

Northern Ireland Landscape Character Assessment 2000

LCA 16 Brougher Mountain

Landscape

Last updated: 26 January 2010

Key Characteristics

- Broad, rounded sandstone ridges dissected by short, steep glens; escarpment to the north; steep summits and rounded loughs to the south.
- Varied patchwork of land uses on the hills, with bog, improved grassland and rough grazing, contrasting with improved agricultural fields.
- Mix of small and medium sized farms, with land reclaimed from bog or moor. Stone walls or hedgerows separate fields.
- Isolated patches and strips of coniferous trees on hill slopes; mixed planting around farm buildings; willow and birch scrub on cut over bogs and around loughs.
- Megalithic sites on uplands and a concentration of raths at lower altitudes. Numerous traditional buildings.

Landscape Description

Brougher Mountain is an upland area of broad sandstone ridges which extends from Cloghtogle Mountain (near Enniskillen) to Slievedivena in Omagh District. The landform of the ridges is complex. Brougher Mountain (316m) is the highest point, with deeply undulating slopes and rounded summits. Topped Mountain and Knockmany are also prominent. To the south, the ridge becomes broken and subdivided to form a crumpled plateau with numerous loughs and rounded summits. To the north, the ridge is lower, with a well-defined escarpment to the SE and a dip-slope to the NW. The upland is dissected by two straight, deep valleys, which follow this same alignment, relating closely to fault-lines. The escarpment has steep plummeting slopes and long views out over the Clogher Valley to the south and east. The lower slopes have a more convoluted

landform, with broken ridges of glacial moraine in valleys and at the foot of slopes. Blanket peat covers the summits, with a transition to marginal pastures on lower slopes.

There are some extensive blocks of conifers on the upper slopes and stands of mixed woodland on the steep escarpment. Recent reclamation has extended improved fields at higher elevations and there is a strong contrast between the bright green improved fields and areas of rough grassland, heath and bog. On lower slopes, field boundaries are varied with locally occurring sandstone walls, earth banks with gorse and low hedges. There are scattered trees in the valleys, with woodland (including some conifer blocks) on the steeper valley sides, along streams and around farms.

Farms are scattered along narrow roads, with concentrations on south facing slopes. There are some small estates on the slopes near to Enniskillen, with red sandstone estate houses, and at Aughtentaine, near Fivemiletown.

There are a number of important archaeological sites, including megalithic tombs, cairns and standing stones on higher ground and raths on the lower slopes, particularly those overlooking the Tempo Valley.

Landscape Condition and Sensitivity to Change

The escarpment slopes and summits are particularly prominent and therefore sensitive to change.

The dereliction of traditional drystone walls and old stone buildings and their subsequent removal or replacement with wire fences and modern bungalows, is gradually eroding the character of the area. New piecemeal housing is often associated with the planting of non-native coniferous species around the perimeter of properties, which may lead to the creation of a less unified landscape. The loss of field boundaries, creating large improved fields, is not in character with the small scale patchwork land use. Peat cutting and drainage of bog for agriculture or forestry is leading to a gradual loss of this resource and its replacement with less rich habitats. There are a small number of sand and gravel pits but they are not of sufficient scale to affect the landscape condition overall. Radio masts on hilltops are prominent on some skylines.

Principles for Landscape Management

- It would be beneficial to conserve the small scale field pattern and existing walls and hedges, avoiding their removal or replacement with wire.

- Peat cutting on a small scale scattered across the area would be less damaging than its concentration in one area. Careful restoration of quarries after working will ensure that they do not remain as eyesores in the landscape.
- Small-scale scattered forestry is more appropriate than large blocks of planting and there is scope to improve the integration of existing forest margins with local landforms. The conservation of open ridge-lines would conserve the characteristic long views.

Principles for Accommodating New Development

- New development is best accommodated on lower slopes, reflecting the pattern of existing development and making use of shelter from existing vegetation and landform; development on skylines should be avoided.
- New development would blend more sympathetically with the rural environment if native planting, rather than exotic conifers, were used.

