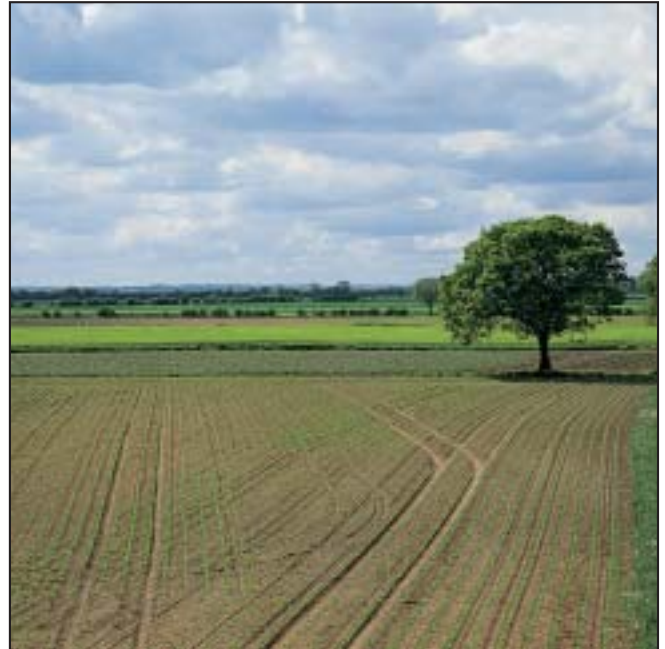


Humberhead Levels



Key Characteristics

- A flat landscape occupying the area of the former pro-glacial Lake Humber.
- Very low-lying, commonly at or below mean high-water mark.
- Surface geology of drift deposits, including glacial tills, clays, peat, sand and gravel and wind-blown sand, giving local variations in character.
- Broad floodplains of major navigable rivers draining to the Humber Estuary with extensive areas of washlands and some alluvial flood meadows.
- Rich high-quality land which is intensively farmed and includes substantial areas of warp land.
- Essentially flat, very open character with occasional rising ground formed by ridges of sand and outcrops of Mercia Mudstone.
- Very large open fields divided by dykes, with relatively few hedgerows or field trees.
- Peat bogs of international ecological and historical importance which are widely exploited for commercial peat extraction.
- Widespread evidence of drainage history in rivers, old river courses, ditches, dykes and canals.
- Important areas of historic landscape such as the more enclosed agricultural landscape at Fishlake, the remnant open fields of the Isle of Axholme and the unique 'cable' landscape of Thorne.
- Areas of remnant heath and large, isolated conifer plantations on poor sandy soils.
- Modern motorways on embankments and large installations, notably power stations, which are often prominent in the flat landscape.



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Essentially flat and open in character, the Humberhead Levels contain rich and high quality agricultural land. Most of the area is intensively farmed for arable production, as seen here near Pollington.

Landscape Character

The Humberhead Levels area is a large tract of landscape which has echoes of the Somerset Levels and Moors, the Fens and the Netherlands. It occupies the area of the former pro-glacial Lake Humber. Its unity of character is derived from this glacial impoundment, and the alluvial deposits which resulted, together with a long history of drainage and 'warping' which is the seasonal impounding of tidal silts to enhance the soils. It is bounded to the west by the Southern Magnesian Limestone ridge and to the east by the Yorkshire Wolds and the Northern Lincolnshire Edge with Coversands area. To the north it merges gradually into the slightly more undulating landscape of the Vale of York at the line of the Escrick moraine and to the south, past Retford, it merges with the Trent and Belvoir vales.

This is a predominantly flat agricultural landscape which is one of the most productive cropping areas in Britain. Much of the area is extremely low-lying, with some areas lying at or below the mean high-water mark. The landscape includes

