

# Halvergate Marshes Conservation Area



**Adopted 20/03/2015**

## Halvergate Marshes Conservation Area Appraisal

### Introduction

#### *Why have Conservation Areas?*

A review of policies relating to the historic environment carried out by English Heritage on behalf of the Secretary of States for Culture Media and Sport and the Environment Transport and the Regions was published in December 2000 under the heading 'Power of Place'.

The Report which reflected views now held generally by the population at large, confirmed 5 main messages

- i Most people place a high value on the historic environment and think it right there should be public funding to preserve it.
- ii Because people care about their environment they want to be involved in decisions affecting it.
- iii The historic environment is seen by most people as a totality. They care about the whole of their environment.
- iv Everyone has a part to play caring for the historic environment. More will be achieved if we work together.
- v Everything rests in sound knowledge and understanding and takes account of the values people place on their surroundings.

In summary we must balance the need to care for the historic environment with the need for change. We need to understand the character of places and the significance people ascribe to them.

The concept of conservation areas was first introduced in the Civic Amenities Act 1967, in which local planning authorities were encouraged to determine which parts of their area could be defined as "Areas of Special Architectural or Historic Interest, the character or appearance of which it is desirable to preserve or enhance".

The importance of the 1967 Act was for the first time recognition was given to the architectural or historic interest, not only of individual buildings but also to groups of buildings: the relationship of one building to another and the quality and the character of the spaces between them.

The duty of local planning authorities to designate conservation areas was embodied in the Town and Country Planning Act 1971, Section 277. Since then further legislation has sought to strengthen and protect these areas by reinforcing already established measures of planning control in the Planning (Listed Buildings and Conservation Areas) Act 1990, and now reflected in the National Planning Policy Framework (NPPF).

Unlike listed buildings, which are selected on national standards, the designation of Conservation Areas in the main is carried out at District level based upon criteria of local distinctiveness and the historic interest of an area as a whole. However, in the past, the criteria adopted by different local authorities in determining what constitutes a special area have tended to vary widely. For example, although public opinion seems to be overwhelmingly in favour of conserving and enhancing the familiar and cherished local scene, what is familiar to many, may only be cherished by some.

Over the last 30 years this approach has changed significantly. Much greater emphasis is now placed on involving the local community in evaluating 'what makes an area special', whether it should be designated and where boundaries should be drawn.

It is now recognised that the historical combination of local architectural style and the use of indigenous materials within the wider local landscape creates what has been termed 'local distinctiveness'. Distinctiveness varies within the relatively restricted confines of individual counties, which in turn are distinct in terms of the country as a whole.

Conservation Area designation for settlements and wider areas which embody this local distinctiveness may afford them protection against development which bears no relation to the locality either in terms of the buildings within it or landscape surrounding it.

The historical development of such settlements and their surrounding landscape are the 'journals' through which the social and economic development of the locality can be traced. The pattern of agricultural and industrial progress of settlements (their social history) is by definition expressed in the architecture and landscape of any area.

It is not intended (nor would it be desirable) to use Conservation Area designation as a way of preventing or restricting development, the expansion of a settlement or preventing contemporary innovative design. Logically in the future new development should add to, rather than detract from the character of an area and will in turn help to chart historical development. However, all development should seek to preserve and enhance the character and appearance of the area.

#### *Aims and objectives*

The Halvergate Marshes Conservation Area was originally designated in 1995. This appraisal examines the historic development and special character of the marshes at Halvergate and Haddiscoe, reviews the boundaries of the conservation area and suggests areas for change.

If adopted, the appraisal will provide a sound basis for development management and encourage initiatives which endeavour to improve and protect the conservation area as well as stimulating local interest and awareness of both problems and opportunities.

#### *Planning policy context*

There are a range of policies which affect Conservation Areas originating from both national and local sources. The latest national documents in respect of historic buildings and conservation areas are The Government's Statement on the Historic Environment for England 2010, the National Planning Policy Framework published in March 2012 and Planning Practice Guidance for the NPPF 2014, published by the Department for Communities and Local Government. The Broads Authority endorses the contents of these documents and decisions made will reflect the various provisions contained in them.

Locally, in line with government policy, the Broads Authority is currently reviewing and revising local policies which will be published in the Local Plan (formerly the Local Development Framework (LDF)). The Broads Authority has an adopted Core Strategy (2007) and Development Management Policies DPD (2011) and is progressing its Sites Specifics DPD. The Broads Authority has some saved Local Plan (2003 and 1997 respectively) Policies in place

To support these policies, the Broads Authority provide further advice and details in a series of leaflets, which are currently being reviewed and expanded as part of the Local Plan process. A list of those currently available is attached in Appendix 7.

## Halvergate Marshes Conservation Area

Halvergate Marshes Conservation Area was declared a conservation area in 1995. The conservation area comprises of a large area of the Halvergate Marshes (the Halvergate Triangle) and part of Haddiscoe Marshes (The Island), north of the New Cut, together with the areas forming the eastern fringe of the River Yare. This appraisal is divided into two character areas, the Halvergate Triangle and Haddiscoe Island (including the eastern fringe of the River Yare). To the west of the Halvergate Marshes Conservation Area lies a separate conservation area, the Halvergate and Tunstall Conservation Area, which was declared by Broadland District Council in May 2007 and adopted by the Broads Authority shortly afterwards. The boundaries of the Halvergate and Tunstall Conservation Area are drawn tightly around the village envelopes of Halvergate and Tunstall and only the settlement of Tunstall is within the Broads Authority Executive area, Halvergate village being entirely in Broadland District Council's area.

### *Summary of special interest*

Halvergate Marshes and Haddiscoe Island contain the largest area of grazing marshes in the east of England and epitomise the marshland landscape of the Broads area - vast panoramic grazing marshes, winding waterways, wide open skies, openness and a high level of visibility within a wide valley floodplain. Within this large scale landscape, there is a strong dyke pattern evident within areas of marshland, most of which is still used in the traditional way for cattle grazing. The landscape is punctuated by drainage mills formerly used to drain the grazing marshes. Although other marshland areas of the country, including the Fens, were drained by such mills, unlike Halvergate, most retain only the scant remains of their wind-powered mills and only Holland has anything comparable in terms of number of remains.

Sparsely populated, this area is a unique survival with a rich and wide ranging biodiversity, particularly for over-wintering and breeding birds, and plants and invertebrates in the marsh dykes. This special biodiversity interest is recognised through national and international designations, (see Appendix 1).

