Northern Ireland Landscape Character Assessment 2000

LCA 65 Upper Bann Floodplain

Landscape

Last updated: 24 November 2006

Key Characteristics

- River terraces and floodplain of the River Bann.
- Extensive areas of flat pasture and moss with scattered, irregular tree cover.
- Long river landscape views.
- Steep embankments contain the river valley to the south.
- The river itself is often remote and inconspicuous.

Landscape Description

The Upper Bann Floodplain LCA follows the course of the Upper Bann between Scarva and Portadown. The area includes the extensive areas of moss on the river floodplain at Terryhoogan Moss, Park Bog and Brackagh Bog. A railway line follows the course of the river between Scarva and Portadown. The landscape consists of well defined, broad river terraces containing large pastures above Dynes Bridge and extensive areas of moss on former river meanders.

At Portadown, built development is a dominant local influence. The river floodplain is the most attractive landscape feature in the area and is an important focus for views and recreation. The River Bann has been constrained by flood embankments (often 6m high) and many smaller banks and straight drainage ditches run laterally towards the river across the adjacent pastures. The embankments prevent views of the river channel from the surrounding roads but its position is reinforced by riverside woodlands, overgrown hawthorn scrub and gorse. Settlement is close to roads on slightly raised land and expanses of flat, marshy land adjacent to the river are free from development. In the lower floodplain, there are many large-scale agricultural and factory buildings.

Landscape Condition and Sensitivity to Change

The condition of the River Bann floodplain landscape is good, with the exception of the area immediately to the south of Portadown, between Dynes Bridge and the town bridge. The Brackagh Moss Nature Reserve is well managed but adjacent areas of farmland appear to be in decline, with overgrown hedgerows and invasive weeds. Some extensive tree/scrub cover allows opportunities for visual screening. The landscape is moderately sensitive to change as a result of its open floodplain character which allows long views. Brackagh Bog, on the fringes of the floodplain, is one of the largest single blocks of lowland peat left in Armagh. It is recognised for its nature conservation importance by its designation as a Nature Reserve. The site's complex mosaic of wetland communities is particularly sensitive to changes in water quality and runoff and is therefore vulnerable to agricultural change or built development in the wider landscape.

Principles for Landscape Management

- Incorporation of a small part of the farmland surrounding Brackagh Bog into the management of the bog would be beneficial. Extensive planting of fringing farmland with mixed broadleaf species would enhance its development as a nature reserve.

Principles for Accommodating New Development

- The remote character of the river valley may be conserved by restricting major access proposals and the careful siting and design of new infrastructure. New built development to the west of the road would restrict and detract from river views and would adversely affect the distinctive landscape character.

The establishment of a limit to built development to 200m (min) within either side of the river channel in the Portadown area will help conserve the open character of the landscape for the future.

Upper Bann Floodplain Geodiversity Profile

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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 can be viewed naturally as an extension of the region described as the Central Lowlands, although it extends southwards into the adjacent region of the Uplands and Drift Covered lowlands of Down and Armagh. This region owes its large-scale morphology to the early Tertiary subsidence of the Lough Neagh basin into the magma chamber from which the basalts that underlie much of the landscape originated. This has produced a largely centripetal drainage system from the rim of the basin into Lough Neagh that ultimately drains northwards via the Lower Bann. To the south of the Lough Neagh basin, the lowlands extend southwestwards along a Caledonian structural trend into the Monaghan-Clones depression. In the east of the region the lowlands extend northeastwards along the fault-guided Lagan Valley. There are no strong topographical barriers in the region and boundaries between LCAs tend to be subtle. The low gradients of the rivers, especially on the clay lowlands immediately around Lough Neagh, create inherent drainage problems and frequently it is only the slopes of the many drumlins that provide permanently dry sites. The Lough Neagh Basin was a major ice accumulation centre during the Late Midlandian and much of the lowland areas to the north and south of the Lough are dominated by extensive drumlin swarms.

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terraces containing large pastures above Dynes Bridge and extensive areas of moss on former river meanders. At Portadown, built development is a dominant local influence. The river floodplain is the most attractive landscape feature in the area and is an important focus for views and recreation. The River Bann has been constrained by flood embankments (often 6m high) and many smaller banks and straight drainage ditches run laterally towards the river across the adjacent pastures.

