

Appendix 18D - Relevant Landscape Character Assessments

SOUTH HOLLAND LANDSCAPE CAPACITY STUDY

Field Survey
Sheet No 2

Landscape Character
Type: PEATY FENS

Topography flat rolling undulating broad valley narrow valley

Dominant Land Cover and Landscape Elements:

Buildings	Heritage	Farming	Woodland/trees	Hydrology	Communication
<u>farms</u> <u>masts</u> <u>poles</u>	<u>buildings</u> <u>country house</u> <u>field systems</u>	<u>hedgcs</u> <u>fields</u> <u>fences</u>	<u>deciduous</u> <u>mixed</u> <u>shelter belts</u>	<u>rivers</u> <u>tidal creeks</u> <u>drainage channels</u> <u>drainage ditches</u>	<u>roads</u> <u>railways</u> <u>navigable rivers</u>
<u>pylons</u>	<u>ecclesiastical</u>	<u>arable</u>	<u>hedgerows</u>	<u>sea banks</u>	<u>airfields</u>
<u>Industrial</u>	<u>war monuments</u>	<u>market gardens</u>	<u>orchards</u>	<u>water control structures</u>	<u>pylons</u>
<u>commercial</u>		<u>orchards</u>	<u>clumps</u>		<u>masts</u>
<u>settlements</u>		<u>marsh</u>	<u>coniferous screens</u>		

Brief Description:

Flat topography dissected by long straight roads, rivers, drainage channels and drainage ditches, often on raised banks (1-3 metres high). Predominantly linear settlement. Large scale, extensive views, and largely uninterrupted skyline. A sense of openness/exposure. A strong linear pattern, defined by geometric arable fields of cereal and root crops, bounded by drainage channels or drainage ditches (not as intensive c.f. Settled Fen)

Key Characteristics:

Flat landform, geometric/linear fields, linear settlement and isolated farmsteads with associated shelterbelts

Architecture:

New-build and traditional mixture. Building materials are predominantly brick and a combination of brick and stone

Settlement form: predominantly linear.

Condition:

Good

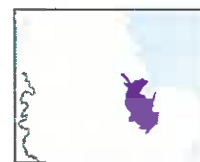
Visual Assessment criteria

Pattern	dominant	<u>strong</u>	broken	weak
Scale	intimate	<u>small</u>	medium	<u>large</u>
Texture	smooth	<u>textured</u>	rough	very rough
Colour	monochrome	<u>neutral</u>	colourful	garish
Complexity	uniform	<u>simple</u>	diverse	complex
Remoteness	wild	<u>remote</u>	vacant	active
Unity:	unified	<u>interrupted</u>	fragmented	chaotic
Form:	<u>straight</u>	<u>angular</u>	curved	sinuous
Enclosure	expansive	<u>open</u>	enclosed	constrained
Perception				
Security	intimate	<u>comfortable</u>	safe	unsettling
Stimulus	monotonous	<u>bland</u>	interesting	challenging
Tranquillity	remote	<u>vacant</u>	peaceful	busy
Pleasure	unpleasant	<u>pleasant</u>	attractive	beautiful

Photographic Record:



The Fens



Key Characteristics

- Large-scale, flat, open landscape with extensive vistas to level horizons and huge skies.
- A hierarchy of rivers, drains and ditches provide a strong influence throughout the area. Embanked rivers and roddons create local enclosure and elevation. Banks provide good grazing and grassland habitats.
- Modestly elevated 'islands' within fens provide isolated higher ground for most settlement. A higher proportion of grassland, tree cover and hedgerows are associated with these areas.
- Settled Fens or 'Townlands', in are set back from the Wash, exhibit an ancient medieval and irregular field pattern. Typically smaller-scale with scattered farmsteads and dispersed ribbon settlements along the main arterial routes.
- Peaty Fens drained in 17th century comprise large rectilinear fields of black soil. A geometric road and drainage pattern with major high-level drains, washes and associated pumping stations. Roads and rail links often on elevated banks.
- Area south of Lincolnshire Wolds most recently drained with Wolds providing marked 'Upland' horizon to north.
- Woodland cover sparse. Occasional avenues to roads, elsewhere isolated field trees have marked significance. Shelter belts including poplar, willow and leylandii hedges around farmsteads. Numerous orchards in Wisbech area.
- Fragments of relic wet fen areas at Wicken, Woodwalton and Holme.
- Built forms exhibit strong influence ranging from historic cathedrals and churches, like Ely and Boston to large agricultural and industrial structures. Domestic architecture displays combination of elegant Georgian brick houses and bland 20th century bungalows.
- Marshes directly adjacent to the Wash exhibit an exceptionally open aspect, broken only by a series of sea walls. Associated river outfall structures, tidal saltmarshes and mudflats.
- Rich and varied intensive agricultural land use including wide range of arable, root crops, bulbs, vegetables and livestock. Field labourers prevalent at harvesting. Horticultural glasshouses and general agricultural clutter a significant feature.
- Bronze Age, Iron Age and Roman landscapes emerging from below the falling peat. Very rich archaeology especially on fen margins.