The Rivers Bure, Waveney and Yare flow through the conservation area and afford opportunities for boating and sailing. The area is highly visible from river, rail and road traffic routes and from the long distance footpaths within.

### *Location and context*

The Halvergate Marshes Conservation Area is bounded by the higher land between Stokesby and Caister to the north, between Reedham and Acle to the west; to the east it includes the marshland areas adjoining the Rivers Yare and Waveney from their confluence at the southern end of Breydon Water, with the New Cut forming the western boundary. The River Yare marks the boundary between Halvergate Triangle and Haddiscoe Island. The conservation area includes the east-west reaches of the River Bure between Acle and Yarmouth and a section of the A47 Norwich-Yarmouth road.

The large parish of Halvergate is situated in the southeast part of Norfolk, immediately west of Great Yarmouth. Although covering an extensive area, much of the parish is uninhabited marshland with settlement being concentrated in the western part, almost exclusively outside the Halvergate Marshes Conservation Area.

### *Geology and physical influences*

It is important to relate the geology of this part of The Broads to its early history (see later section on archaeology). The formation of the Great Estuary, as sea levels began to rise about 2300 years ago, and the silting up of the area around 500 years later, have resulted in the Great Estuary being discernible in the landscape and on geological maps where there is a clear distinction between the Halvergate triangle and the surrounding uplands. The lower layers have Crag over London Clay over Upper Chalk; the Quaternary deposits above this consist of Breydon Formation silts and clays, with fringing peat along the Reedham/Acle western boundary transition. At the upper levels, deep stoneless, mainly calcareous clayey soils, with groundwater levels controlled by dykes and pumps

supporting permanent grassland, and occasional encroachments of arable cultivation. Silty clay loam subsoil exists, often calcareous, with layers of sand, silt and clay over the peat deposits.

To the south east of the Haddiscoe, an area of very sandy soil fringes the undivided sands and gravels of the higher ground to the coast. In contrast, Haddiscoe Island and the marshes to the south consist of Breydon Formation silts and clays. There is a very narrow, variable band of peat between these two zones, with peat incursions marking the location of former watercourse flowing into the estuary from the uplands of present-day Belton. The base of the rivers consists of marine deposits – river mud.

The area lies below sea level, varying between –1m OD and 0m OD. There is a strong distinction between this level area and the notable sharp rise to higher land on the fringes, even though this level change is only of the order of 5m. On Haddiscoe Island, although generally level, there are subtle variations in local topography, usually to do with land use practices and the extent of the old estuary, with the river banks between 2 and 3 metres high.

#### *Hydrology:*

In the Halvergate Marshes, the dyke network and the Fleet are effectively hydrologically isolated from the main river systems by the containing flood embankments, although there is localised seepage of brackish water through these flood banks. The western margin of Halvergate Marshes is spring-fed by water percolating through from the chalk aquifer underlying the higher ground - frequently in association with the peat areas - but the influence of this fresh water is very limited and there is not believed to be any other significant connections between surface water and ground water from the underlying aquifer (Norwich Crag).

The majority of the dykes are brackish, or in some instances saline, where the brackish water which seeps in from the rivers becomes concentrated through evaporation. The marshes are entirely pump drained, with water feeding from the dyke system into a network of main drains, and hence to the pumps along the river walls. The area is divided into a number of 'levels' each served by a pumping station. The soke dykes form a separate, although linked, drainage system, being generally wider than the internal dyke network and supporting an often strikingly saline vegetation element.

Historically, freshwater was taken from the both Rivers Yare and Bure through a number of sluices. Freshwater is now only supplied via the Stracey intake which supplies carefully monitored freshwater.

On Haddiscoe Island, the area is defined by its hydrology: the rivers Yare and Waveney and the New Cut define the main area, with the drainage pattern flowing north. New Cut and both rivers are embanked to heights of 2 to 3 metres AOD. The rivers Yare and Waveney are continuously embanked throughout this area. Although the width of the combined Yare and Waveney reaches 110m within Breydon Water, the Waveney further south is about 40m wide, but its embankments are up to 300m apart near Burgh Castle, with extensive ronds. Ronds extend along both banks of both rivers throughout this area.

#### *Management of the marshes*

Over time the marshes have been drained and reclaimed, resulting in the embankment of the rivers. Although little is known about the early history of flood defences they have been in place in various forms for many centuries, for example, Acle Dam is known to have been repaired in 1101. In other areas of the Broads pumped drainage has been in use or recorded since the end of the 17<sup>th</sup> century, and although on Halvergate there is little evidence so far of such early use of pumped drainage, water was lifted over the constructed flood bank into holding areas with a sluice, then let out into Breydon Water via a flap sluice as the tide falls – thus the river or drainage dyke level is actually higher than that of the surrounding land.

By the 18<sup>th</sup> century, Halvergate Fleet, originally the largest of the salt marsh creeks, was used as a 'washland' for temporary water storage, with 6 wind-powered drainage mills spaced along its length, although only three of the mills drained the Halvergate Marsh levels. The low banks nearest the river were 'summer walls', while the higher 'winter walls', set some 20 metres further back, prevented flood water or high tides from spreading out of the main wash land areas. The area between the two walls, known as the rands or ronds, which are up to 200 metres wide, would flood to a depth of about

600mm in winter. The Fleet was once the most significant natural drainage channel across the marshes, draining Wickhampton, South Walsham and Beighton Marshes into Breydon Water. It has been suggested that the parish boundaries and the boundaries for individual 'levels' are more likely to be natural in origin, since they would have been more difficult to adapt, once earthworks had been thrown up beside them, than the shallower dykes excavated within the levels to keep them drained. There was also another major fleet to the north, referred to as the Northern Rond by Tom Williamson in his publication 'The Norfolk Broads, A Landscape History'.

Haddiscoe Island was also drained and reclaimed for agriculture quite early in its history, probably using tidal sluices with gates that closed automatically on a rising tide. Fossilized creek patterns are evident within the dyke network, and indications of later enclosure or rationalisation of the dyke network are only apparent in the north east of the Island. Despite early reclamations, there has been a need for permanent and constant flood defences, with the requirement for constant flood defence exacerbated by the relationship between the length of the river wall, which has always required regular maintenance, and the area of drained marshes it encloses.

Wind powered drainage probably began in the 17<sup>th</sup> century and by the 1780s drainage mills were a common feature in the landscape. Improved drainage from wind began a gradual reduction in the number of ronds, which were no longer required to hold the floodwater, and to a change in the drainage pattern, with ruler-straight new dykes forming the new main drains leading to the older watercourses. Examples of this are the 700m long drain Mutton's Mill Dyke (circa 1830') and the straight section of drain leading to Mautby Upper Mill and Five Mile House pump.