Brougher Mountain Geodiversity Profile

Last updated: 26 January 2010

Outline Geomorphology and Landscape Setting

The use of a cultural overlay in defining Landscape Character Areas (LCAs) means that they frequently subdivide natural physiographic units. It is common therefore for significant geomorphological features to run across more than one LCA. It is also possible in turn, to group physiographic units into a smaller number of natural regions. These regions invariably reflect underlying geological, topographic and, often, visual continuities between their component physiographic units, and have generally formed the basis for defining landscape areas such as AONBs. It is essential therefore, that in considering the 'Geodiversity' of an individual LCA, regard should be given to adjacent LCAs and to the larger regions within which they sit. In the original Land Utilisation Survey of Northern Ireland, Symons (1962) identified twelve such natural regions.

This LCA lies within the region described as the Central Uplands of Tyrone and Fermanagh. This area is defined in the north by the fault-guided scarp that forms the southern edge of the Sperrin Mountains. Below this are plateau lands that decrease in height and complexity to the south, before rising again to the lower slopes of Slieve Beagh. Below ca 350m the landscape is dominated by thick drift deposits, including prominent drumlin fields, dead ice features and glaciofluvial deposits - often capped by blanket peats. Some hills rise above the general level of the plateau, most notably the basalt-capped outlier of Slieve Gallion. The southwestwards trending Clogher Valley effectively divides the southern section of the upland into two blocks, one lying between Tempo and Pomeroy and the other centred on Slieve Beagh.

Brougher Mountain is an upland area of broad sandstone ridges that extends from Cloghtogle Mountain (near Enniskillen) to Slievedivena in Omagh District. The land form of the ridges is complex. Brougher Mountain (316m) is the highest point, with deeply undulating slopes and rounded summits. Topped Mountain and Knockmany are also prominent. To the south, the ridge becomes broken and subdivided to form a crumpled plateau with numerous loughs and rounded summits. To the north, the ridge is lower, with a well-defined escarpment to the SE and a dip-slope to the NW. The upland is dissected by two straight, deep valleys, which follow this same alignment, relating closely to fault-lines. The escarpment has steep plummeting slopes and long views out over the Clogher Valley to the south and east. The lower slopes have a more convoluted

landform, with broken ridges of glacial moraine in valleys and at the foot of slopes. The escarpment slopes and summits are particularly prominent and therefore sensitive to change. The landscape can therefore be summarised as one of broad, rounded sandstone ridges dissected by short, steep glens; escarpment to the north; steep summits and rounded loughs to the south. Key elements in the landscape include elements of the Tempo Valley Glaciolacustrine Complex along the southeastern border of the LCA and part of the Fintona Hills Complex.

Pre-Quaternary (Solid) Geology

The stratigraphy of this area is made up of the mapped formations in the table, the youngest of which usually overlie the oldest. The older formations can be upside down (tectonically inverted).

Stratigraphic Table (youngest rocks at the top of the table)

Tertiary - dolerite dykes - about 60 million years old
Carboniferous - about 350 million years old
Ballinimallard
Ballyreagh
Maydown
Topped Mountain
Clogher Valley
Ballyness
Devonian - Gortinfinbar, Raveagh, Shanmullagh - about 400 million years old
Silurian - Lisbellaw - about 420 million years old

This LCA is dominated by fossiliferous Carboniferous rocks of the Kesh - Omagh succession. These Carboniferous strata overlie Devonian, exposed in small outcrops. The Fermanagh Carboniferous occurs in a small area to the south. Tertiary dolerite dykes extend through the area. Overall, the geology can be summarised as two areas, separated by the Tempo - Sixmilecross Fault: the southeastern and the northwestern.

Devonian conglomerates with minor sandstones and volcanic beds pass upwards into red sandstones, mudstones and siltstones with subordinate andesitic lavas typical of the Old Red Sandstone facies. Occurs in three small outcrops on the northern edge of LCA16.

The Carboniferous limestones, shales and sandstones Ballyness and Clogher formations are both exposed (ESCR Site 199) Cole Bridge Stream

Ballyreagh Conglomerate Formation: a discontinuous conglomerate with sandstones above and below occurs with the Topped Mountain Formation sandstones (ESCR Site 225) of Largy Quarry.