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 - Lough Neagh Group, about 20 million years old
Tertiary - various intrusives & Lower Basalt Formation, about 60 million years old
Ordovician (predominant) - Moffat Shale, Gala Group and Gilnahirk Group, about 450 million years old

Comprises two ages of rock strata and numerous minor igneous intrusions. 70% of the LCA comprises Lower Palaeozoic (predominantly Ordovician) greywacke sandstones and shales, the remainder being an outcrop in the north-west of Tertiary Lough Neagh Group mudstones and lignites

Quaternary (Drift) Geology

Northern Ireland has experienced repeated glaciations during the Pleistocene period that produced vast amounts of debris to form the glacigenic deposits that cover >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 (McCarron et al. 2002). 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 would be expected in the floodplain of a significant river, the drift geology map for this LCA shows that much of the landscape is underlain by alluvium. Beneath this is a cover of Late Midlandian till deposited by ice flowed southwards from an accumulation centre over the Lough Neagh Basin. Associated with this till are numerous drumlins that formed in and beside the Poyntz Pass glacial drainage channel. This formed during the deglaciation of the Lough Neagh lowlands, when there was a period when downwsting ice occupied the Lower Bann valley and prevented the northwards drainage of the proto-Lough Neagh. Lake levels then rose until an alternative outlet was found to the south via Pontz Pass and Newry to Carlingford Lough (Davies and Stephens 1978). McCabe and Hirons (1986) have described this drainage channel as having similarities to a tunnel valley system, in which sand cored drumlins occur within the channel system itself and are flanked by large rock drumlins west and east of the channel.

Upper Bann Floodplain Biodiversity Profile

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Key Characteristics

- floodplain of the Upper Bann with adjacent low hills
- predominantly in improved pastures but of varying quality with some containing abundant rushes
- large areas of fen, bog and damp grassland with rare species of flora and fauna
- woodland relatively scarce and found as wet woodland in fens and in estates

Woodlands

Woodland accounts for about 1.5% of the land cover, most in parklands, although this may be an underestimate because there are extensive areas of willow and alder encroachment onto former peat bogs. Parkland woodlands (**Lowland woodland pasture and parkland**) include the northern part of Tandragee Castle estate and Carrickblacker House - both of which have new planting associated with golf courses - and Stramore House. Common species in these estates are oak, beech, horse chestnut and sycamore with Scots pine, Austrian pine and cypress; specimen trees, often conifers, occur in the parks and near to the houses. An understorey is usually confined to the plantings around the edges of the parklands and is often comprised of holly and cherry laurel; elsewhere the parklands are grazed, or in the case of golf courses are mown. There is evidence of replanting in some of the estates, and although some is of conifer plantations, there is planting of canopy species. Further research is also required into the history and ecology of these long-established plantings.

Wet woodlands cover much of the former peat bogs, as for example at Terryhoogan Moss and at **Brackagh Bog NNR** where there is dense alder and willow carr woodlands. Other small patches of woodlands are found along streams in the higher land, as at Cusher Bridge; these are often a mix of ash and sycamore and of shrub species.

Grassland and Arable

Grassland covers 70% of the LCA, most in improved pastures. However, the quality of these pastures varies depending on the effectiveness of drainage ditches and level of management - there is some evidence of abandonment of fields and encroachment by hawthorn and gorse. Some pastures in the lowest parts of the floodplain have a

relatively high cover of rushes. Indeed, where drainage ditches are less effective fields may be classed as rough grazing.

Field boundaries in the floodplain are sometimes of ditches, but generally hedgerows are managed well. There is some evidence of hedge removal and field amalgamation.

Arable land comprises around 12% of the land cover; it has a patchy distribution, generally found on the slightly higher ground above the floodplain and features hedgerows in need of positive management.

Heaths and Bogs

The once extensive lowland bogs found in the meanders of the River Bann have largely been lost through past cutting, drainage and straightening of the river. Several are now in fen, wet woodland or damp grassland, but at Brackagh Bog NNR there are areas of acid bog remaining with typical bog species. These include cross-leaved heath, sundews, bog asphodel and a number of Sphagna (bog mosses). The bog habitat and species are a part of a nature reserve of high diversity that has to be managed as a whole (see below).