The Land Drainage Act 1930 established many of the Internal Drainage Boards (IDBs) replacing earlier water management regimes. Exercising a general supervision over all matters relating to water level management of land within its district, the IDBs now manage the drainage system in the area, using diesel and electric sluices contained in pump houses to maintain water levels in the complex and irregular network of dykes and drains, all of which require constant maintenance – traditionally they were 'cromed' or cleared of vegetation, each year.

The drainage system has determined the field pattern. The area drained by one pump was referred to as a 'level', usually in a single ownership, divided from its neighbour by deep dykes and embankments. This creates the distinctive effect of a 'negative' rather than a 'positive' pattern, such as is created by a series of hedges and/or hedgerow trees. Throughout the marshes there are occasional clumps of vegetation, usually sallow and usually growing alongside a dyke, but never approximating to a hedge. The Halvergate area contains good examples of the three main types of dyke:

- long continuous, straight or smoothly curved, terminating at a drainage mills - known as 'mill drains'. This type is infrequent and is known to date from the late 17<sup>th</sup> C. Examples are the mill drain towards Manor Farm, Halvergate Marshes or the dykes leading to the complex of mills near Seven Mile House, Reedham Marshes;
- rectilinear, very straight dykes, especially on fringes of marsh. These are frequent, occurring throughout the marshes, and of modern origin, being generally parliamentary enclosure of former commons, 17<sup>th</sup> and 18<sup>th</sup> C additions or late or post medieval alterations to the underlying pattern;
- curvilinear, serpentine, ie originally natural channels, often parish boundaries, or the boundary of individual 'levels'. Halvergate Fleet is a good example. The wall on its north side is followed by a track, which was the former Norwich/Yarmouth route before the Acle Straight turnpike was constructed in the 1830s. The Fleet was converted to a low-level arterial drain in 1982. This complex and intermingled drainage pattern is generally of medium to small scale throughout Halvergate but although not a dominant feature is extensive enough to make it unique nationally.

In the Haddiscoe part of the conservation area, there is a distinction between the fairly large scale rectilinear drainage pattern of Langley Marshes in the northern section of the Island (possibly reflecting large-scale drainage re-organization after the construction of Langley Detached Drainage Mill in the 19<sup>th</sup> century), the smaller scale regular pattern along the western edge of the Waveney and the very serpentine pattern over much of Chedgrave Marshes, which becomes more regular along the New Cut. Fritton Marshes are a mix of small-scale regular and irregular dykes, as are Belton Marshes.

Within the marshes there are some discontinuous embankments, either beside principal former

watercourses, such as The Fleet or on the boundaries of principle levels, marking parish boundaries. Although these are very minor landscape elements, they have historic importance, being of medieval date, and should be considered in the context of flood defence works, where applicable.

During many centuries, there was much greater interaction between the upland and lowland in this area than occurs at present, with the upland parishes to some extent being semi-dependent upon the marsh and holdings and vice versa. The great importance of the marshland holdings is indicated by the system of detached parishes, with villages as far away as South Walsham and Chedgrave having land holdings in the marshes.

Stock were brought down in large numbers to summer on the marshes, dairy herds presumably travelled between the marshes around the floodplain margin and milking facilities at the upland farms on a twice-daily basis, and animals were brought into the area from further afield (notably Scotland) before being fattened up for market. Huge quantities of dyke spoil and aquatic vegetation were barrowed from the floodplain to the upland arable fields to enrich the soil each year, and prior to the construction of the A47, the Stone Road was a well-used track running through the marsh which linked the upland settlements to the west of Halvergate with Great Yarmouth, providing access to the Fleet Road, (historically the main route across the marshes) and later connecting to Acle New Road by the Branch Road.

### *Use of the marshes*

The conservation area consists largely of drained grazing marsh, divided by the drainage system into parcels known as 'levels', named by parish or landowner, with some arable pockets along the fringes with the adjacent uplands, some small areas of open fen and scrub/carr, with a tiny percentages of salt marsh (0.6%) and rough grass (0.7%). There is very little upstanding vegetation on the marshes, as the drainage dykes act as fences and field boundaries.

From the medieval period the marshes were utilised for sheep grazing, then horse and cattle grazing with the latter dominating by the 16<sup>th</sup> century. The practice of buying in store cattle from highland areas was established by the as early as 17<sup>th</sup> century and continued into the 20<sup>th</sup> century with remarkably little change. Currently, the dominant land use is still for cattle grazing with some sheep and horses.

It was common practice to graze stock on the river wall around Haddiscoe Island, the dyke at the base of the embankment usually prevented the animals from getting onto the managed reed beds, but the absence of such dykes on ronds on the Yare meant that some were regularly grazed until about 25 years ago. The introduction of first diesel-driven pumps and then electric pumps in the first half of the 20<sup>th</sup> century eliminated the need to use the washlands between the rivers Yare and Waveney for temporary water storage – flood alleviation – and they thus became an ideal habitat for overwintering birds. Areas that were formerly drained for sheep grazing are now regularly flooded for wading birds and as they are now mainly cattle grazed they are floristically indistinguishable from the adjoining grass marshes.

The reaches of the Waveney bordering Haddiscoe Island were cut for reed throughout on both ronds in the mid 1970s, but the majority of the ronds, which are a significant element in the land use of this area, are no longer managed or grazed. A very small section of rond on the west bank of the Yare near the Reedham end of the New Cut is managed reed bed and there are nearly 60 hectares of commercial reed bed on the Waveney bordering Haddiscoe Island. Continuous lengths of up to 1.5k of the Waveney's banks have been used for dumping spoil.

Topographical variation has enabled the location of water-related enterprises, such as marinas and boatyards, beneath the low cliffs near Belton, but much of the upland edge is woodland.

The management of the marshes through the maintenance of their biodiversity, allows the support of numerous rare species and wetland birds. This has had an effect on the landscape through the construction of scrapes which provide important feeding areas for wading birds. Further information about the range and extent of this is contained in Appendix 1.