All the above successions were deformed in the Variscan (end Carboniferous) phase of tectonics. The NE-SW Tempo-Sixmilecross Fault crosses the centre of LCA16.

ESCR Site 226 (Glen and Coolcran - Carboniferous conglomerates) are within this LCA.

Quaternary (Drift) Geology

Northern Ireland has experienced repeated glaciations during the Pleistocene period that produced vast amounts of debris to form the glacial deposits that cover more than 90% of the landscape. Their present morphology was shaped principally during the last glacial cycle (the Midlandian), with subsequent modification throughout the post-glacial Holocene period. The Late Midlandian, the last main phases of ice sheet flow, occurred between 23 and 13ka B.P. from dispersion centres in the Lough Neagh Basin, the Omagh Basin and Lower Lough Erne/Donegal. The clearest imprint of these ice flows are flow transverse rogen moraines and flow parallel drumlin swarms which developed across thick covers of till, mostly below 150m O.D. during a period that referred to as the Drumlin Readvance. At the very end of the Midlandian, Scottish ice moved southwards and overrode parts of the north coast. Evidence for deglaciation of the landscape is found in features formed between the glacial maximum to the onset of the present warm stage from 17 and 13ka B.P. - a period of gradual climatic improvement. Most commonly these are of glaciofluvial and glaciolacustrine origin and include: eskers, outwash mounds and spreads, proglacial lacustrine deposits, kame terraces, kettle holes and meltwater channels. During the Holocene, marine, fluvial, aeolian and mass movement processes, combined with human activities and climate and sea-level fluctuations, have modified the appearance of the landscape. The landforms and associated deposits derived from all of these processes are essentially fossil. Once damaged or destroyed they cannot be replaced since the processes or process combinations that created them no longer exist. They therefore represent a finite scientific and economic resource and are a notable determinant of landscape character.

As an upland area, this LCA contains large areas that are drift free and would have been overridden and scoured by Late Midlandian ice that moved southwestwards across the area from an ice centre in the Omagh basin. On the flanks of Brougher Mountain this ice left an encircling mantle of till. However, the Quaternary features that are of particular geomorphological and geological significance are located within areas of deglacial sand

and gravel that were deposited on the margins of the upland as the ice wasted. Within this LCA there are elements of a number of such deglacial complexes that are important scientifically and for their sand and gravel resources.

The Tempo Valley Delta Complex runs along the southeastern margin that overlaps with LCA17. The valley margins are defined by the bedrock uplands of the Fintona Hills to the west, and by the limit of sand and gravel to the east and covers an area of c. 30 km². It records a range of ice marginal and ice contact sediments including glaciolacustrine outwash spreads, deltas and moraines. Deep meltwater channels through the axis of the Tempo Valley probably reflect meltwater and/or glacial lake drainage to the southwest. These deposits are superimposed upon bedrock in the uplands, and subglacial diamict of rogen moraine morphology in the lowlands. These rogen bedforms relate to earlier northeast-southwest ice flow from ice centres north of the Fintona Hills. Ice retreated east and southeast from the main axis of the Fintona Hills. Aesthetically, the Tempo Valley delta complex is excellent. As a whole the complex remains intact.

The Fintona Hills Complex, (16km² in this LCA) is defined as the area occupied by sand and gravel sediments to the north side of the Fintona Hills, and extends from Ballinamallard to Brackagh. It is characterised by east-west aligned sand and gravel ridges, interpreted as subglacial eskers and ice-marginal moraines, kame terraces, and small outwash spreads. The Ballinamallard esker chain (mainly in LCA 15) is well-preserved with little or no sand and gravel despoilation. The esker is a discrete landscape feature, especially near Kilskeery. Moraines composed of sand and gravel around Crockfadda are large and dominant in the landscape. They contrast with the adjacent bedrock uplands around Thornoge. Undulating kame terraces at Dungoran form a distinctive topography. Sand and gravel ridge alignment and morphology contrasts with that of the surrounding diamict bedforms (rogen moraines). Esker ridges are associated with bedrock-floored meltwater channels.