Wetlands and Lakes

Fens are a significant landscape feature in this LCA and account for much of its biodiversity. As has been seen, they originated mainly from cut-over lowland bogs and large parts are now in alder and willow carr. Brackagh Bog NNR has the most notable fen communities including tall fen vegetation dominated by diorin, sheep's fescue and bottle sedge, and reed swamp dominated by reedmace. However, there is great diversity of habitats (including bog, fen, carr and wet grasslands), flora and fauna so that the site should be seen as a whole. The site is particularly important for Irish lady's tresses, and royal fern also occurs. There is a rich invertebrate fauna; 16 butterfly species, including marsh fritillary and green hairstreak, and 14 species of dragonflies and damselflies, including Irish damselfly have been recorded. 16 breeding bird species have been recorded on the reserve.

Both the Cusher River and Upper Bann, contain river water crowfoot but there are no significant areas of standing water in the LCA. Water quality of the Bann is partly dependent on up-stream activities.

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: this LCA features examples of the NI Priority Habitats lowland woodland pasture and parkland and wet woodlands

Actions:

- enhance the biodiversity value of broadleaved woodlands by discouraging felling; by preventing loss of broadleaved woodlands; by retention of fallen and veteran trees (particularly for bryophytes, ferns, fungi and fauna); encourage control of grazing in broadleaved woodlands to foster herb layer and regeneration; develop a schedule of planting of canopy species
- further study of the history and ecology of broadleaved woodlands within the LCA, particularly any ancient and long-established, as a key to future management
- encourage planting of broadleaved woodlands through appropriate grant schemes rather than the conifer plantations and shelterbelts that are of poor biodiversity and landscape value; ensure that hazel scrub is not cleared
- ensure conservation of wet woodland such as Brackagh Bog NNR - that they are not lost through drainage, reclamation, landfill or dumping/tipping

GRASSLAND AND ARABLE

I**ssue**: poor biodiversity of improved pastures and arable land as a result of relatively intensive management;

Actions:

- maintain and improve field boundaries, especially hedgerows where they occur through adoption of correct cutting cycles; discourage further removal of hedges; lay and replant hedges where necessary; leave saplings uncut to develop into hedgerow trees; avoidance of spraying with fertilisers, slurry, herbicides; provision of wildlife strips and conservation headlands around fields; and limitation of field amalgamation
- encourage (through participation in Environmental Schemes adoption/continuance of less intensive management of pastures to allow reversion to/continuance of more species-rich grassland and protect unsown areas of grassland including dry, calcareous grassland

- maintain and enhance damp grassland by where, possible, restricting field or arterial drainage
- leave stubble over winter, rather than autumn ploughing to increase food resources for farmland birds; a move from autumn sown to spring-sown cereals would benefit farmland birds.

HEATHS AND BOGS

Issue: loss of lowland bogs; however, several intact areas of acid bog remain at Brackagh Bog NNR.

Actions:

- manage bog habitat and species as an integral part of the management of Brackagh Bog NNR
- maintain the integrity of acid bogs by for example, preventing infilling, fly-tipping, fires, new drainage and mechanised peat cutting - applies particularly to intact bogs but cut-over bogs can provide important habitats for birds and invertebrates
- consider restoration of lowland bog habitats through appropriate water level management, removal of individual colonising trees and phasing out peat cutting - applies particularly to any areas of recent mechanical cutting
- prevent new forest planting on bogs

WETLANDS AND LAKES

Issue: NI Priority Habitat fens contribute significantly to the biodiversity of this LCA; Brackagh Bog NNR , the Cusher River and the Upper Bann support a range of NI Priority Species.

Actions:

- prevent damage to fens through changes to water tables, inflow of nutrient rich waters from surrounding farmlands and use as rubbish tips; Brackagh Bog NNR will require special management plans to ensure that the diversity of species and habitats is retained and to enable development into wet woodland
- protect the water quality of the Cusher River and Upper Bann through nutrient management and by reducing suspended sediments; prevent the release of particles released through peat cutting or forestry operations; install sediment traps at large extraction sites

- promote and encourage existing good farming practices (by following Countryside Management Guidelines) so that rivers are not polluted by releases from silage effluent, herbicides, pesticides, fertilisers or sheep dip
- monitor streams in relation to peat cutting (sediment load and deposition) and in relation to expansion of rural/urban housing and associated septic tanks/sewage treatment plants; recognise that monitoring of streams in relation to forestry and other operations upstream may be important