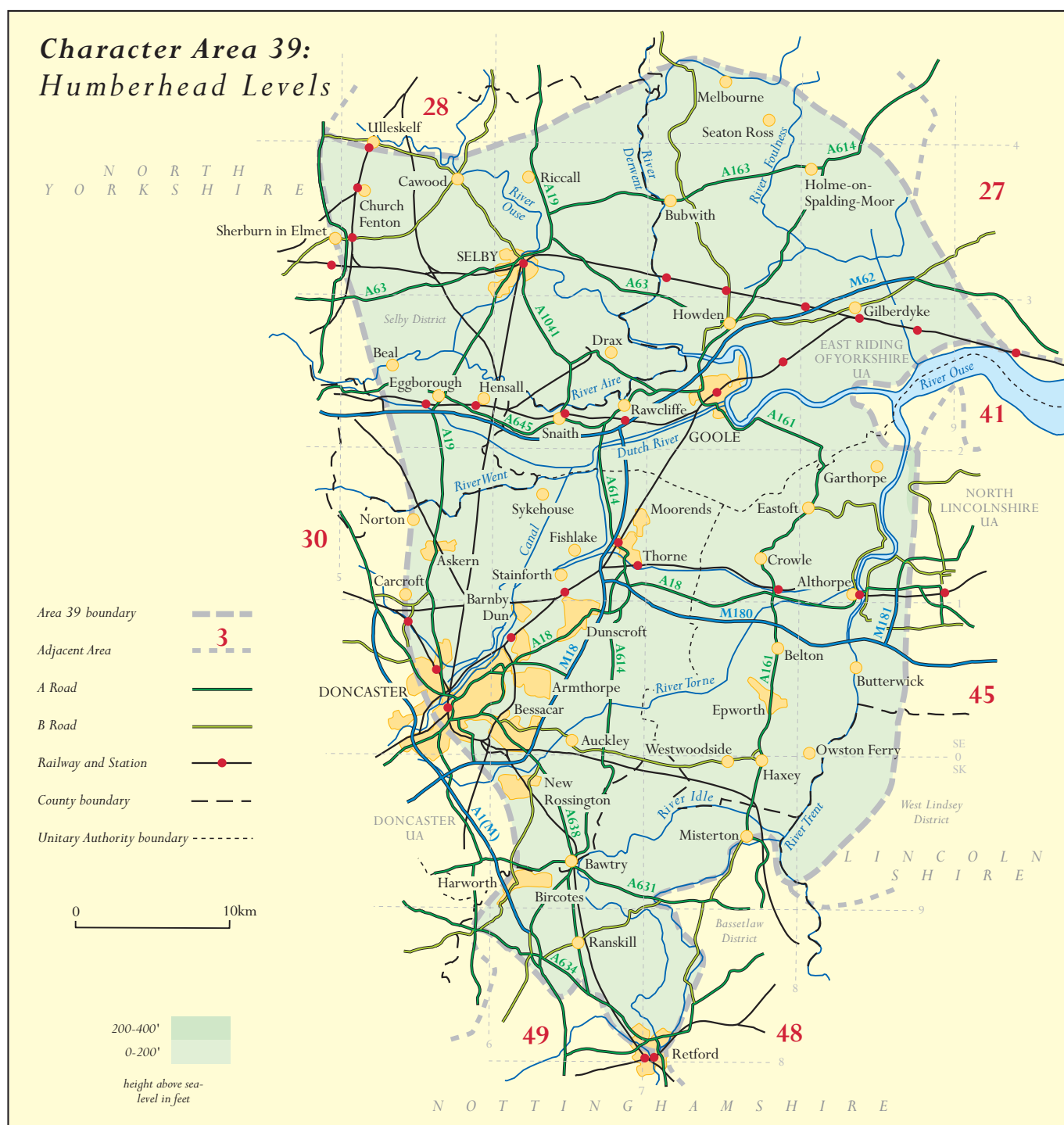


the broad floodplains of several major, often navigable rivers, which drain to the Humber. They include the Derwent, Don, Torne, Idle, Went, Aire, Ouse and Trent. The farmland is rich and intensively farmed in generally very large, open, geometric fields usually divided by dikes.

Field trees and hedgerows are generally few and far between and views are often long and unbroken to distant horizons, with the sky playing an important part. Settlement is limited and generally concentrated on higher ground, but within the open levels there are scattered, large, often semi-industrial farmsteads with large modern buildings. The long history of drainage and water management is evident in many areas, with rivers contained by flood embankments, old river courses, such as that of

the Don, and a network of ditches, dikes and canals with associated structures.

Variations in the underlying deposits, combined with local outcrops of the underlying sandstones and mudstones and with the effects of river systems, create distinct variations in the landscape within this overall impression of flat, farmed levels. In the north, around Selby as well as in the area between the rivers Torne and Idle in the south, there are sandy deposits and gravels which support remnants of heathland. Because they are difficult to cultivate without high levels of fertiliser input, many have been planted with coniferous plantations sometimes on sites of former ancient semi-natural woodland. The plantations combine with arable land in large fields to form a large-scale, wooded, farmland landscape.



Much of the area is formed by the floodplains of the main rivers. This low-lying, drained levels landscape is widespread around Goole, northwards up the valley of the Derwent and, south of the Humber, in the Ouse and Trent levels. The soils here are very fertile. The peat areas of Thorne, Hatfield, Crowle and Goole Moors have the largest extent of remnant raised mire in England and are of great ecological and historical importance, even though they are extensively worked for commercial peat production. This moor landscape contains belts of scrub woodland, heathy fragments and extensive peat workings with deep brown excavations and stockpiles of peat. There are historic landscapes at Haxey and Epworth Turbaries with strips remaining where traditional peat cutting (turbary) rights were once exercised. The former course of the river Don is notable for a number of old riverside settlements.