### *The effect of changing agricultural practices from the 1970s*

The largely cattle grazed landscape of this area saw little change until the late 1970s and early 1980s, when loans became available to incentivise farmers to deep drain and plough their marshlands. Dykes were infilled and whilst it could be appreciated that farmers found it difficult to use combine harvesters and other large machinery on the small marshes typical of the drained marshland area, the loss of wildlife habitat as a result of the reduction of water levels in the dykes was deplored by conservationists. The subsequent outcry and public protests led to the establishment of the Broads Grazing Marshes Scheme which subsidised the traditional management of the landscape and ultimately led to the creation of Environmentally Sensitive Areas (ESAs) of which Halvergate was the first. Although the trend to arable conversion has largely been reversed (currently, grassland covers approximately 3005 hectares (72%) of the drained area), arable uses still occupy about a fifth (21%) of the area. In general, the grassland occupiers require a range of different water levels, according to individual management requirements under the agri-environment schemes.

However, the arable areas require low water levels for much of the year, particularly during the winter months. In 'The Land Use, Ecology and Conservation of Broadland' Martin George illustrates the effects of these changes of agricultural practice on the ecology, biodiversity and landscape of the area. When grazing ceases, the margins of the dykes become colonised by reeds resulting in adverse effects on aquatic and animal life and a gradual silting up of the drainage dykes. Dykes are then dredged and deepened to improve the drainage, with steep battered sides, although the actual water in the dyke is shallower for much of the year than it would have been formerly. The arable marsh dykes are floristically impoverished, because of the deep shade cast by vegetation growing on their margins and the limited depth of water. Although not proved, it is also suspected that many arable marsh dykes are contaminated by farm chemicals washed out of adjoining land.

Changes to environmental stewardship schemes could adversely affect the distinctive landscape character of the conservation area. It is important that changes in agricultural practices are limited in the future and where possible, encouragement given to reverting those marshes currently in arable use back to grazing land through continuing incentives to retain land in grazing use.

#### *Architectural styles and materials*

There are few buildings within the conservation area boundary. Unsurprisingly, those that remain relate to the use and management of the marsh landscape over the centuries, such as pump houses, floodbanks and soke dykes. Most prominent are the drainage mills, the tapered cylindrical towers built of local brick, some have had their weather boarded boat shaped cap restored, and others in a more derelict state have no roof or are given protection by a temporary metal cap. Some of the brick towers are externally tarred, a traditional method of protecting them. A few marshworker's cottages survive and some isolated farm buildings. These tend to be low buildings, small in scale with simple pitched roofs, again using locally produced bricks and pantiles. Their presence in the marshes is usually heralded by clumps of upstanding vegetation and bridges and access gates across the dykes. The character of the area could easily be diluted through the introduction of modern construction and materials for access roads, roofs, gates and stock-proofing and through the use of non-indigenous planting. Similarly, the introduction of new structures with a vertical emphasis, such as wind turbines, would disturb the horizontal character of the marshland or smaller scale details such as wing walls on crossing points.

The wide open nature of the landscape means that some of the buildings and settlements outside the area can be clearly seen from within it, thus having an effect on the character of the conservation area. Care should be taken to avoid large scale development and the use of materials of inappropriate colours on the fringes of the conservation area.

#### *Archaeology*

At the start of the Iron Age, this part of the east Norfolk coast was perhaps a mile further east than it is today, and the area now known as The Broads, was an area of peaty marshland crossed by the rivers Bure, Yare and Waveney. As sea levels began to rise about 2300 years ago, the sea broke through the spit of land at the Yare estuary mouth, marine conditions gradually returned to the Broads area and a Great Estuary was formed where the rivers met. Forests and fens were replaced by salt marshes and later tidal mud flats, and the peaty soils were covered by marine sand and clay. The estuary was a wide expanse of pools and mud flats over which the sea would have ebbed and flowed with every tide. During the Roman period, 1800 years ago, ships could sail over what is now



Halvergate Marshes, the River Yare was navigable as far as Caister St Edmund and vessels could access the Waveney Valley as far as Bungay. At Burgh Castle and Caister-on-Sea, defensive forts were built to secure the approaches, which were of great strategic importance to the Roman occupation of Britain. The remains of these impressive forts can still be seen today. The Great Estuary was an important route of traffic and communication into the heart of Norfolk and Suffolk with many small villas and farmsteads around its shores. At the mouth of the Great Estuary, the waters were split in two by a shingle bank. As sea levels began to fall 1500 years ago, the estuary gradually silted up and the sandbank grew to become the spit of land where Great Yarmouth lies today, leaving the tidal inlet of Breydon Water as the only visible remnant of the Great Estuary.

The Norfolk Historic Environment Service compiles records of known archaeological activity, sites, finds, cropmarks, earthworks, industrial remains, defensive structures and historic buildings in the county. These records are known as the Norfolk Historic Environment Record (NHER), and an abridged version can be accessed through the Norfolk Heritage Explorer website at [www.heritage.norfolk.gov.uk](http://www.heritage.norfolk.gov.uk). The NHER contains 269 records for the Halvergate Marshes Conservation Area.

Outside the conservation area finds recorded in the NHER in Halvergate parish include flint flakes, an axe head and some pottery fragments, suggesting prehistoric settlement, and cropmarks visible from aerial photographs, indicating ring ditches and possibly round barrows, indicate occupation in the Bronze Age although the latter have subsequently been flattened by agriculture.

Similar finds are recorded on Haddiscoe Island and a group of wooden piles found in the north of the Island in 1958 could have been part of a Bronze Age brushwood causeway across the marsh.

The Broads area was identified by English Heritage as having exceptional potential for waterlogged Archaeology in 2013.

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### **Sub-area character assessments**

Although the Halvergate Triangle and Haddiscoe Island share many features, there are subtle differences in their characters, many due to their historical development. Thus, in the following sections, the history and character of the two areas are considered separately.

#### **Halvergate Marshes.**

The Halvergate Marshes section of the conservation area is bounded by the higher land between Stokesby and Caister to the north, and between Reedham and Acle to the west, with the River Yare and Breydon Water forming the south eastern boundary.

##### *Historical development*

##### *Early history.*

The Norfolk National Mapping Programme (Broads Zone) in 2006/7 identified cropmarks of a coaxial field system, of later Iron Age to early Roman date, covering large tracts of the landscape outside the conservation area boundary. Although no actual building remains have been found, Roman and medieval pottery fragments may indicate the remains of a building of either age, and other finds dating from the Roman period indicate occupation of the land during that period. Similarly activity during the Saxon period is evidenced through various finds including a mount or brooch and a stirrup mount. Various mounds which are associated with the heating and evaporation of salt water indicate that salt was being produced during the Saxon period and into medieval times, salt being a valuable commodity. One such mound survives near Ashtree Farm, north of the Acle Straight with a WWI pillbox on top. Saxon names include Skeetholme, near Yarmouth (dung island) and Fuelholm (wild bird island).