In the north east of the LCA are small areas of the Clogher Valley Sub-Glacial and Ice-Marginal Complex (2.6km²) that lies mainly in LCA 17, and the Ballygawley Delta Complex (1.5km²) that lies mainly in LCA 44.

Key Elements

Deglacial Complexes

TEMPO VALLEY DELTA COMPLEX (5.8 km²)

The Tempo Valley delta complex is classified as being of high importance on a Northern Ireland scale. This is due to its importance in showing that ice retreated to the east and southeast. This is very different to the direction of ice advance. The localised occurrence of concretions and mud curls appears to be unique to this area, and have not been extensively reported in similar settings elsewhere in Northern Ireland. The pattern of deglaciation is rather different to that originally envisaged by Charlesworth. Ice retreat was far more dynamic, and involved two interacting ice margins after ice broke up over the axis of the Fintona Hills.

FINTONA HILLS glaciofluvial COMPLEX

This landform assemblage is very varied, but is generally of high importance on a Northern Ireland scale in terms of understanding the complexity of deglacial processes in Northern Ireland. The Fintona Hills Complex shows a variety of ice marginal and subglacial landforms dating from the period of ice thinning when the main ice mass split up over the axis of the Fintona Hills. This resulted in the separation of Omagh Basin and Clogher/Tempo valley ice masses to the north and south respectively. Ice mass decay was then topographically controlled. Omagh Basin ice actively retreated from the uplands and deposited a range of marginal sediments. This evidence is in agreement with adjacent regional deglaciation patterns.

CLOGHER VALLEY SUBGLACIAL AND ICE-MARGINAL COMPLEX

The Clogher Valley complex records ice marginal and subglacial sedimentation of glaciofluvial and diamict facies during glaciation and southwesterly ice retreat into the lowlands of the central Clogher Valley and the Lough Erne Basin from the surrounding uplands. For a fuller description see LCA17.

BALLYMACKILROY delta and outwash (Ballygawley DELTA complex)

The area around Ballymackilroy in the northeast of the LCA overlaps with LCAs 17, 44 and 45 and is of importance in understanding the recent glacial history of Northern Ireland. It consists of a well-defined assemblage of sand and gravel delta and outwash surfaces deposited in a pro-glacial lake. Landforms around Ballymackilroy record sand and gravel deposition following the break up of ice over the Fintona Hills and subsequent ice withdrawal towards the south, into the Clogher valley. Sand and gravel landforms around Ballymackilroy are generally pristine and this intactness is an important landscape attribute. The outwash spreads are a major component of the landscape as seen from the main -Omagh road. For a fuller description of the Ballygawley Complex see LCA 44.

DUNGORAN KAME-ESKER-OUTWASH (FINTONA HILLS glaciofluvial COMPLEX)

Undulating ridges against the northern slopes of the Fintona Hills to the south of Fintona are kame terraces resulting from sediment collapse following the removal of ice support. More sharply defined ridges along the lower slopes are eskers, which fed meltwater to the ice front during westward retreat of the Omagh Basin ice body.

DROMORE GLACIOFLUVIAL ASSEMBLAGE (FINTONA HILLS glaciofluvial COMPLEX)

Landforms along the flanks of the Glennamuck/Blackwater River valley are of importance in understanding the recent glacial history of Northern Ireland. The landform assemblage along the eastern flank of the valley consists of moraine and esker ridges and well-defined outwash terraces formed as the ice front oscillated on the slopes of the Fintona Hills, with consequent short-lived ponding. Flat outwash surfaces superimposed on the bedrock valley slopes are a distinctive component of the local landscape.

Other sites/units identified in the Earth Science Conservation Review

199 Cole Bridge Stream

Carboniferous. Exposure of stratotype for both Ballyness and Clogher Vally Formations. Miospores and sparse fossils.

225 Largy Quarry

Carboniferous. Exposure of upper section of Topped Mountain Sandstone Formation. Lithologies of Ballyreagh Conglomerate Formation.