NATIONAL TRUST

The once vast expanse of wetland that had existed prior to the extensive drainage of the Fens is now confined to a few remnants, such as here at Wicken Fen. Though fragmented, and often surrounded by a sea of intensive farming, these areas are an intrinsic part of the Fens character, offering a glimpse of the area's origins as well as important wildlife and recreational resources for today.

Landscape Character

The Fens is a large area which slowly drains towards the Wash, England's largest tidal estuary. The area abuts a number of other character areas. To the east lies North West Norfolk and the Breckland. To the south-east rises the gently rolling East Anglian Chalk and to the south-west are the undulating Bedfordshire and Cambridgeshire Claylands. To the west, rise





the gently shelving slopes of the Kesteven Uplands and the southern Lincolnshire Edge. To the north-west, the woods and gravel workings of the Central Lincolnshire Clay Vale gradually slope down to the Lincolnshire Fens, while due north the Lincolnshire Wolds rise to create a dominant 'Upland' horizon. The Steeping river marks the quieter north-east boundary to the Lincolnshire Coast and Marshes. The land boundary of the Fens is typically drawn along a series of catchwater drains, dykes, canalized rivers and lodes.

The single obvious factor uniting the Fens is the low-lying, level terrain. With the exception of the Isle of Ely, which reaches above 20 m, levels rarely pass the 10 m contour, and typically vary by little more than one or two metres over many miles. Much of the land is below sea level, relying on pumped drainage and the control of sluices at high and low tides to maintain its agricultural viability. The level horizons and the huge scale of the landscape create a strong sense of isolation. There are, typically, large open panoramas and enormous skies, whose changing weather patterns have a strong influence on the observer. The large fields and strong seasonal changes of colour, created by varied and multiple cropping in the rich soils, forms a landscape which can, at one and the same time, be intimidating and yet uplifting. It is a landscape which represents man's dominance over the environment and often results in a strong rectilinear pattern of drainage to drain inland fens or reclaim coastal marshes.



The Fens is characterised by its rich and varied intensive agriculture, including a wide range of arable, root crops, bulbs, vegetables and livestock. This view of strip vegetable growing is typical of the area around Spalding.

Although at first acquaintance the Fens can seem monotonous, there are marked variations and graduations as one moves from fen to fen and, more noticeably, between areas with differing lengths of settlement history. There are four broad distinctions within the Fens. Firstly, the 'Settled fens' or 'Townlands', which run in a broad arc inland from the Wash, between Kings Lynn and Boston. This is a more ancient small-scale landscape of sinuous lanes and relative intimacy with a higher density of settlements, some fine churches and remnant grasslands.

Secondly, the extensive 'Peaty Fens' or 'Black Fens' which were finally comprehensively drained in the 17th to 19th centuries. This area comprises broad rectilinear fields and straight roads. The only consistent relief to the level landform are the 'negative' notches of the drainage ditches and the raised berms and banks of the artificial drainage channels. Within the broad area of peat fens are a few isolated islands of higher ground, most notably the Isle of Ely.

Thirdly, the fens of south-east Lincolnshire between the Townlands and the Wolds. This was the last area to be drained. Works were complete by 1820, having been accelerated in the agricultural and industrial revolution. The drainage here was so thorough that scarcely a vestige remains of what had been one of Britain's richest wildlife habitats. This is an open productive landscape with a strongly rectilinear form.