Halvergate is recorded in the Domesday Book of 1086 as a village called 'Halfriate' and is referred to as 'Halvergata' in a document of 1182. Although its origin is unclear, the first half of the name probably means 'Half', and the second part possibly 'gate' which could be interpreted as indicating an island separating the river into two channels. An alternative derivation could be from the Old English for 'Land for which half a heriot is due' referring to a value for the land.

The oldest surviving buildings in the parish are the medieval churches at Tunstall and Halvergate village, both outside the Halvergate Marshes Conservation Area. Because of the low lying nature of the land there are few historic buildings in the conservation area, apart from a small number of marshworker's cottages and the drainage mills which are dealt with in a separate section. The sites of early structures in the parish can only be surmised by documentary evidence such as early maps, scatters of found objects or from aerial photographs.

Many other medieval features such as enclosures and drainage ditches have been identified from aerial photographs, although the latter cannot be dated precisely as they will have been repaired, re-dug and improved during post medieval times and up to the present day.

In Roman times the entire Halvergate triangle was an open estuary, with settlements and military installations at Burgh Castle and Caister-on-Sea, where there was also a sizeable port. Gradual changes of levels between the sea and the land and the formation of a sandbank at Yarmouth began a siltation process which by about 450 AD had reduced the estuary to the area now covered by Breydon Water. This was surrounded by mudflats of estuarine clay which permitted the development of saltmarsh, with peat deposits laid down only in hollows around the periphery. This land cover is still evident in the network of shallow dry watercourses that show up in aerial photographs, some of which were incorporated within the early drainage pattern, and survive as sinuous marsh drains.

Relative sea levels continued to fall during the Saxon and early medieval periods, allowing exploitation of the area for grazing. The Domesday Book records many sheep in manors bordering the marsh, which would probably have been brought down to the marshes for summer grazing. In early post-Conquest times many portions of Halvergate were held as private land, especially by large ecclesiastical landholders, and the available evidence suggests that by late Saxon times the marshes were divided into areas with separate names (often associated with a specific parish, not necessarily the nearest) and definable boundaries.

By the 12<sup>th</sup> century the marshes were a valuable resource, with a complex system of ownership linking grazing marsh to arable land on the neighbouring uplands. Research indicates that in the Middle Ages sheep were the principal grazers, with dairy herds on the marsh edge by the 13<sup>th</sup> century (perhaps due to rising sea levels), and some horses and bullocks.

During the medieval period there was a substantial rise in sea level and frequent inundation of the marshes, necessitating perhaps the first drainage works to reclaim the already productive and managed marshes and a change to cattle production, due to changes in the agricultural pattern, the reduced value of sheep's wool and perhaps also changes in sea level affecting the drainage of the marshes (Manship, writing in 1619, implied that the dredging and realignment of the entrance to Yarmouth Haven had led to the reclamation of thousands of acres of marshland previously subject to regular flooding). The construction of river banks seems to have been the responsibility of individual landowners, and this would certainly explain the variation in management – where land was held in common, no system existed to pay for or maintain drainage; a group of landowners might contribute to a scheme for their mutual benefit.

In 1616 records demonstrate that land in the heart of the marshes was worth considerably less than that on the fringes (excluding the damp peripheral common lands). By 1715 this situation was reversed, almost certainly by increasing success in embanking and draining the central areas, and the central marshes continued to be highly valued through the 18<sup>th</sup> and 19<sup>th</sup> centuries. There is evidence to suggest that the main period of change to the natural drainage pattern occurred from the 17<sup>th</sup> century onwards, following changes in climate and increased flooding, especially in the areas nearest the rivers in the centre of the marsh. Numerous additions and alterations were made to the natural drainage channels, the pattern of which was only retained at the boundary of levels or along major watercourses.

### *Later history*

The Parliamentary enclosures of the early 19<sup>th</sup> century dealt only with the poorly drained common land on the western side of the marsh, the remainder being already privately enclosed. The central marsh landholdings generally small, a maximum of 38 acres, while the marsh edge landholdings,

being less valuable, were usually larger, ie Mautby Marsh all one ownership (Earl of Yarmouth) in early 18<sup>th</sup> C. By 1840 central marsh ownership was even more fragmented, while conversely the marsh edge holdings were getting larger and into the hands of local worthies following enclosure. Documentary evidence suggests that this long established pattern remained constant for over 200 years.

Later changes to the landscape came with the construction of the Norwich/Yarmouth toll road in 1830 - 31 and the growth of the pollard willow planting along it to stabilize the road edges, and the construction of the railways, Norwich to Yarmouth (via Reedham) in 1844, Reedham to Haddiscoe in 1847. Haddiscoe to Yarmouth in the 1850s and from Acle to Yarmouth (beside the 'Acle Straight') in 1883. Willow planting is also evident along the Branch Road.

Two polygonal WWI pillboxes survive either side of the A47 on the approach to Great Yarmouth, the northern one of which is in the conservation area and on top of a mound associated with the production of salt in the mediaeval period. These pillboxes and others in the area from World War II are reminders of strategic lines of inland defence across the marshes set up during both the Wars.

By the middle of the 20<sup>th</sup> century, as the marshes became drier due to the installation of improved drainage systems, there came a progressive change in land use from grazing to arable cultivation. This process was only halted and in many cases reversed, in the late 1970s following the outcry over proposals to comprehensively drain the Halvergate marshes, through the implementation of the Broads Grazing Marsh Conservation Scheme, and the ESA programme. Another change occurred in 1986 when the RSPB acquired part of Beighton Marshes, near Berney Arms to provide the shallow flooded water conditions that attract wildfowl and waders. The RSPB also manage all of Beighton and Berney Marshes and those at Ashtree Farm near Berney Arms drainage mill.

#### *Transport and accessibility*

Throughout the history of the marshes the rivers have been the dominant means of transport. Until the 1830s the main terrestrial route across the marshes between Norwich and Yarmouth followed the northern embankment of the meandering course of the Halvergate Fleet (now a minor watercourse) and the north wall of Breydon Water, and several of the drainage mills and marsh houses in this area are located along it. It was replaced in the 1830s by the Norwich-Acle turnpike – known as the Acle Straight - which is two ruler-straight sections, joining near Stracey Arms Mill, with a new branch road to Halvergate village.