226en and Coolcran

Carboniferous. Interbedded sandstones and conglomerates of Coolcran Conglomerate Member. Unusual stratotype section contains thin mudstone with miospores.

Brougher Mountain Biodiversity Profile

Last updated: 9 November 2006

In the following account of this LCA it should be noted that for consistency, the biodiversity section follows a standard order for all LCAs even though some of the communities discussed later may have more importance for biodiversity than those discussed earlier.

Key Characteristics

- woodlands cover c. 4% of the LCA of which three-quarters is coniferous forests
- broadleaved and mixed woodland is limited in extent and confined to either present and former estates or to birch dominated woodland on cut-over bog or stream sides
- grassland covers four-fifths of the LCA (compared with around 71% for Northern Ireland), about 70% of which is improved grassland of generally low biodiversity
- acid grassland has developed predominantly on cut-over peat or peaty soils, mainly in the uplands; generally of low biodiversity, this can be increased where there is variation in the depth of peat left by cutting and consequent variation in wetness
- blanket bog is widespread on the spinal upland of this LCA, but as a result of past cutting, drainage and afforestation, less than 4% was described as intact bog in the 1980s; significant stretches of intact bog have been affected by more recent mechanized peat cutting
- examples of relatively rare mesotrophic and eutrophic lake types
- rivers with Priority Species - river water-crowfoot and white-clawed crayfish

Woodlands

Woodlands cover c. 4% of the LCA of which three-quarters is coniferous forests. Large forests are concentrated in the uplands between Brougher Mt. itself and Mullaghnaush, whereas to the east several smaller plantings comprise outliers of Knockmany Forest. To the west there are also isolated plantations, most of which are parts of Pubble Forest. Sitka spruce is the most common tree species, but lodgepole pine, Norway spruce and Japanese larch are also frequent. Most of the large forests have been planted on cut-over blanket peat, sometimes extending onto humic mineral soils, and generally are of low biodiversity.

Broadleaved and mixed woodland is limited in extent. At Knockmany, the Cecil Demesne in 1833, there are modern small compartments of oak and of mixed hardwoods (beech, ash, sycamore and oak), but most of the broadleaved and mixed woodland there falls into LCA 17. Although the present trees are modern planting, many of the compartments, as for example those in Lumfords Glen, occupy sites already woodland in 1833 and therefore may contain species not present in woodlands of more recent origin. There is also parkland (**lowland woodland pasture and parkland**) at Aughtentaine, which was not planted by 1833, and at Derrybard where the mixed planting was new in 1833. Aughtentaine has a range of both broadleaved and conifer species that includes oak, horse chestnut, beech, ash and specimen firs; there is also conifer plantation; birch and willow occupy wetter sites. Woodland at Derrybard is extensive and includes that around the former house, but there is a larger stretch on the north facing slopes to the south. This is largely broadleaved, including ash, beech and oak, but there are some intermixed conifers. In parts, cherry laurel and snowberry dominate the understorey with a relatively poor herb layer, but where these shrubs are absent it is more diverse and ferns and bryophytes are abundant.

Outside of these present and former demesnes, broadleaved woodland is dominated by birch. On relatively dry cut-over bogs it forms almost pure stands, but on the wetter edges of bogs it is associated with willow and alder in **wet woodland**. Birch is also associated with hazel in small hillside and valley woodlands which, when not heavily grazed, can have a diverse herb layer and abundant mosses and lichens. Wet woodland may also be found around the edge of some of the loughs.

Grassland and Arable

Grassland covers four-fifths of the LCA (compared with around 71% for Northern Ireland), about 70% of which is improved grassland; the remainder is acid grassland that has developed predominantly on cut-over peat or peaty soils. These large expanses of upland acid grassland - which also occurs on cut-over lowland peat - have limited biodiversity interest and are often dominated by mat grass or purple moor grass, or towards the margins of the peat, by rushes. However, in some areas of past cutting, islands of deeper peat may be left in the grassland with species more typical of the blanket bog, such as common heather and cotton sedges. The acid grasslands are also, together with the peatlands, important for wetland birds, including snipe and **curlew**.