Finally, the band of Wash Marshes reclaimed from the Wash by the construction of a series of sea wall defences begun in the 17th century. Here, extensive fields of vegetable crops stand alone against the sky. Beyond the defensive walls, saltmarshes and tidal mudflats, often abundant with wildfowl, stretch out into the Wash.

Physical Influences

The Fens is a complex landscape which drains to the tidal basin of the Wash. As sea level has changed since the last Ice Age, the balance of saltmarsh, fen, bog and woodland has altered. The underlying geology is a combination of post-glacial alluvium and freshwater clays and post-Roman marine clays. The exception being elevated islands of Jurassic clay at the inner margins of the area, for example at Ely.

The soils over the central and coastal fens comprise rich, fertile, stoneless, calcareous, silty soils while inland are swathes of dark, friable, fen peat. The original courses of the rivers meandered slowly across the level fens causing widespread seasonal waterlogging by river water and high tides. Four major rivers drain into the Wash: the Witham, Welland, Nene and Great Ouse. All rivers now have artificial canalized courses which run straight for miles and are bounded by high banks to contain the watercourse from the lower adjacent fields. In some locations 'roddons', inland silt banks, mark the former course of old river beds and now lie like stranded sea serpents up to 2-3 m above the dark peat soils which have subsequently shrunk due to continuous cultivation, drainage and wind erosion of the peat. This irreversible shrinkage creates an ever greater demand for artificial drainage of the land.

Historical and Cultural Influences

The human history of the Fens has been a battle of man against the forces of nature to bring out the full agricultural potential of the land. Much of the early archaeological

evidence is now becoming apparent with shrinking peat levels exposing well-preserved remains for the first time since the Bronze Age.

The Romans were the first to attempt to control the water levels by building a sea wall along the inner Fen margin and cutting channels. At this time settlement comprised farms clinging to the higher ground along the banks of the new and improved drainage channels. Pastoral farming for wool and leather was the principal agricultural activity. Livestock were probably transported along the dykes, such as Car Dyke which ran from Lincoln to Peterborough along the western fen edge. Salt production from tidal salt water was one of the main economic activities. These artificial waterways fell into disuse after the Romans left.



DAVID BURTON/COUNTRYSIDE AGENCY

Long straight roads reflect the geometric drainage and field patterns of the drained fens, with isolated farm buildings often the only settlement in intensively farmed areas, such as here at Holland Fen, Lincolnshire.

In the Dark Ages the monks began to play an important role in the evolution of the area. Fen edge monasteries developed in Lincolnshire, such as on the gravel island at Crowland, and in Cambridgeshire, with a monastery preceding the great Cathedral at Ely. Lands on the clay island were granted to the monks to tend. The swamps of the Black Fen, veined with watercourses, provided refuge for the Saxon folk hero, Hereward the Wake, in his resistance to the Norman authorities. From the 13th century there were sporadic attempts to set up comprehensive drainage systems. One of these included the 14-mile cut between Peterborough and Guyhirn called Mortons Leam which still functions today. Fenland was drained through 'assarting' - the process by which common land was enclosed piecemeal by private landowners. On the 'Settled' Fen in the medieval period, grazing was prevalent and a pattern of radiating drove lines known as 'The Smeeth' developed between the coast and the inland grazing on the fen. Salt making, at Bicker Haven, was also characteristic in the medieval period. Residual mounds or 'salterns' remain in many places as evidence.

The most influential stage in changing the character of the area came in the 17th century when the 4th Earl of Bedford gained a Royal Charter to turn the 'wastelands' into good summer grazing. The Dutch engineer Vermuyden, who was chief designer, straightened the wayward rivers by creating new linear links and sluicing them against tidal inflow. Washes between parallel watercourses were created, for example The Hundred Foot or Ouse Washes, to enable temporary controlled flooding at high tides and high river levels. This process created the North, Middle and South 'Bedford' Levels. This vast agro-engineering project was not without its conflict. The local and fiercely independent 'Fen Tigers' fought against Bedford's 'Adventurers'. Initially it was hoped the Levels would naturally drain across the more coastal silty land. However the peat soils shrank and oxidised as they dried out, thereby necessitating the artificial pumping of the land, first by windmills, later by steam and now by diesel and electric pumps. The drainage was so advantageous to the productivity of the land that the former pastoral areas were converted to Grade I soils suitable for intensive arable, vegetable and horticultural production. The wealth created by the drainage of the area also came from new sources such as seed and bulb cultivation. The last areas to be drained were the East, West and Wildmore Fens of south-east Lincolnshire. Besides the draining of the inland Fens the reclamation of the coastal salt marshes has been significant. New sea walls were built to further extend the rich agricultural land into the Wash which resulted in the loss of estuary habitats.

