Bryophytes and varieties of ferns with quite a large cover of broadleaf woodland. It is listed as a proposed N.H.A.

There is another group of broadleaf trees at Aghnaskeagh, a high percentage of which are of native beech.

Human Intervention

There is a good mix of tillage and pasture in the centre of the area with traditional hedgerows of thorn, ash, sycamore, bramble and elder.

In the northwest there is evidence of loose stone walls which enclose fields of pasture mainly. Rush and fern infestation are noticeable in the lower reaches of the Flurry River where there is a high water table level which has given way to poor farm management.

This area is no exception to the wealth of archaeological items that are evident throughout the county. Items include souterrains, ringforts, holy wells, sweat-houses, cairns etc. Castlerocke (13th Century) is a stark monument in the landscape being situated on top of a high rock outcrop. Proleek Dolmen at Aghnaskeagh is also of special archaeological interest.

Faughart is associated with the epic poem Táin Bo Cuailgne and later with the old monastic site where St. Brigid spent part of her ministry. In this connection a shrine has been built a short distance from the old monastic site where a religious festival is carried out in July each year.

Bellurgan, Faughart Lr, Kilcurry, Ravensdale and Sheelagh are the listed settlement centres for the area.

The N53 National Secondary Route links Dundalk with Monaghan. It's relative straight line alignment in this terrain is highly unusual - in that it undulates up and down the land formation with little or no deviations. A similar situation exists along the Dundalk – Forkill Road. The new motorway bypass of Dundalk will create an interchange with the N53 and a major interchange at Ballymascanlan.

Landscape Sensitivity

Sand and gravel quarrying is possible in the basins of the two rivers. However, the density of isolated housing and the limited capacity of the county road network is likely to militate against it.

Any significant land drainage or reclamation in the Flurry estuary would impinge on the Dundalk Bay S.P.A.

This area is at the gateway to the Carlingford peninsula, Slieve Gullion Complex and Northern Ireland making it an attractive area for tourist and visitor accommodation.

This area will continue to be an attractive location for urban generated housing and a clear demarcation between urban and rural areas is required. Otherwise the countryside will become "urbanised" in due course. The small development centres of Bellurgan, Faughart, Kilcurry, Ravensdale and Sheelagh should be capable of meeting that demand.

This landscape will undergo significant change on two accounts, with the completion of the Western Motorway Bypass and the construction of the Northern link from Ballymascanlan, where the roundabout is to be at a raised level. Secondly, the interchange strategy will allow for development on the town side of the Castleblayney Road and Ballymascanlan junctions. To minimise the visual impact good landscape design will be required and should form part of all new developments in the area. In particular there are some fine broadleaf tree specimens which should be retained as far as possible.

Afforestation would be sustainable in the area towards the west provided that the water quality and aquatic ecosystems of the area are protected. The eminence of Roche Castle should not be diminished. The Forestry Service state that planting is not permitted in S.A.C.s and S.P.A.s which rules out a large area of the Flurry estuary.

Wind farms are not likely to feature in this area for at least two reasons, viz. an inadequate wind resource of less than 7.5 m/sec and the density of isolated housing.

Lower Faughart, Castletown and Flurry River Basins

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ This area enjoys the scenic quality of the surrounding landscape of the Carlingford Mountains in the east to Slieve Gullion and beyond. ▪ Significance of Dundalk Bay as an S.P.A. around the Flurry estuary ▪ Geological feature of Trumpet Hill which is largely obscured at present. ▪ Open air recreational opportunities are plentiful. ▪ Fine broadleaf tree cover in the Ravensdale, Ballymascanlan and Deer Park Road. ▪ The eminence of Roche Castle 	<p>Conserve /enhance</p> <p>Conserve/ enhance</p> <p>Conserve /enhance</p> <p>Conserve/enhance/create</p> <p>Conserve</p> <p>Conserve</p>
Overall Classification	Local

LOUTH DRUMLINS & LAKE AREAS

LANDSCAPE EXAMPLES
IN THIS AREA.



Louth Drumlin and Lake Area

Key Characteristics

- Southeast tip of the large Drumlin areas extending into Connacht and Ulster.
- Typical landform of the Drumlin glacial drift.
- Areas of biodiversity and ecological interest.
- Sparsely populated in comparison to the rest of the county.
- Strong sense of landscape enclosure created by the landform.
- Areas of scrub and rush invasion.
- Dominance of power lines

Landscape Description

The area marks the eastern tip of the Drumlin area, which extends west into the reaches of the Shannon and northwards toward Louth Neagh. It contains the familiar rounded and smooth hills normally associated with this landscape. Land improvement has reduced the low-lying marshy areas enclosed by Drumlins. There are only three small loughs, which are normally a feature of these landscapes, types viz. Drumcah, Toprass and Cortial, none of which are readily accessible.

The enclosure afforded by the rounded hills gives an intimacy to the area. The roads meander to and from and up and down through the hills thereby creating a varying landscape at each turn to the traveller.

Where trees are planted on hilltops they become focal points in the area.

Apart from Carlingford the area is the least densely populated part of the county where old farmhouses are still in the ascendancy.

Given the land formation and land cover in this area there is a sense of “rurality” quite distinct from any of the other landscape areas.

Landform and Landcover

The bedrock in this area is primarily, calcareous Red mica greywacke and turbidite with red mica and red shale from the Ordovician /Silurian Period.

Glacial deposits are primarily boulder clay with a small area of glacial sands and gravels of morainic origin between the Carrickmacross and Castleblayney roads. Soils are acid brown earths with inter-drumlin peat and peaty gleys.

As the glaciers subsided they left a unique landscape feature, which is comprised of rounded hills which in turn, enclosed hollows giving rise to bogs and small lakes. For this reason drumlin areas provide a variety of habitats which are of ecological importance. In addition to the lakes already mentioned, Reaghstown Marsh is listed as a proposed N.H.A.

There are no significant woodlands in the area. However, broadleaf trees are a feature of the mature and sometimes overgrown hedgerows.