Two railway lines cross the marshes, Norwich to Yarmouth via Acle and Norwich to Yarmouth via Reedham and overall have relatively little visual or noise impact. The latter, to the south of the area retains a halt near Berney Arms, probably the most remote one in the country, where formerly there was a station. Both here and to the north of the Reedham group of mills were blocks of railway cottages, but only those north of Reedham Marshes remain, and they have gradually fallen into disrepair.

A concrete road was constructed by the Drainage Board from Wickhampton to near Seven Mile House, Reedham Marshes in 1980s, for access, but most of the tracks into the marshes are private and the main means of accessing the depths of the marshes is on foot, via the long-distance footpath known as Weavers' Way, which follows the Fleet Dyke between Halvergate and Breydon and crosses the marshes from Halvergate or Wickhampton to Berney. Footpaths are often raised above marsh level, set on floodbanks or former levees, with views at the eastern edge over the River Yare and the south western end of Breydon Water. Otherwise the remainder of the marshes are largely inaccessible.

#### *Settlements and industry:*

The conservation area is distinguished partly by the entire absence of settlements. There is a strong contrast between the apparently unpopulated marshes and the string of villages around the margin, such as Reedham and Stokesby. The marshes were not always empty of human habitation. Lonely marsh farms have been in existence for 1000 years, as near Ash Tree Farm at the east end of the Acle Straight and at Six Mile House, Halvergate, but the marsh houses have always been few and scattered. By the 1930s, only about 20 marshworker's were left. Their tasks included looking after

cattle, cutting drains, repairing river walls, renewing sluices and tending the drainage mills, plus wildfowling, eeling and making butter.

Settlement along the Yare clusters into two distinct groups, around Seven Mile House on the Reedham Marshes and around Berney Arms. The north wall of Breydon also included a large marsh farm with various cattle compounds and later a mill and cottage as well as numerous houseboats of which only the mill and a fragment of the cottage remain.

The grouping on the Reedham marshes is largely based around the drainage of the area and includes three windmills, a steam engine house and a diesel engine shed as well as the Seven Mile house and some remains of a further marshworker's house. The site was a particularly remote one until the diesel pump was replaced by an electric pump in the 1980s and concrete Internal Drainage Board access roads were built. The mills and engine house have been repaired and a visitor facility created in a partnership between Norfolk Windmills Trust and the Broads Authority with funded through WREN (Waste Recycling Environmental Limited), the Heritage Lottery Fund and Broadland District Council.

Although no longer a visible landscape feature, a small hamlet developed at Berney Arms around Thomas Trench Berney's 19<sup>th</sup> century Reedham Cement Works which at one time included 11 dwellings and a chapel. Berney Arms Mill (the tallest on the Broads) formed part of this complex and survives along with Ashtree Farmhouse and the Berney Arms Public House. Berney Arms Mill was dual purpose – drainage in winter and grinding clinker, made from a mixture of chalk (brought down from Whitlingham by wherry) and clay from Breydon Water or Oulton Broad, kiln-baked and ground to a powder to make cement, in summer. Berney Arms Mill is in the care of English Heritage and Ashtree Farmhouse has been extended and turned into three dwellings by the RSPB who are now a significant presence in this area, controlling a number of the marshes to the north of this area as a reserve. This has created change in the landscape as a higher water table is maintained, wet scrapes are created and a number of small wind powered pumps have been introduced, designed to do the reverse of the job of the traditional mills and instead lift water onto the marshes.

This section of the Bure is, like the Yare, heavily embanked. There has in the past been a greater connection with the settlements to the north of the Bure with former crossing points at Stokesby, Runham and Mautby. A number of mills and potentially early settlement sites are situated along the Bure usually corresponding with the 'Mile House' locations. The valley sides and settlement edge to the north are visible and the mills combine visually with those on the north side of the Bure although the floodbanks mean only the upper part of the mills are visible across the river. At the north-western extent of this area is Tunstall Dyke, formerly connecting the Bure with Tunstall upland. The navigation apparently survived the building of road and railway across its route as provision was made to allow wherries underneath, however its use still died out in the late 19<sup>th</sup> Century. The waterway is now dry and overgrown, its staithe house and buildings gone, but two mills remain, one to either side, although a plantation immediately west of the dyke limits their landscape contribution.

#### *Drainage mills in the Halvergate Triangle:*

There were sites of more than 240 wind-powered drainage mills in Broadland, of which around 20 were still in use in the 1930's. They were gradually replaced for draining the marshes over the next two decades as diesel and electrically powered pumps came into widespread use. The structures for the most part gradually fell into disrepair, although some were lost as a result of fire or storm events. Drainage mills in various states of repair can be seen at 72 sites across The Broads area.

Halvergate boasts the greatest concentration of wind powered drainage mills in Britain. Adopted on a large scale from the end of the 18<sup>th</sup> century, they were arranged in groups along the various watercourses and drainage levels. Faden's map of 1797 shows six drainage mills on or close to the Fleet, and by 1884 there were eight mills on the Fleet, seven windmills and one steam pump. This series of drainage windmills moved water from their separate drainage levels into the Fleet which in turn drained into Breydon water via a sluice and from the 1930s, a diesel pump. The marshworker's houses were generally built close to the mills, so small groups of buildings can be seen on the river or drainage channel bank, often with an associated clump of trees and/or shrubs. The Fleet was also an area of settlement for a series of marsh farms, from which the mills were later run, established along it. This was the situation until the mid to late 1940s when the introduction of an electric pump and the reduction of the Fleet to a lesser drain, meant the windmills and marsh houses were gradually

abandoned. In the following years, derelict and demolished buildings became a feature of this area, as with much of Halvergate. The situation is now somewhat reversed with two of the four surviving marshworker's houses now permanently occupied, the fourth as a holiday home and the rubble heap of a fifth remains. Four of the Fleet mills survive, two are largely restored, one is protected and only one remains derelict.

Although all the mills are redundant from their original function, (since the installation of the electric drainage pump at Breydon) some brick towers still house diesel or electric pumps. The mills punctuate and add variation to the extensive flat grazing lands and are a reminder of human influence on the land through the draining of the land to improve the grazing.

Many drainage mills have escaped dereliction through the auspices of private owners, the Broads Authority, the Norfolk Windmills Trust, Norfolk County Council and the Pump Protection Scheme in the 1980s, although there are a large number still needing repair and conservation on the Broads Authority at Risk Register. Brief descriptions of the existing drainage mills are contained in Appendix 1.