Improved pastures generally have low biodiversity as a result of relatively intensive management. Some of the pastures are sown grasslands dominated by ryegrass and few other species - low biodiversity is in-built. Other grasslands have been converted to

improved pastures through management. High levels of grazing or repeated cutting for silage, high inputs of fertilizers and slurry, and selective herbicides serve to reduce diversity of both flora and fauna. Arable land is insignificant in this LCA.

Biodiversity in areas of improved pastures and arable is often concentrated in hedgerows. Indeed, they may be the most significant wildlife habitat over much of lowland Northern Ireland, especially where there are few semi-natural habitats. Hedgerows are a refuge for many woodland and farmland plants and animals. In this LCA, field boundaries in those lowlands dominated by improved pastures have dense hedges with mature trees of ash, oak and beech. On the lower slopes boundaries are varied with locally occurring sandstone walls, earth banks with gorse, and low hedges, generally poorly maintained. Recent reclamation has extended improved pastures to higher elevations and the amalgamation of smaller fields has resulted in the loss of even the poor lines of gorse and scrub that previously existed.

Heaths and Bogs

Blanket bog is confined in Europe to the northwest margins of the continent, so that Northern Ireland contains not only a large proportion of the UK's and of Ireland's total area of blanket bog, but also is of major importance at a European scale. Blanket bog, and particularly intact blanket bog, in any LCA is therefore of national and international significance. It is home to plant species adapted to the acidic, low nutrient conditions - including common heather, cross-leaved heath, cotton sedges, bog asphodel, deer sedge, bog mosses (*Sphagnum* species) and sundews. It is also important for overwintering birds like the Greenland white-fronted goose, and for breeding birds, including waders. Blanket peat is also important as a store for carbon and as a repository of information on past environments.

Blanket bog is widespread on the spinal upland of this LCA, but as a result of past cutting, drainage and afforestation, less than 4% was described as intact bog in the 1980s. This was in three relatively large areas - in or near Ramaley, Meenawanick and Stranisk Townlands. Unfortunately, the advance of mechanised peat cutting through the 1980s and 1990s has resulted in the loss of most of these three areas. Unlike past hand-cutting, mechanised cutting often leaves the peat bare or at best dominated by one or two species such as cotton sedge or deer sedge; the bog mosses and many of the other plants take many years to re-colonise. Although the intensity of cutting has declined in recent years, some relatively large sites remain active and on presently abandoned sites the slow recovery of the vegetation gives a low species diversity.

Cut-over bog that results from past hand cutting, has importance to biodiversity; it can have various depths of peat with different vegetation and different levels of water, including old turf pools. As a result, there is a range of micro-habitats for insects, including water-beetles and dragonflies. In addition to the spread of mechanised cutting onto cut-over bog in the recent past, forestry has also reduced the area and biodiversity of former cut-over bog.

The large extent of cut-over blanket peat includes not only acid grasslands (see above) but also relatively deep peat which has a dominance or abundance of common heather. Such areas have the appearance of wet **upland heathland**, but most are strictly blanket bog because they have more than the 50cm depth of peat that is the limit for heathland. The heather cover, along with the varied vegetation of the cut-over bogs, provides habitats for several bird Priority Species, including red grouse, curlew and skylark.

There is no intact **lowland raised bog** in the LCA, all has been cut-over in the past, but the bogs provide habitats for breeding lapwing, curlew and snipe, as well as for invertebrates - in the same way as cut-over blanket bog.

Wetlands and Lakes

The largest lake in this LCA to be surveyed by the Northern Ireland Lake Survey was Ballydoolagh Lough. This was classed as an example of **mesotrophic lakes** (i.e of middle range of nutrients) of the 'Nymphaea/Fontinalis/Littorella' type - these are relatively base and nutrient poor lakes developed naturally in sandstones. Watsons Lough was also classed as mesotrophic. Mesotrophic lakes potentially have the highest macrophyte diversity of any lake type. Furthermore, relative to other lake types, they contain a higher proportion of nationally scarce and rare aquatic plants. This is an increasingly rare type of lake in Northern Ireland and the UK generally because the nutrient status of many is being increased through input of water from agricultural land that has had applications of fertilizers and slurry.