Human Intervention

The topography and soil types tend to dictate the predominance of pasture farming in the area. Field patterns are small and bounded by the same traditional hedgerows of the past few hundred years. Some loose stone walls are in evidence.

Like the rest of the county the area is rich in recorded archaeological items with Special Interest Areas in Castlering, and Louth Village.

The road network is comprised in the main of a series of country roads, which simply follow the contours of the drumlins and where the traveller can very easily become disorientated. Where the N2 along the Ardee/Carrick Road has been realigned, the landform becomes more apparent.

The pressures for isolated housing are not as obvious as in the rest of the county. However where they do exist, the large new houses are usually raised above the road and can be out of scale with the enclosed nature of the landscape.

Louth and Reaghstown are the only villages in the area.

Electricity power lines are in abundance in to and out of the E.S.B. station at Monvallet. The visual impact is increased by the fact that the pylons by definition must be located in straight lines close to the top of the hills.

Landscape Sensitivity

This area is sensitive to change but the forces for change are not as intense as in the rest of the county. Any significant change in types of farming practices could have implications for biodiversity e.g. the small headwater lakes of the Fane (Cortial, Toprass and Drumcar, (N.H.A.s) could very easily undergo eutrophication or pollution.

The existing hedgerows are generally robust and in themselves add a distinctive feature to the Drumlin landscape. Their removal whilst exposing the Drumlin landform would dramatically change the landscape.

Limited quarrying may take place in one of the few pockets of glacial sands and gravels in this area. However the road network is hardly capable of sustaining this level of traffic.

The built environment has not changed to the same extent as in other areas but where new housing has taken place the impact has been dramatic. The tops of drumlins are particularly

appealing. The situation is exacerbated by the fact that the necessary access visibility standards for each house usually requires the removal of existing mature hedges for distances far in excess of the site frontage.

Drumlin areas are generally suitable for afforestation but to date there has been little or none in this area. Drumlin hollows are suitable provided that the biodiversity of those wet areas are not seriously threatened. The lower level hills might be covered in their entirety provided the outline of the other hills is not diminished. A patchwork quilt of hills, some with forests and the next one with none, should be avoided. Again there should be a broadleaf mix.

Careful consideration should be given to new telecommunications masts in this area as the normal location is on top of hills. In this regard other alternatives as suggested in the D.O.E.'s guidelines should be investigated.

Theoretical wind speeds vary from 7.0 – 8.0 m/s and proposals for wind farms are not anticipated. However it should be stated that this landscape does not lend itself to this form of development where the scale of even one turbine on a hilltop, would be incongruous.

Louth Drumlin & Lake area.**Landscape Values & Classification**

Key Values	Objective
<ul style="list-style-type: none"> ▪ Unique shape of drumlins formed by the deposition of material from the glacial age. ▪ Landscape quality is very robust and gives a sense of enclosure and unusual rurality. ▪ The few lake areas are small but not readily accessible. ▪ This Landscape Area type is replicated on the Monaghan side, where just a short distance from the Louth border lies the small village of Inishkeen which was the home of Patrick Kavanagh, the 20th century poet & playwright. In his writings he often refers back to the landscapes of his birthplace. 	<p>Conserve /enhance</p> <p>Conserve/ enhance</p> <p>Conserve /create</p>
Overall Classification	Regional

MUIRHEVNA PLAIN

LANDSCAPE EXAMPLES
IN THIS AREA.



Muirhevna Plain

Key Characteristics

- Serves as a major traffic corridor between North and South.
- Extensive plain located between the Carlingford/Slieve Gullion mountain complex and the uplands of Collon and Monasterboice.
- Rich soils are conducive to extensive agricultural practices both in crop and animal production.
- Robust hedgerows give a sense of enclosure.
- The nature of the topography has had the effect that a number of small meandering rivers drain the flat landscape.
- Contains a number of fine broadleaf wooded areas around country houses.
- Area is rich in archaeological features.
- Renowned for its mythological past leading to the definition of the Táin Trail.
- Isolated housing is very evident especially in the eastern half.

Landscape Description

This area is by far the largest landscape area in the county. It extends from the top of the Boyne Valley up to the and including Dundalk. It is identified for its flat undulating features drained by the meandering lazy rivers of the Fane, Glyde, White and Dee rivers. It contains the most fertile agricultural land in the county, which gives an overall impression of good farming husbandry. In the western half the landscape horizon is limited due to the smaller field patterns with their mature hedgerows and trees. The new motorway, when travelling north, offers uninterrupted views of the Cooley mountains for miles.

Landform and Landcover

In the Blackhall area there is a variety of black mudstones, quartzose and calcareous grey wackes, from the Ordovician/Silurian period. Around Ardee there are undifferentiated groups of limestone, mudstone and sandstone from the Carboniferous/Dinantian Period.

For the greater part of this area, from Salterstown to the western and northern boundaries, there are calcareous limestones, banded mudstones, calcareous red-mica greywackes and turbidites with red mica and red shale.

Glacial deposits comprise in the main of boulder clay and kames along the basins of the Glyde and Dee rivers.

The soils in the area are essentially of two types viz. Acid brown earths with some gleys and brown podzolics; and gleys with brown earths and peaty gleys.

Water to supply the area is abstracted from the rivers Fane, Glyde, Dee and White Rivers. In addition there are 4 aquifers in use.

Whilst there are little are no commercial forests in the area, it abounds in small woodlands which are primarily broadleaf in character, particularly beech, with some oak and chestnut occasionally. Many of these trees are entwined with the ubiquitous climbing ivy. Ardee is particularly rich in tree cover. Other areas include Barmeath (N.H.A), Blackhall (N.H.A), Corderry, Darver (N.H.A.), Drumcar, Drumcashel, Lisrenny House, Rathbrist and Stephenstown.

In addition Louth Hall, Stabannon/Braganstown, Stephenstown Pond, and Ardee Bog are proposed National Heritage Areas.