### *Vegetation and wildlife*

The vegetation of the marshes is important both economically – for the survival of the grazing cattle and sheep – and also in terms of biodiversity, for both flora and fauna. The narrow bands of woodland and unimproved pasture on the poorly drained peaty margins give way to the expanse of better quality pasture on the better-drained main marsh. Variations in local topography and drainage within each level lead to considerable variation in the pasture species, which contributes to the variety within the marshes at closer inspection. Floristically the dykes act as a refuge for plants that may be in decline in the broads, for a variety of reasons, and also harbour rare invertebrates.

The marshes themselves provide important habitat for a wide range of birds, particularly on Berney Marshes. There is very little upstanding vegetation on the marshes, as the dykes act as fences and field boundaries. This contrasts strongly with the woodland along the upland margins. Such tree and shrub vegetation as there is can be divided into several types:

- clumps of trees and shrubs associated with marsh houses, often on slightly raised areas on river banks;
- carr woodland in damp peaty areas on the marsh fringes, notably on peat islands between Reedham and Wickhampton, consisting of sallow, willow, alder and some hawthorn (with a noticeable transition from wetland to drier species as one travels out from the marsh edge) (examples are Park Carr, Ashyard Carr, Decoy Carr and Drovers Carr, all pre 1797, with the northern woodland, such as Wiggs Carr and Engine House Carr dating from the early 19<sup>th</sup> century);
- strip woodland on the 'cliffs' (the former estuary edge) to the south and east; and vegetation along the tracks across the marsh – either self sown, extending out from the blocks of carr woodland or pollard willows. Carr woodland has also established on areas of former common land enclosed in 1802 – grazing prior to this would have prevented any woodland developing, so Hospital Plantation and Engine House Carr, both in Halvergate parish, are definitely 19<sup>th</sup> century in origin
- pollarded willows, especially along the A47 Acle straight and Branch Road, are distinctive but not of any great age, dating from after the construction of the toll road in 1835. While they filter the immensity of the wider landscape and provide a frame of reference from which to judge distances, from within the marshes they are often ineffective in screening traffic and offer a rhythmic silver-grey pattern that is at odds with the less ordered 'natural' landscape in the fore- and middle ground. The individual trees are planted on the verge immediately above the top of the ditch and are planted partly to consolidate the ditch/road interface.

Nesting birds are found on the sides of the dykes or in grassy tussocks on the marshes in summer: mute swan, shoveller, oyster catcher, lapwing, redshank and yellow wagtail; Most wildfowl graze the grass and roost on nearby broads, while waders feed on invertebrates in shallow flooded areas or on Breydon mudflats, then roost on the quieter marshes. The marshes are also a feeding and roosting bird habitat during winter, bean geese, Bewick and mute swans, widgeon, mallard, teal, golden plover, lapwing and snipe are common visitors. (see Appendix 1).

### *Views in and out*

Extensive views into the conservation area are obtained from most points on the periphery of the wider marshes, and from internal points such as the rivers (from boats or footpaths on floodwalls), drainage mills (where open to the public), the railway lines between Reedham and Yarmouth and Acle and Yarmouth and from the A47. The marshes are so extensive and undifferentiated within the wider landscape that the main points of reference are external – the vegetation on the floodplain margins and landmarks such as Caister water tower – rather than internal. Only the drainage mills provide internal reference points.

The effects of new development on the *skyline* of the landscape should not be underestimated. This is particularly relevant to the design and siting of any large scale development, such as renewable energy schemes, both within and outside the Broads executive boundary.

An intermittent boundary of carr woodland lining the edge of the floodplain on the western boundary, restricts much of the views out, although buildings sited on particularly high ground, such as at Hall Farm, Reedham, are visible outside the conservation area and outside the Broads Authority Executive area.

Visual impacts affecting Halvergate include the new Scroby Sands Wind farm to the east; the built development of Great Yarmouth and Caister - most visible of which is that of a large industrial nature. The pylons and industrial type settlement of St Olaves are also visible across the Haddiscoe Island. Despite these, the sheer scale of the marshes is such that the impacts from outside can be lessened, depending on the distance of the viewer. Within the area the main source of visual intrusion is traffic movement on the A47 and also lighting around Stracey Arms/Branch Road junction. The pollarded willows which could offer some screening of road movements have become discontinuous.

The scale of Halvergate Triangle is such that from within the marshes, views are available over long distances of up to 8km.

### *Halvergate landscape character analysis*

Halvergate is the epitome of extensive drained marshland/grazing marsh, criss-crossed by water-filled dykes, the rough and varied texture of the fen and grassland vegetation extending to the horizon under a vast sky, apparently without interruption. Short, steep generally vegetated slopes form its margins, a relic of the former estuary boundary and a clear delineation of its boundary with adjoining areas. This vegetation is either patchy carr woodland on the damp marsh fringes along the western and northern edge or woodland strips on the 'cliff' edges of the southeast.

It is a level landscape, but not a smooth one, consisting of land reclaimed from the former estuary and requiring constant drainage. The pattern of drainage dykes and river has little visual influence, except where individual trees or small groups of sallow provide vertical punctuation. Neither the river and dyke walls nor the line of the Norwich-Yarmouth railway detract from the overall horizontality of this landscape, although they occasionally provide a minor point of reference, a middle ground amid the vastness. The drainage mills provide the only significant vertical elements, but otherwise the landscape appears to be almost without human intervention, in contrast with the pattern of churches, cottages and farm buildings scattered along the edge of the adjoining landscape areas.

It has an apparently simple, unchanging, repetitive quality, with textural definition and much interest in the detail. It is actually a complex system of dykes and levels, the result of constant human intervention, although these interventions have not significantly changed its overall character since the 16<sup>th</sup> century. Where grazing marsh has been converted to arable, as in the north western corner around Halvergate/Damgate, or where alien elements have been introduced, such as along the Acle Straight, or impinge, as along the north eastern edge near Yarmouth, the unified character of this landscape is diluted and compromised, even the use of a metal rather than a timber farm gate has an impact in such a simple, elemental landscape.

### **Haddiscoe Island.**

The Haddiscoe Island part of the Halvergate Conservation Area lies within the valley floor of the confluence of the Rivers Yare and Waveney and comprises of the Langley, Chedgrave, Belton and

Fritton Marshes, including the eastern fringe of the River Yare. It is bounded by the New Cut to the west and the River Yare to the north, from the confluence of the Rivers Yare and Waveney at the southern end of Breydon Water in the north east, extending beyond the River Waveney to include the low-lying marshes up to the upland fringes of the settlements of Belton and Fritton and St Olaves.