Largy Lough is an example of **eutrophic standing waters**, of the 'Nuphar/Elodea/Potamogeton alpinus' type. This is a natural lowland lake type with elements of the more mid-altitude aquatic macrophyte floras. Compared with many lowland lakes, this type is relatively un-enriched; it is a comparatively rare type, with a Fermanagh / South Tyrone bias. Killee Lough is a **marl lake** of the 'Nuphar/Elodea/Chara/Algae' type - small, clear-water, un-enriched lakes with relatively high base status, and usually related to limestone areas. Marl lakes, generally rare in Northern Ireland are most common in Fermanagh.

Fens are not common in this LCA, generally restricted to the margins of lakes as at Ballydoolagh, Derrin, Killee and Largy. **Reedbeds** are also of restricted occurrence; examples include those at Killee Lough and Largy Lough. The Irish damsel fly and the marsh fritillary butterfly are found at Ballydoolagh Lough, Watson's Lough and Killee Lough.

The Tempo River has **river water-crowfoot** and the **white-clawed crayfish**; the latter is also present in the Manyburns River. The **otter** is quite common throughout the area.

Key Issues

General actions for UK and NI Priority Habitats and Priority Species are detailed in the **Habitat Action Plans** and **Species Action Plans**.

WOODLANDS

Issue: low woodland cover of variable biodiversity value

Actions:

- enhance the biodiversity value of demesne/parkland woodland through control of grazing and felling; by encouraging planting of saplings of the standard trees; by preventing further loss of parkland; by retention of fallen and veteran trees (particularly for bryophytes, ferns, fungi and fauna)
- further study of the history and ecology of demesne and other broadleaved woodlands particularly any ancient and long-established, as a key to future management
- encourage control of grazing in broadleaved woodlands along streams to foster regeneration and if necessary, encourage replanting of canopy species
- consider removal of conifers from 'coniferized' former broadleaved and mixed woodlands, especially those that are 'long-established'
- encourage planting of native broadleaved woods rather than the small conifer plantations which are of poor biodiversity and landscape value
- retain colonizing woodland on former cut-over bogs

GRASSLAND AND ARABLE

Issue: poor biodiversity of farmland

Actions:

- maintain and improve field boundaries - especially hedgerows in lower land. This may be achieved through adoption of correct cutting cycles; hedge laying and replanting where necessary; leaving saplings uncut to develop into hedgerow trees; avoidance of spraying with fertilizers, slurry, herbicides; provision of wildlife strips and conservation headlands around fields; and limitation of field amalgamation.
- encourage (through participation in Environmental Schemes) adoption of less intensive management of pastures to allow reversion to more species-rich grassland and protect unsown areas of species-rich grassland
- promote further research on the biodiversity of upland acid grassland as a guide to future management

HEATH AND BOGS

Issue: blanket bogs in Northern Ireland are of national and international importance, but intact bog is now rare in this LCA

Actions:

- consider restoration of blanket bog habitats - especially those formerly intact but affected by recent mechanized peat extraction - through appropriate water level management and phasing out peat cutting
- prevent new forest planting on blanket bog, especially that which could be restored to active growth
- monitor use of cut-over blanket bog to ensure that the important micro-habitats are not lost, that the large tracts of land required by predator birds are not broken up by planting and other uses, and that the needs of over-wintering and breeding wetland birds are met
- ensure that the cover of heather (and of different ages) is retained not only for the plant biodiversity, but also as habitats for red grouse and other Priority species

WETLANDS

Issue: important examples of relatively rare types of mesotrophic and eutrophic lakes and rivers with Priority Species

Actions:

- protect water quality of lakes and rivers through nutrient management, thus
- promote and encourage existing good farming practices so that streams are not polluted by run-off from agricultural land or seepage from silage pits
- monitor streams in relation to expansion of rural housing and associated septic tanks/sewage treatment plants
- protect lakes and rivers from sediment deposition, particularly associated with peat extraction in the uplands