Rathescor Lake is in charge of The Irish Game Council and is worthy of a N.H.A. designation.

Human Intervention

Field sizes are generally larger in this area than elsewhere in the county. There is some evidence of hedgerow removal to facilitate more intensive farming. Hedgerows consist in the main of thorn, bramble, ash, sycamore, elder and generally maintained in their mature state thereby limiting any extensive views. In some cases the trees on both sides of the road merge, giving a shaded arched effect. The rich soils allow for a wide range of tillage and grassland enterprises. Where intensive animal production takes place it would generally be in beef farming with some mushroom units. The hedgerows tend to obscure and minimise the visual impact of any large farm structures.

Because of the inclusion of Dundalk and Ardee and the manageable nature of the landscape it is not surprising that the highest density of archaeological recorded monuments (particularly souterrains) occurs in this area with the figure in excess of 500. The towns of Dundalk, Ardee and Dunleer are also considered to be of archaeological importance in their own right.

There are some mythological events identified within this area. Táin Bo Cuailgne records the exploits of Queen Maeve and Cú chulainn when the former stole the prized Bull of Cooley from Ulster. Cú chulainn endeavoured to defend Ulster and to regain the Bull from captivity, and return it to the Cooley area. Cú chulainn's slaying of Ferdia at Ardee (after which the town was called) was one of those skirmishes.

Throughout this area there are a number of old country estates with existing houses on them e.g. Athclare Castle, Glyde Court (fast becoming a ruin), Drumcar (now a hospital), Darver Castle, Smarmore Castle, Barmeath Castle and Rokeby Hall.

Milltown village (near Termonfeckin) is listed as a conservation area of architectural merit.

The new motorway (M1) passes through the area and has five junctions along it. The Dublin - Derry N2 and Dundalk -Limerick N52, passes through Ardee at present, and a bypass is being proposed to relieve the traffic congestion in the town. Apart from Dundalk other listed settlements include Knockbridge, Tallanstown, Dromin, Darver, Mansfieldstown, Smarmore, Stabannon and Sandpit. The Dublin Belfast railway offers views of the farmlands and landscape which might not be readily seen from any public road.

Isolated rural housing is much more obvious in the eastern half of the area, due to the influence of the two large county towns and the more open landscape.

There are a number of telecommunications masts in the areas, which in most cases have been located on sites set well back from public roads.

E.S.B. power lines (220 kv) are quite obvious in the landscape.

Landscape Sensitivity

The existence of glacial kames suggests that sand and gravel is a possible mineral resource leading to proposals for quarrying in this area. In the event of permission being granted, it should have a relatively short life span, or phased into a series of small areas which should be returned to their former state as soon as possible.

The soils and topography dictate that farming in this area is the most intensive in the county. In this open flat landscape the removal of traditional hedgerows would have a significant impact on the landscape. Where in some cases hedgerows have to be removed their replacement should be a similar hedgerow and not a post and wire fence, wooden fence, or brick wall.

The rivers Glyde, Dee and Fane have the potential for change in terms of recreation and fishing which can be both positive and negative.

Ardee bog (proposed N.H.A.) is currently under threat from land drainage. The proposed N52 bypass of the town touches on the area also. Another area under threat is the proposed N.H.A. at Stabannon-Braganstown by land reclamation. This bog is an important ecological, botanical, zoological and ornithological site.

With regard to the built environment the question of isolated housing continues apace. The scale of the houses themselves is difficult to integrate into this flat open landscape. New farm buildings, if feasible, should be scaled down so as to have several small units rather than one very large structure.

The recent vandalism and dereliction of Glyde Court House is regrettable, making its reinstatement much more difficult to achieve.

Many of the small broadleaf woodlands are at maturity stage and their regeneration and tree replacement should be encouraged. Commercial farming is not expected to occur in this area, but in the event of it happening, it should be set back from the roadside so as to retain the general

open landscape character of the area and have a 30% broadleaf mix. Any forestry in proximity to the motorway should not interfere with the scenic views for the motorist travelling north.

With theoretical wind speeds of less than 7.5 m/s the building of wind farms is not likely in the current economic energy climate. The least sensitive area in this regard would be north-west of Ardee where the hedgerows are robust and mature.

Muirhevna Plain

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ Extensive area of good quality agricultural land with fine traditional hedgerows. ▪ Small but very fine broadleaf woodlands throughout the area and within the town of Ardee. ▪ High density of archaeological features, particularly souterrains. ▪ Contains four proposed N.H.A.s ▪ Rathescar Lake worthy of N.H.A. status. 	<p>Conserve /enhance/restore</p> <p>Conserve/ enhance</p> <p>Conserve</p> <p>Conserve /create</p> <p>Conserve /create</p>
Overall Classification	Regional

DUNDALK BAY

LANDSCAPE EXAMPLES
IN THIS AREA.



Dundalk Bay Coast

Key Characteristics

- Land is relatively flat and not higher than 20m O.D.
- Seashore is mainly of marsh at the northern end, which gives way to sandy beaches in the south. Coastal erosion is evident.
- Well-defined hedge rows with larger fields. Some examples of old Country house estates with broadleaf planting.
- Main settlements are Blackrock, Dromiskin, Castlebellingham/Kilsaran and Annagassan.
- Motorway to the west has reduced the traffic along the old N1
- The area is rich in archaeological features.
- Dundalk Bay is a designated Special Protection Area (SPA).
- Isolated housing is very evident.

Landscape description.

The area extends from the marshes in Dundalk to Dunany Point and varies from ½ km to 2 ½ kms in width, inland from the coastline. The landscape is quite flat and seldom rises above the 20m O.D. contour.

The predominant land uses are non irrigated arable land and pastures. Due to the shallowness of Dundalk Bay the intertidal area presents an expansive landscape at low tide of salt marshes and sand, and has the potential for increased recreational use. The old N1 (Dublin – Belfast) has been downgraded to regional route status following the opening of the new motorway to the west, which adds to the landscape quality of the Castlebellingham/Kilsaran area.