The Fens have attracted literary attention over the centuries. John Clare wrote in the 19th century of the undrained fen:

'Here tempests howl
Around each flaggy plot
Where they who dread man's sight the water fowl
Hide and are frightened not.'

In the same century, Charles Kingsley wrote:-

'Gone are the ruffs and reeves, spoonbills, bitterns
and avocets ... Ah well at least we shall have meat
and mutton instead, and no more typhus and ague.'

This commentary noted how the marshy lands had gone and, with them, the dank, disease-bearing conditions. Traditional activities such as ice skating on frozen marshes, eeling and punting through reed beds have become even more marginalised through the 20th century. Graham Swift's 1980s novel *Waterland* keenly identifies the changing lifestyles of Fenland people.

Buildings and Settlement

The settlement pattern follows the historical development of the area. The Townlands comprise medium to large clusters around Boston, Spalding, Holbeach and Wisbech

with many villages having fine medieval churches, eg. West Walton. In this Settled Fen a small plot of 40 acres of productive land can support a viable farm unit. Vegetable and horticultural industries can still be highly labour intensive and consequential support a good-sized local population. The medieval pattern of north-south drove lines, between parent and daughter settlements on coast and fen edge respectively, was crossed in the 19th century by the A17 and A47. Since then the settlements in these Townlands have spread along these principal routes to create ribbon developments of smallholdings, modern bungalows, large agricultural barns and food processing buildings, eg. Sutton Bridge.

The 'Peaty Fens' inland are, by contrast, very sparsely settled with isolated farmsteads and houses on local areas of raised land being the only built elements for miles. Due to the shrinkage of the peat soils, many buildings are now derelict, either standing at alarming angles or shored up, while the linear roads have likewise suffered showing significant undulations.

Cambridge, which lies on the southern edge of the Fens and also at the junction with the Claylands and Chalklands, contains a mosaic of colleges which have long reflected the best in architecture. The idyllic 'Backs' down to the dreamy Grantchester Meadows beloved by Rupert Brooke mark the romantic yet controlled end of the Fens. Peterborough with its fine cathedral marks the western boundary of the Fens although the sprawling New Town sits uneasily on the Fen edge.

Ely, Boston, Wisbech, Spalding and Kings Lynn provide the major historic settlements within the Fens. Ely Cathedral dominates the skyline for miles 'like a great ship tugging at its moorings' (Betjeman). At Boston, once England's largest port, the 83 m high Octagonal tower known as the 'Boston Stump' is a marker across the open fen. At Wisbech, once a coastal port, elegant 18th century merchants' houses line the river Nene at North Brink, notably Peckover House (National Trust). Kings Lynn, which developed as a port and trading centre, possesses in part a notable town centre with intimate courtyards and alleys reflecting the Dutch influence. The quayside Custom House is a fine 17th century building.

Due to the lack of natural building materials, most materials were imported, except for reed and clay for bricks. For the fine ecclesiastical and collegiate buildings stone came from the quarries of Lincolnshire, Northamptonshire, Rutland and Yorkshire including Ancaster and Barnack Stone. Brick is the ubiquitous material with variations in colour and texture. It is found in the use of red bricks in the Wisbech merchants' houses and yellow gault clay brickwork in the Bedford Estate cottages at Thorney. In the rural areas, thatch is now the exception due to the disappearing reed beds.

Land Cover

The Fens are now predominantly cultivated. There is little semi-natural land left. Remnants of original fen, like that at Wicken Fen, are rare exceptions and stand stranded above the shrunken peat. There is negligible woodland, with the majority of trees found lining roads or clustering around villages and the fen estates, as at Thorney. Exceptions include Woodwalton to the west and small ex-decoy woodlands such as in the Eastern Fens. Extensive orchards and associated windbreaks are located in the Wisbech area to create a distinctive though dwindling landscape cover. Within the Townlands the varied vegetable and horticultural cropping is most typical on the more ancient irregular pattern of medium-sized fields. Around Spalding the bulb fields provide a strong seasonal feature popular with visiting tourists.