In some areas the landscape is more enclosed, providing small islands of shelter and more intimate spaces amidst the open levels. On the Isle of Axholme, open arable fields combine with gently undulating terrain and hedgerows, trees and small copses. North of Doncaster, heavy clay soils traditionally support smaller-scale pastoral agriculture. Although drainage has now allowed much of the area to be cultivated for arable crops, there is an area of historic landscape around Fishlake and Sykehouse where the traditional pattern of land use still remains. This includes small, thickly hedged fields, hedgerow trees, green lanes, networks of ditches and dikes, field ponds, some haymeadows, remnants of ridge and furrow fields as well as parklands with old oak trees. Place names in this area are particularly linked to the rather wet history of the area with names like *Carr*, *Fen*, *Ing* and *Syke*. The village of Fishlake has been settled for a thousand years and the field pattern may, in places, date from early enclosure. Moated buildings and remnants of other moats are also evidence of the historic character of the area.

The broad river valleys themselves have a distinctive character. The Derwent valley in the north has a traditional riverine landscape with pastures and floodmeadows enclosed by small woodlands and mature waterside willows. The field drains which edge the fields are often open and reedy. The species-rich meadows here, known collectively as the Derwent Ings, are highly valued for their wildlife. Other river valleys are influenced by arable cultivation and significant development, and have been favoured locations for collieries, power stations and power lines. The valleys of the rivers Trent, Don and Torne all have a degraded character partly due to such large-scale structures which are highly visible in the otherwise flat open landscape.

Physical Influences

This landscape is formed on drift deposits which overlie bedrock of Triassic Mercia Mudstones. These drift deposits have the greatest influence on the landscape, creating the flat or gently undulating topography. During the last

glaciation, a glacier extended south across this area, reaching almost as far as Doncaster. The main glacial front was, however, at Escrick, where it deposited a ridge of till, sand and gravel known as the Escrick Moraine.



SIMON WARNER/COUNTRYSIDE COMMISSION

Straight, steep-sided ditches separate many of the fields in the Humberhead Levels and run between large arable fields with few, often low cut, gappy hedges and with scattered large blocks of woodland, often visible in the distance.

The Escrick Moraine marked the northern limit of the extensive Lake Humber which was impounded by the blocking of the Humber gap by another ice front between Brough and Winterton to the east. Later this lake was filled with sediment, predominantly in the form of laminated clays up to 20 metres thick. These create wet, gleyed soils, locally overlain by peat forming the important raised mires of the area. Near and at the base of the peat are the remains of a buried forest. There are also extensive modern floodplain deposits and local deposits of wind-blown sand which create rather more free-draining, sandy, brown earths. The latter require high fertiliser input for cultivation and so commonly support birch and oak woodland, heathland, or conifer plantations. In some places there are local variations in topography caused by differences in the underlying deposits. There are higher ridges where the underlying sandstone or mudstone rises above the alluvium or where there are moundy glacial deposits. The Isle of Axholme, for example, which is formed of Mercia Mudstone and blown sand, is elevated above the surrounding levels to form a small, but distinct, area of landscape.

Historical and Cultural Influences

This area has been settled for several thousand years. Before Roman times the drier northern area, where the soils are lighter and flooding less of a problem, had been extensively cleared for small-scale pastoral farming related to a dispersed pattern of settlement. Further south the early landscape was wet and marshy with a complex system of rivers and creeks. It was much less suited to clearance and farming and so remained largely unsettled. The river system was used by invading Angles and Danes to penetrate deep into the countryside.

Early attempts at drainage of the marshes may have dated back to this period and to Roman times but the main period of drainage began in the 1620s when Cornelius Vermuyden, the famous Dutch drainage engineer, with others, began significant river diversions and drained many hectares of land. Such operations continued during the 18th century and created the drained levels typical of today's landscape. The Dutch engineers also introduced the practice of large-scale 'warping' in which areas of farmland were deliberately inundated with seasonally impounded tidal waters which deposited layers of alluvial silt over the existing soils to enrich them. Many of the drainage dikes were used for this purpose and have names such as the Swinefleet Warping Drain. The area also provides evidence of the development of different peat cutting techniques, of English, Dutch and Irish origin.

Much of the area, at least in the drier northern parts, was enclosed before the 18th century, although rough, unimproved pasture and heaths remained unenclosed as large extents of common pasture. Remnants remain today but both drainage and enclosure continued rapidly in the 18th and 19th centuries. New technology assisted in this and later drainage was assisted by steam powered pumps.

The marshes, once drained, were progressively enclosed by both private and parliamentary enclosures and converted to increasingly intensive agriculture as warping increased the fertility and allowed vegetables to be grown.