Two of the rivers that drain the Muirhevna plain pass through this area before discharging to the sea; viz. The Fane at Blackrock, and the confluence of the Glyde and Dee at Annagassan.

Landform and Landcover

The bedrock between Dundalk and Castlebellingham is mixture of turbidite with a mixture of red shale, and red mica from the Ordovician /Silurian period, along with a few igneous intrusions. At Salterstown there is a band of calcareous red mica greywackes with other greywackes and mudstone at Dunany. Above that there is the glacial drift of raised marine deposits of gravel extending along the coastline. Inland from that boulder clay which covers the greater part of South Louth can be found. The landscape is flat in the north and just above sea level with the exception of Dunany Point where there are cliff faces down to the shoreline.

The major division of soils area Acid Brown Earths with a mixture of Gleys and Brown Podzolics which are well drained and have a wide use range for tillage and pasture. There are 3 pockets of gley soils with a mixture of brown earths and peaty gleys at Dundalk, Dromiskin and Salterstown.

There are several groups of broadleaf trees at Salterstown, Castlebellingham and Dunany and one small commercial/conifer forest.

Dundalk Bay is designated as an S.P.A. and is recognised as being of special ornithological value. Bird flight paths at dawn and dusk between the bay and the marshes at Stabannon/Braganstown (approx. 5 kms distance) are well documented. Despite the fact that Dundalk Bay is very shallow, coastal erosion is a problem at Annagassan and Salterstown.

Three scenic routes have been listed in the 1997 Development Plan viz. Coast Road Annagassan/Salterstown, Seabank/Castlebellingham and Blackrock village. Three viewing points are similarly listed at Hermitage, Annagassan and Salterstown which provide panoramic views across Dundalk Bay towards the Cooley Mountains.

With the recent completion and commission of the new Dundalk Sewerage Scheme the environmental quality of Dundalk Bay will be greatly enhanced.

Human Intervention

The area is rich in archaeological items (approx. 80). The important sites are the Round Tower, Cross and Church at Dromiskin and the Motte at Greenmount. Salterstown has been designated as a settlement worthy of special architectural interest.

Field patterns and hedgerows are those found commonly throughout the county and have largely remained unchanged for the past few hundred years. There is evidence of hedgerows being removed. Loose stone walls occur in some areas which indicates the shallowness of the overburden above the underlying geology.

Blackrock has developed from being a holiday resort to a dormitory suburb of Dundalk. The ambience and tranquillity of Castlebellingham/Kilsaran has dramatically improved with the new motorway. The former village is described as a 'land lord' village with its castle, gatehouse and widows cottages. Annagassan has a small quay and continues to be used albeit in a small way. The bridge in the village is a listed structure. Dromiskin village has experienced a massive 30% increase in population in the past six years.

The road network in the Dunany promontory comprises a series of cul-de-sacs leading to the shoreline, giving a sense of remoteness and inaccessibility.

Isolated housing is very prevalent and conspicuous in this flat landscape.

Landscape Sensitivity

The existing farming practices are unlikely to change. Further removal of hedgerows and stone walls, whilst extending the panoramic views available in the area, would alter the landscape character.

However further diversification in the horticulture sector is possible where there is easy access to Dublin markets. Accommodation for rural tourism can be expected to expand. The expansion of mariculture is possible between Salterstown and Dunany.

The road network in the Dunany area is not capable of sustaining significant increases in physical development in that it would interfere with existing tree cover in the area.

Broadleaf and mixed forestry (30% broadleaf 70% conifer) would be sustainable in this L.C.A. and particularly in the Salterstown-Dunany area.

There is no serious threat to the area for the introduction of further telecommunication masts given the existing coverage in the area.

Windfarms in the present economic energy climate are not likely to emerge in the immediate future due to the low theoretical windspeeds in this area. However, offshore masts may be a possibility in the shallow reaches at Dundalk Bay.

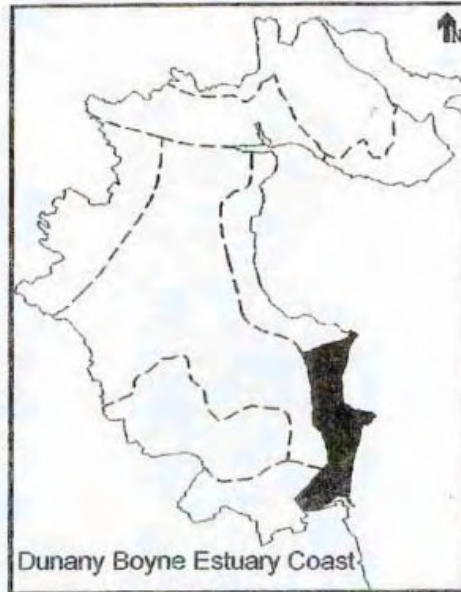
Dundalk Bay Coast

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ Dundalk Bay (S.P.A.) Saltmarsh and mudflats with full range of plant communities. Very important for wintering and migrating wading birds. ▪ Some fine groups of broadleaf trees. ▪ Impressive coastal routes of high scenic quality. ▪ Dunany Point area where there is a sense of tranquillity due to the low levels of the of the built environment, traffic and noise. ▪ Opportunities for recreational pursuits with particular emphasis on the river edges and coastline. ▪ Rich in archaeological features. ▪ Landlord village at Castlebellingham. ▪ Existing hedgerows and stone walls. 	<p>Conserve</p> <p>Conserve</p> <p>Conserve/restore</p> <p>Conserve/restore</p> <p>Conserve/enhance/restore</p> <p>Conserve</p> <p>Conserve/enhance/restore</p> <p>Conserve</p>
Overall Classification	Regional

DUNANY, BOYNE ESTUARY COAST

LANDSCAPE EXAMPLES
IN THIS AREA.



Dunany- Boyne Estuary Coast.