Much of the Peaty Fens comprise field vegetables, root and cereal crops. Here field sizes are large and rectilinear with dykes and crop demarcation providing the subdivision of units. Pollard willows also feature in some areas, as at Whittlesey. The 'Washes', between the Old and New Bedford rivers and the Nene Washes, provide a man-made yet valuable wildlife resource of international significance for wildfowl.

The saltmarsh and mudflats beyond the sea walls, which extend towards the Wash, are also valuable habitats for wildfowl, wading birds and other wildlife.

Around the low clay hills, most notably the Isle of Ely, the landscape is one of mature trees and hedgerows containing small arable fields and occasional remnant ridge and furrow pasture.

The Changing Countryside

- Past and continuing shrinkage, oxidation and wind erosion of peaty fens due to drainage and cultivation. Falling land levels and reduction in fertility, particularly on gravels. An increased reliance on pumping which, combined with rising sea levels, creates an ever more artificial and perilous balance.
- Reclamation of saltmarsh for agriculture and consequential squeezing of intertidal mudflats (now largely halted). Some re-introduction of grazing to salt marshes.
- Loss of grazing banks and grasslands around settlements by ploughing and move to cropping. Subsequent loss of livestock.
- Dyke and embankment upgrading to aid flood protection. Some overmanagement of ditches, reducing aquatic and marginal vegetation. Some limited loss of dykes and banks in Suffolk, where now redundant.



Ely Cathedral dominates the skyline for miles around 'like a great ship tugging at its moorings' (Betjeman). Like Ely, most settlement in the drained fens is restricted to the higher ground formed by 'islands of clay'.

- To satisfy market forces for top quality vegetables, development of multiple cropping, irrigation and associated reservoirs.
- Gravel extraction to north of Peterborough at Langtoft and Baston.
- Loss of individual trees including pollards. Recent tree planting predominantly of *leylandii* to create shelter.
- Loss of orchards, eg around the Wisbech and Cottenham area.
- Proliferation of new large-scale agricultural buildings and dereliction of older farm buildings due to peat shrinkage or changing land use. Shrinkage damage to minor roads.
- Visually intrusive development to settlement margins including road schemes, power lines, industrial and residential.
- Light pollution resulting from intensive agriculture and growth of settlements - particularly apparent in the flat terrain.
- Linking Fen villages and settlements to their surrounding landscape should be considered, using grassland, wetland, shelter belts and hedgerow planting with the mix dependent on local patterns.
- Drainage dykes and embankments need managing by reprofiling watercourses, re-creating herb-rich grassland to embankments and reintroduction of grazing. Wetland and grassland buffer strips alongside field margins would benefit wildlife.
- The re-creation of sizeable areas of wet swamp fenland and wash grasslands by management of rivers and drains should be considered. The use of washlands for winter water storage and the protection of retained areas eg Wicken Fen and Ouse and Nene Washes are important.
- The re-introduction of grazing to marshes and sea wall defences and the protection of tidal mudflats and marshes would be beneficial.
- The retention of old orchards and fruit varieties around Wisbech and other areas of Settled Fen are important as is new orchard planting.
- The conservation of archaeological sites at risk from peat erosion and cultivation should be addressed.

Shaping the Future

- The retention of the distinctive large-scale vistas is important.
- Clumped tree planting is needed to soften the impact of isolated farmsteads and buildings and, occasionally, along roads or ditchlines where already a local feature. The pollarding of existing willows needs to be addressed.
- On clay islands, the introduction of new woodlands and hedgerow reinstatement would enhance sub-area distinctiveness.

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Glossary

berm: a flat strip of land, raised bank or terrace bordering a river

roddons: inland silt banks



The Middle-level drain, in Norfolk, constructed in 1848. The hierarchy of embanked rivers and drains provide a strong influence throughout the area, often elevated above the low lying farmland, the level of which is falling due to drainage and farming practice.

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