Buildings and Settlement

Settlement in the area is quite scattered and has traditionally been located on the higher ground out of reach of the floods which used to inundate the area before it was drained and the rivers regulated. Roads also traditionally followed the higher ground and the course of dry tracks through the former marshes. As a result many villages tend to be strung out along roads, predominantly on higher ground. There are also larger, nucleated villages, small market towns and larger more industrial centres like Goole and Selby. Building materials are red 'Barton' brick and red pantiles, though with slate appearing in the north. More recent development has used many different materials including orange bricks made from Mercia Mudstone clays.

Outside the villages there are large, relatively isolated farmsteads generally made up of an old, usually brick and



The river Derwent is one of several large rivers, others include the Don, Torne, Idle, Went, Aire, Ouse and Trent, which flow through the Humberhead Levels to drain into the Humber Estuary. Their floodplains play an important role in forming the landscape. The Derwent has a traditional riverine landscape with pastures and flood meadows enclosed by small woodlands and mature waterside meadows. The species-rich meadows here, known collectively as the Derwent Ings, are highly valued for their wildlife. Elsewhere, however, rivers flow through intensive arable fields and have little or no presence within the landscape.

pantile built farmhouse, older farm buildings and a complex of large, sometimes industrial style modern farm buildings. There are also many reminders of the drainage history of the area including dikes, berms, bridge crossings and disused windmills and water towers. More recent additions to the landscape include prominent features, especially the cooling towers and structures of Drax and Eggborough power stations and their associated lines of pylons, and the M18 and M62 motorways.

Land Cover

Most of the Humberhead area is intensively farmed. High input, essentially 'industrialised' cropping systems dominate the area, with cereals and root crops predominating. Livestock farming involves pigs, poultry, beef cattle and dairy herds.

Fields are large and mainly enclosed by dikes. Hedges and hedgerow trees are limited in extent, though they are more common in localised areas of more historic, enclosed character like Fishlake and Sykehouse. Woods - many planted for field sports - are restricted in extent, except for the areas of sandy soils to the north and south where remnant birch and oak woods and quite extensive conifer plantations occur.

There are important alluvial flood meadows known as Ings which are valued for their wetland vegetation and as habitats for wintering and migrating birds. The sands still support some remnant heathland and there are also some areas of neutral grassland on clay soils which are of wildlife importance. The remnant raised mires on the peat deposits are of great importance although few areas remain which have not been affected by drainage or peat cutting.



MIKE WILLIAMS/COUNTRYSIDE COMMISSION

The Humberhead Levels encompass several important areas of historic landscape, such as the more enclosed agricultural landscape in the Fishlake and Sykehouse area - seen here - the remnant open fields of the Isle of Axholme and the unique 'cable' landscape of Thorne.

The Changing Countryside

- Intensification of agriculture has resulted in removal of hedges, trees, small woods and remaining grasslands to make a traditionally open landscape even more so. There has also been further lowering of the water table as a result both of drainage and pumping down of levels to abstract water for irrigation. Such changes continue to cause further loss of habitats and old water courses. Warping drains have also been filled in and ploughed over. The remnants of more traditional farming landscapes are inevitably threatened by such changes and commercial peat extraction continues to effect the areas of raised mire in the peat moor areas.
- Industrial activity has had a major impact notably through the construction of power stations in the open landscape. More recently there have been changes due to the coal mining industry with mine closures in traditional areas and the opening of new deep mines in the Selby coalfield. New coal field development has led to significant effects on the character of local villages which have been expanded.
- Construction of new motorway routes, to provide improved access to the Humber ports, has also had an impact and the roads and embankments are particularly conspicuous in this flat landscape.

Shaping the Future

- Semi-natural habitats are extremely limited in this intensively farmed landscape and so those that remain require special consideration. This is particularly the case with raised mires where there may now be opportunities to recreate areas of this habitat following peat extraction. Heathlands on the sandy ridges may also require incentives to encourage positive management. The maintenance of historic landscapes around Fishlake and Sykehouse and the contrasting Isle of Axholme is important.
- Rivers and watercourses are a vital part of this landscape and there are opportunities to pursue management regimes, for both rivers and dikes, which are more sympathetic to both nature-conservation interests and wildlife as well as to landscape. There may also be scope for an integrated approach to recreating wetlands and wet grasslands in some areas.
- Development issues which may need to be addressed in the future include sand and gravel extraction, the disposal of fly ash from power stations (and the resulting raised ground levels), the expansion of coal mining in the Selby coalfield and diversification by farmers into leisure activities including golf courses, fishing pools and light industry.

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Glossary

gleyed: waterlogged

mire: wet, swampy land



Many rivers and water courses in the Humberhead Levels are highly engineered and sometimes have water levels above that of the surrounding land. The scene here of the river Idle is an example where large flood protection banks follow the river and the adjacent low lying arable farmland is pump drained.