Key Characteristics

- Landscape is flat and undulating with the exception of the Head at Clogherhead and Castlecoo Hill.
- Clogher Head is a dominant promontory when viewed from the west, south and east (part of which is a proposed N.H.A).
- Area has an extensive sand beach for practically its entire coastline with some dune formations, which are subject to tidal, wind and traffic erosion.
- Area has one S.A.C. viz. the Boyne Coast and Estuary (1957) of which the Estuary is also an S.P.A.
- Field patterns vary from being reasonably large on the flat landscape to being smaller around the raised ground of the Almondstown/Glaspistol area.

Description

The area extends from the cliffs at Dunany Point to the estuary at the Boyne.

The topography of the land is predominantly flat at the northern end and rises up to Castlecoo Hill near Clogherhead only to descend back down into the Termonfeckin Valley. The head at Clogherhead is a dominant feature in the landscape when viewed from the north, west and south. With the exception of the promontory at Clogherhead the coastline has a continuous stretch of sandy beaches with dune formations between Clogherhead and Baltray. These dunes have been utilised to develop two of the leading golf links courses in the country.

Within its fine coastline the area is very popular for day-trippers from Monaghan, Cavan, and east Meath.

Landform and Landcover

Between Dunany and Termonfeckin there are several formations of calcareous and quartzose, greywackes with black mudstones from the Ordovician-Silurian Period. From Termonfeckin to Baltray there is a pale micritised grainstone-wackestone from the Carboniferous period. Rock outcrops are evident at Clogher Head and Castlecoo Hill, which are of geological interest.

The glacial deposits are primarily boulder clay with some late glacial and postglacial raised beaches along the shoreline.

The soils in the main are Acid Brown Earths with small percentages of Gleys (15%) and brown podzolics (10%) giving rise to a rich soil in the area.

Land Drainage is effected by a series of small streams, the biggest of which is the river passing through Termonfeckin and which runs dry in drought periods. At present two aquifers are used as a source of public water supplies.

There are no significant areas of conifer trees in the area. However, there is the very attractive sylvan village of Termonfeckin with small broadleaf plantations at Newtown House, Beaulieu House, Blackhall and the Drogheda Baltray road. These woodlands which contain some beech and oak, give the area a sense of being heavily wooded. Blackhall Woods are listed as a proposed N.H.A..

Due in part to the maintenance of hedgerows fine views are common in this area. Two scenic areas are being listed in the Development Plan viz. Clogherhead as an Area of Outstanding Natural Beauty and the lands at Ganderstown as being of High Scenic Quality.

Apart from being a dominant feature in the landscape Clogher Head is of botanical and ecological importance. The Boyne Estuary with its mud flats and salt marshes has been designated as an S.P.A. The Boyne Coast is a designated S.A.C. Dunany Point is of geomorphological interest and listed as a proposed N.H.A.

Human Intervention

The area is rich in archaeological sites with standing stones, souterrains and holy wells. Termonfeckin is listed as an important archaeological area. Once a holiday resort, Clogherhead has now become a permanent settlement in its own right. Baltray is a quaint seaside village with a lot of its old character of small houses and cottages still largely intact

Agriculture is mixed tillage and pasture where farm holdings are generally larger than in the north county. Old field boundaries are being maintained and defined by the common hedgerows trees of thorn, ash, sycamore along with the invasion of bramble. Dry stone walls exist on the higher ground near Clogherhead and Castlecoo.

The road network in the area is set out in a grid like pattern of North/South and East/West which allows for easy access to the beaches in the area.

There is evidence of dune erosion where motor vehicles are able to park on the sand dunes.

Caravan parks and chalet developments have evolved over the years in proximity to the beaches. The new housing at Seapoint Golf Club sits uneasily close to the dune system.

Again isolated housing is very evident throughout the area. The situation is exacerbated by the flat landscape and the large scale of the houses themselves.

Beaulieu house is a very fine example of a country home set well back from the road with its fine landscape of trees. The clachan of Milltown is a listed conservation area of the built environment.

Apart from farming the main economic activity in the area is that of Port Oriel fishing harbour. Some mussel fishing exists at the mouth of the Boyne. The large reservoir at Baltray is used to store seawater to allow for the processing of Periclase at the old Cement Factory in Drogheda.

Telecommunication masts are located in Clogherhead and on the raised ground at Almondstown.

Landscape Sensitivity

Being a maritime area, with a very accessible coastline containing fine beaches, makes it attractive for all forms of the built environment such as permanent and holiday homes, tourist accommodation, and recreational facilities. The area most sensitive to change is that north of Termonfeckin where the topography of the land rises up at Castlecoo and falls back down to the coastal plain north of Clogherhead. The completion of the new sewerage scheme in Termonfeckin and Baltray, should reduce the demand for urban generated housing and provide for some of the needs of the tourist industry. However the extension of the existing ribbon development at Ballydonnell should be resisted when this scheme is operative.

Given the existence of the REPS programme no major changes to farming methods are anticipated.

As the beaches are subject to erosion, improved access including parking facilities should not be encouraged.

Some mixed forestry might be accommodated on the marginal land at Castlecoo Hill but not on Clogher Head.

Baltray & Clogherhead are just below the 8 m/sec wind speed contour. In the former case the land is presently covered by two golf courses and also an S.A.C. In the latter case, access to the grid network would be difficult in terms of distance. The Head itself is a proposed N.H.A. and of high landscape value. Neither site is likely to be suitable for a wind farm.

Port Oriel harbour has been improved in the recent past and further expansion may be sought to meet the future needs of this traditional local industry. Road access between the port and the village should be retained as it is or and only improved if absolutely necessary to meet the minimum requirements. Alternative pedestrian access should be considered.

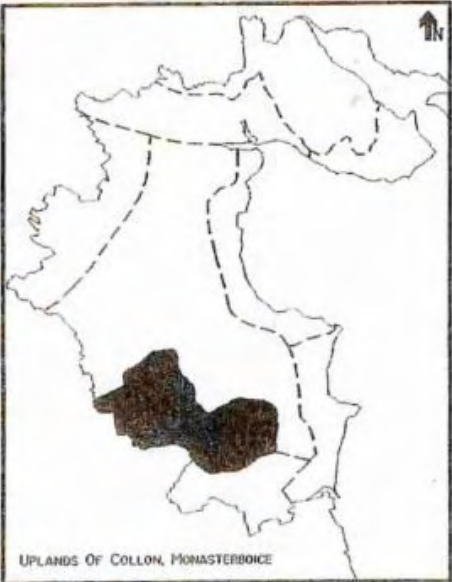
Dunany Boyne Estuary Coast

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ The rare feature of Clogher Head (p.N.H.A.) as a landscape item with its heath which is of ecological and geological importance. ▪ Extensive sandy beaches with vulnerable dune systems particularly at Baltray with has a good diversity of habitats. ▪ Recreational opportunity is significant with its zone of influence extending into neighbouring counties.. ▪ Find groups of mature broadleaf trees giving a landscape quality to the area. ▪ Charming villages at Termonfeckin and Baltray. The former is noteworthy for its sylvan setting and archaeological importance. The latter for its very random cottage layout at the end of a cul-de-sac. ▪ Boyne Estuary of mudflats used by wintering wildfowl and waders (S.P.A.). ▪ 17th Century Beaulieu House (built by Sir William Tichborne) and said to have been designed by Wren. 	<p>Conserve</p> <p>Conserve & Restore</p> <p>Conserve/enhance</p> <p>Conserve</p> <p>Conserve, enhance, restore</p> <p>Conserve</p> <p>Conserve</p>
Overall Classification	<p>Regional</p> <p>Clogher Head to be considered as an Area of Special Amenity by reason of its Outstanding Natural Beauty and its Special Recreational value</p>

UPLANDS OF COLLON & MONASTERBOICE

LANDSCAPE EXAMPLES
IN THIS AREA.



Uplands of Collon and Monasterboice

Key Characteristics

- Elevated plateau which offers views in each compass direction.
- The landscape in the Brownstown and Carricknashanagh areas display small fields with and loose stone wall elements similar to west of Ireland landscapes.
- Area is very rich in archaeological monuments.
- The area continues to remain a source for public water supplies.
- Area has two proposed N.H.A.s.
- Demand for isolated housing continues and this is exacerbated by the intricate network of roads in the area.
- Number of masts at Mount Oriel.
- Some fine examples of woodlands in the area.

Description

The area extends from Ballymakenny in the east to the Meath boundary in the west and from the north of Drogheda to South of Ardee. Its boundary is dictated in the main by its elevation landform rising up from the Muirhevna Plain and the Boyne/Mattock Valley.

The area is transversed by the new motorway, which is nearing completion, and the N2, which links Dublin with Derry. These two factors have brought this area within the commuter belt of the greater Dublin area.

The area is quite popular with tourists and forms part of the Boyne Valley itinerary which straddles into Co. Meath.

This elevated area is divided by a short shallow valley between Tinure and Cordogan. As a consequence the varying geology and soils in the area have strongly dictated the variety of landcover in terms of vegetation, field patterns and field boundaries.

Landform and Landcover

The bedrock is from the Ordovician – Silurian Period and comprises in the main a thinly bedded calcareous greywacke banded mudstone, black mudstone, siltstone and greywackes, with numerous faults throughout. Rock outcrops are quite common in the Brownstown/Fieldstown areas.

The glacial drift in the area is mainly boulder clay.

In the Monasterboice Fieldstown area the soils are brown podzolics with percentages of gleys and podzols. Elsewhere they are mainly gleys with some grey brown podzolics.

The area is drained in many directions by the rivers, Boyne, Dee, White and Termonfeckin. The Monasterboice area is still retained as a water catchment area for the reservoir at Barnattin which once was the primary water supply to Drogheda. Three aquifers for public water supply are still used in the area.

The greater part of the area is above the 100m contour with three hills being higher than 200m viz. Dunmore, Mullaghash and Mount Oriel being the highest at 251m.

Within this area the Council have identified in their Development Plan two areas of High Scenic Quality viz. Collon and Monasterboice.

Two views and prospects & two viewing points are listed to be of note in the Development Plan..

There are two proposed N.H.A.s in the area viz. New Mellifont Abbey Woods which is of ecological, botanical and zoological importance along with Kildemock Marsh, which is dominated by common reed due to lack of drainage.

There are some striking areas of tree cover at New Mellifont, Ballymakenny, and Piperstown. The conifer tree clump on the top of Mullaghash is a very distinctive feature in the landscape when viewed from the Ardee area.

Human Intervention

This area is particularly rich in archaeological items with approximately 110 recorded features. Collon is listed as a village of archaeological importance. The complex of Round Tower, Crosses and Church at Monasterboice is recognised as a National Monument and included in the itinerary of tourists who visit the Boyne Valley.

As the soils are shallow in the higher areas being they have limited use value and are generally given over to grasslands. There are many outcrops of rock in the area which give rise to small field patterns with loose stone walls and wind swept hedgerows.

Elsewhere the land is set out in grasslands with some tillage.

Collon and Tinure are the two main villages in the area with Fieldstown and Philipstown being category two development centres. Isolated housing, giving way to ribbon development, is evident at Fieldstown, Balgathern and Monasterboice. These areas with their elevation are very attractive for urban generated housing from Drogheda and further afield where land is valued more for its development potential than for its agricultural value. The situation is also exacerbated by the large scale and massing of individual houses in this open landscape.

Ballymakenny Church is noted for its architectural merit. New Mellifont which is run by the contemplative Cistercian monks at Collon is a fine example of an old country house and estate with its farm and commercial horticultural enterprise and its large cover of conifer and broadleaf trees.

The new motorway is in a cut where it passes through Balgathern to Monasterboice. Despite its elevation the area has a large number of county roads which penetrate the entire area.

There is a large stone quarry at Gallstown which has only opened in the past five years and which supplies the construction industry and road building programmes. The old Collon stone quarry remains closed. In a few other areas there is evidence of some rogue material extraction.

Mount Oriel has a number of masts located on it for radio and telecommunications which tend to degrade the landscape in this elevated location. At Dunmore (beside Mount Oriel) an application for planning permission for two wind turbines has just been granted. 220 kv overhead E.S.B. lines cross through the Collon scenic area.

This area contains the Whiteriver landfill site to the north of Collon.

Landscape Sensitivity

Due to the shallow overburden over the greater part of the area, stone quarrying is likely to continue. In those areas above the 100m contour new quarrying developments would tend to degrade the landscape particularly those designated as being of high scenic quality.

The area is a source of public water supply. Farming methods and all new building must take this matter into account.

The new motorway and the N2 provide two national corridors to the north and bring this area within commuter distance of Dublin together with its attendant development pressures as experienced in the Tinure and Collon areas. The demand for urban generated housing is likely to continue as already occurred in the Monasterboice and Hamlinstown areas.

There are some very good examples of loose stone walls which are used to define small field patterns particularly in the Brownstown, Fieldstown and Carricknashanagh townlands. These features are under threat as the area is traversed by very narrow roads and lanes which are incapable of accommodating further increases in traffic.

A small zone around the National monument at Monasterboice should be identified to exclude all forms of development and preserve the integrity of the monument.

New afforestation is possible and the area will be sensitive to such change. Care should be taken not to block designated views or prospects or be planted too near roads where other landscape views might be severely restricted. Forest edges should follow appropriate contours and not necessarily field boundaries. A 30% mix of broadleaf is recommended. Archaeological items should not be interfered with.

A large part of the Collon area is between the 7.5 and 8 m/s wind speed contours. On the basis of the recent decision to grant permission for two turbines decision further submissions may be expected. The top of Fieldstown hill has also the same contour profile. Access to the latter site is difficult and landcover is at a minimum, making the Fieldstown site very sensitive to this type of

development. In the Collon area, existing mature hedgerows along with trees would identify this area as being the least sensitive of the two.

Uplands of Collon & Monasterboice

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ Landscape quality is quite high with a variety of landcover elements. ▪ The elevation of the area allows for a large number of views which have a high scenic quality value. ▪ Rich in archaeological features, notably the round tower, high crosses and churches at Monasterboice. ▪ The Fieldstown, Brownstown, Carricknashanagh areas offer a sense of tranquillity and isolation close to Drogheda. ▪ New Mellifont Cistercian Monastery with its large estate, the greater part of which is a proposed N.H.A. 	<p>Conserve /enhance/restore</p> <p>Conserve/ enhance/restore</p> <p>Conserve</p> <p>Conserve & restore</p> <p>Conserve</p>
Overall Classification	Regional

BOYNE & MATTOCK VALLEY

LANDSCAPE EXAMPLES
IN THIS AREA.



Boyne and Mattock Valleys

Key Characteristics

- Land tends to slope southward presenting panoramic views of Drogheda, the Coast and the plains of Meath. This landscape area should be considered as one which includes the southern side of the Boyne as defined by Meath Co. Council.
- Noted for its archaeological, historical and landscape values.
- New motorway Boyne Bridge has already become a dominant landscape icon. New interchanges will attract new commercial and industrial development.
- Drogheda town is recognised as being within the commuter belt for the greater Dublin region where in-migration is expected to increase at an even greater pace than in the past.
- Hinterlands of Drogheda are subject to pressures for further isolated housing development, mainly generated from within the town itself.
- The area is quite extensively covered with broadleaf trees and fine hedgerows.
- Popular Tourist destination particularly for bus tours from Dublin and beyond.
- Disused quarries tend to degrade the landscape qualities.

Description

The area slopes gradually down from Monasterboice and Collon, with a lot of tree cover and mature hedgerows concealing the landform of the area.

The Boyne River is tidal for quite a distance west of Drogheda and the Mattock is a tributary of same. This area, apart from the high quality of its landscape, is identified more for its religious and military, historical past. When Cromwell came to Ireland in 1649 he was determined to take revenge on the Irish for the massacre of Protestants and remove the power of Catholicism. At that time two thirds of the county was in the hands of the 'old' English who were mainly Catholic.

Drogheda was sacked by him. Whilst the rest of the county was being Anglicized, Drogheda put their allegiance behind the Catholic King James II when he arrived in 1689. Following defeats at Derry and Enniskillen in the same year the two sides met at the Battle of the Boyne in 1690 when William of Orange defeated James. This battle changed the course of Irish history and the legacy of the subsequent plantation and settlement policy is still evident today. William's encampment was on the north side whilst James's was in Co. Meath.

The existing N1 passes through the area and will soon be superseded by the new motorway and suspension bridge, which are nearing completion. The N51 Secondary route links Drogheda to Slane and is extensively used by tourists to the area when visiting the megalithic tombs of

Newgrange, Knowth and Dowth a World Heritage Site, just across the boundary in Meath. Tullyallen is the only settlement in this area apart from Drogheda.

Scenic routes identified in the County Development Plan are the Slane Road and King Williams Glen. The former could be improved by opening up more of the landscape to views of the river from the N51.

Landform and Landcover

The main bedrock in the town of Drogheda is a pale micritised grainstone-wackestone from the carboniferous period extending from the coast and which has a fault in the town itself.

In the Tullyallen area there is a black mudstone and quartzose Greywacke from the Ordovician period. The main glacial drift is boulder clay with kames to the west. The soils in the area are gleys and grey brown podzolics.

This area is drained by numerous small streams into the Boyne and coastline and has 8 aquifers, 6 of which supply water to the public.

The land is primarily used for pasture and to a lesser extent for crop growing. In the upper and lower reaches rush infestation and scrub invasion is commonplace.

Lower Killineer and King William's Glen have fine examples of small broadleaf woodlands; whereas in Townley hall the commercial woodlands are primarily coniferous with a small broadleaf mix. The latter two are proposed N.H.A.s.

West of Drogheda, the Boyne River islands have been designated as an S.A.C of ecological importance.

Human Intervention

There are approximately 40 items of archaeological interest in the area. Outside of Drogheda the two most important are the Townleyhall passage grave and the monastery at Old Mellifont (National Monument). The latter is a very popular place for tourists to visit in conjunction with the megalithic tombs just across the border in Meath. The new motorway bridge across the Boyne is already a dominant icon in the landscape and like its 19th century railway stone arched viaducts in the town, will, in due course be identified with this area in its own right. Tullyallen is undergoing an unprecedented rate of new housing development, whilst the land around the new interchange nearby will act as a magnet for industrial and commercial development.

Isolated housing is increasingly evident overlooking Drogheda and further afield from the Hill of Rath, Balgathern, Killineer, and Tullyallen areas.

Farming in the area is mixed pasture and tillage where hedgerows have largely remained unchanged since first planted. These hedgerows give a sense of enclosure. There are some good examples of dressed stone walls around the perimeter of old country house estates, which are sometimes planted inside with beech, oak, and chestnut trees.. In the upper areas, loose stone

walls are in evidence. Some intensive farming is in evidence with one very large pig-rearing unit at Littlegrange.

Buildings of note include Townleyhall (now attached to Trinity College) and Carstown House.

Overhead power lines (110 kv and 38 kv) are quite evident just to the west of Drogheda where they emanate from the large substation at Mell.

A number of old disused stone quarries are evident north of the town which once supplied raw materials for the old Cement Factory. One of these quarries is identified as being of geological interest.

Landscape Sensitivity

The geology of the area, has in the past, given rise to the extraction of stone. More recently local materials have been utilised to provide fill for the new motorway. The topography and groundcover, the road capacity along with its archaeological and historical importance, make this area extremely sensitive to any further expansion of this industry.

The hydrology of the area in providing water supplies make it susceptible to intensive stock rearing.

With the advent to the new motorway, tourist numbers should rise and accommodation along with facilities should be directed to the main town or villages of Tullyallen and nearby Slane.

A study of the Battle of the Boyne site is being prepared by Dúchas to establish a 'core battle area' to protect its historical integrity. When completed this will have implications for new development in the area. Likewise the visual setting of the Old Mellifont National Monument should be maintained by restricting all development, from the monument along the county road up to the nearest crossroads.

As previously mentioned the new motorway interchange will create further pressures for adjacent commercial and industrial development. The impact of landscape design should be paramount where this development is designated.

Isolated housing is already a dominant feature in the area and should be directed into Drogheda and Tullyallen except in exceptional circumstances.

Existing field boundaries should be maintained and not replaced by timber or post wire fencing.

Where reforestation is to take place the percentage of broadleaf mix should be increased to 30%. Tree harvesting, should be carried out, if possible, on a staggered and segmented basis so as to avoid the exposure of large areas of remnant brush. Phasing also permits a segmented approach to reforestation and maintains the biodiversity of the area.

Wind farms are not considered to be a real proposition in this area for lack of wind resource and the high landscape quality and cultural associations of the area.

Boyne and Mattock Valleys

Landscape Values & Classification

Key Values	Objective
<ul style="list-style-type: none"> ▪ Panoramic views across the town of Drogheda into plains of Meath. ▪ Landscape quality has largely remained intact, in terms of field patterns, hedgerows and stone walls. ▪ Rich in archaeological features which include old Mellifont along with St. Lawrence's Gate. ▪ Scenic quality is enriched by the groups of mature broadleaf trees. ▪ Steeped in important religious and military historical events. ▪ Potential for recreational opportunities (particularly water based) ▪ Listed Scenic routes to the west of Drogheda. ▪ This area borders onto Co. Meath who have identified their area as the Lower Boyne Valley. It is logical that there is clearly only one landscape area involved here despite the existence of the two administrative areas of Louth and Meath. On this account, Brú na Bóinne, World Heritage Site, would be considered as being located within this landscape area and should be accredited as such. Part of the northern Buffer zone for this Heritage Site is located within Co. Louth. 	<p>Conserve</p> <p>Conserve/enhance</p> <p>Conserve</p> <p>Conserve & restore</p> <p>Conserve/enhance/restore</p> <p>Conserve/enhance</p> <p>Conserve/enhance</p>
Overall Classification	International

Acknowledgements

1. *Landscape & Landscape Assessment - Consultation Draft & Guidelines for Planning Authorities* **by** Department of Environment and Local Government. June 2000.
2. *Landscape Character Assessment - Guidance for England & Scotland* **by** Scottish Natural Heritage and The Countryside Agency. June 2002
3. *E.S.B.- International for Wind Atlas.*
4. *ARA. Maptec.*
5. *Meath County Council Development Plan.*
6. *Newry & Mourne District Council - Landscape Assessment.*
7. *Inventory of Outstanding Landscapes in Ireland - Foras Forbartha 1977.*
8. *Irish Forest Service.*
9. *Teagasc Dundalk.*
10. *Recorded Monuments for Co. Louth - National & Historic Properties Service in 1996.*
11. *Archaeological Survey of Co. Louth by Buckley & Sweetman.*
12. *National Biodiversity Plan Department of Arts, Heritage, Gaeltacht and the Islands. May 2002.*
13. *Integrated Coastal Zone Management 1999- E.U. et al.*
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15. *Wind farm Developments - Guidelines for Planning Authorities Department of the Environment and Local Government 1996.*
16. *Irish Peatland Conservation Council. December 2000.*
17. *Co. Library. Louth County Council.*
18. *National Heritage Inventory - Areas of Scientific Interest in Ireland for Co. Louth - Foras Forbartha. July 1981.*
19. *"Geology of Monaghan - Carlingford" and "Geology of Meath" both published by the G. S.I. Department of Public Enterprise (Former in 1997, Latter in 2001).*
20. *Geological Heritage of Co. Louth by G. S.I and Dúchas. (2002 data is ongoing).*