As its name implies, the main part of this area is an island, created in the early 19<sup>th</sup> century by the construction of the New Cut, which linked the Yare at Reedham with the Waveney at St Olaves.

### *Early history*

Findings in the parish include some Neolithic and Bronze Age artefacts, and evidence of remnants of Bronze Age barrows and ring ditches and a group of wooden piles found in marshland to the north in 1958 could have been part of a Bronze Age brushwood causeway. Artefacts are also recorded from the Iron Age, Saxon and Roman periods indicating early occupation of this area.

In 1086, the Domesday Book recorded Haddiscoe as 'Hadescou', an Old Scandinavian name meaning 'Haddr's Wood'. At that time, King William I, Roger Bigot, Ralph Baynard and Robert, son of Corbucon held land in the parish, and freemen, villagers, smallholders, ploughs, pasture, meadow and sheep were recorded.

Outside the conservation area the churches at Thorpe and Haddiscoe date from the 11<sup>th</sup> and 12<sup>th</sup> centuries. Several post medieval houses survive in the parish, although few are within the conservation area, Raven's Hall is one example.

The land-use history of what is now drained marshland is little known, but is likely to be similar to that of Halvergate. Some of the marsh farms may have late Saxon or early medieval origins. At the time of Domesday, sheep probably grazed the saltmarsh that then covered the former estuary during the summer months, giving way over time to cattle.

### *Later history*

By the early 18<sup>th</sup> century the area was being managed in much the way it is today, and as flood defences and drainage regimes improved, more land became available for longer periods of each year. In the areas adjoining the conservation area, Hardley and Langley marshes were enclosed in the mid to late 17<sup>th</sup> century, and in 1814 a drainage commission was set up for Thurlton, Haddiscoe and Thorpe next Haddiscoe in as a consequence of Enclosure Awards, although all these are outside the conservation area. In 1869 a Drainage Authority was created specifically to look after Haddiscoe Island, which it continues to do. Prior to 1925 many of the marshes were subject to communal grazing rights for the local parishes such as Raveningham, Chedgrave and Stockton.

The New Cut was opened in 1830 linking the Rivers Yare and Waveney as part of a scheme to allow coastal vessels direct access from Norwich to the new harbour at Lowestoft, avoiding mudbanks in Breydon Water and costly tolls at Yarmouth. In practical terms it was later superseded by the construction of the railway along the same route, but it now provides a valuable route for pleasure craft.

Although predating the New Cut, Faden's map shows four extant drainage mills, the sites of which were established by the late 18<sup>th</sup> century, on the area that became the 'Island', and 2 other sites which no longer exist; two extant mills and two sites beside the River Waveney and one added subsequently. Although none of the 18<sup>th</sup> century mills survive in any recognisable form, the four later mills still standing on these sites are Red Mill or Langley Detached Mill, Six Mile or Chedgrave Detached Drainage Windmill, Pettingell's Mill, and Toft Monks (Detached) Drainage Mill.

Two sites on the Island along the River Yare have been identified as possible early marsh house sites - Six Mile House which burnt down in 1926 and Upper Seven Mile House demolished in the late 1970s. Faden's Map also indicates a mill existed near Upper Seven Mile House.

In 1944 the Langley, Chedgrave and Toft Monks Board built a new road and dwarf wall beside the New Cut, to improve access and alleviate the flooding problem caused by the inadequate height of

the Cut's southern embankment. Until 1948 the Island was drained by one steam engine and four drainage mills, now all privately owned.

#### *Transport pattern and accessibility:*

The two rivers (and later the New Cut) have always been the main transport routes through this area, and there is still no other public access to the western edge of the area, other than the railway station at Berney Arms and the footpath from Wickhampton and Halvergate villages, over the Halvergate Marshes. Although there are footpaths along both banks of the River Yare, the western bank of the Waveney, the northern bank of New Cut and part of its southern bank, the access points to these footpaths are poor.

The current operational railway line which loops south from Reedham then hugs the line of the New Cut across to St Olaves, was opened in 1847. The line through Halvergate, roughly parallel with the river Yare, is barely noticeable from this area except as a slightly more regular horizontal line, but trains on it are visible from Burgh Castle. There is a dismantled railway roughly parallel to the course of the Waveney, but inland, which impinges slightly on Belton Marshes.

There is a complete absence of roads within the area: vehicular access from the A143, between Haddiscoe Cut Bridge and the St Olaves Bridge, is limited to those working on the Island. The only formal public access is the 9 mile walk around the its perimeter and access tracks other than that beside the New Cut follow old creeks and watercourses or the bank of the Waveney.

#### *Buildings and settlements*

Although there are no settlements in this part of the conservation area, a few isolated scattered dwellings survive, but developments on the fringes have an influence on its character. Outside the conservation area, two buildings at Burgh Castle are local landmarks: the Gariannonum Roman fort is the most striking, set on the low cliff edge above the marshes towards the apex of Haddiscoe Island, where the Waveney curves in to the upland edge. It is surrounded by grassland, with a thick fringe of woodland along the cliff edge overlooking the marshes, its circular bastions and large sections of tall walls stand out as significant features visible for some distance. In turn, there are extensive views of the marshes from the monument, the former river estuary clearly discernible. The other landmark here is the round flint tower of the church at Burgh Castle on the eastern upland edge, partly screened by vegetation.

South of Burgh and set well back on the upland, the caravan parks and holiday villages of Belton extend to the boundary of the conservation area and are visible from within it, the suburban character in contrast to open nature of the marshes. Beyond this, woodland and a large expanse of coniferous plantation, Waveney Forest, terminate long views to the east providing a green fringe to the Island. A distinctive feature of this section of the river Waveney is the exceptional width of reed beds. These areas between the river and the river embankments provide an area of washland and were periodically grazed in the past. Today they provide an expanse of clean looking reedbed, part of which is cut commercially from a base near Pettingells Mill, one of two mills located along this side of the Waveney. The drainage mills are a feature on both the Waveney and Yare boundaries together with those visible across the rivers.

At the south eastern edge of the area, St Olaves is dominated by the road bridges over the Waveney and the New Cut, with a range of water and transport related development to the east of the river, backed by extensive woodland. Riverside chalets and boatyard buildings line the Waveney to the north of the A143 in a range of styles, not all of them sympathetic to the Broads landscape, especially in their external detailing, where materials more appropriate to an urban environment have been used. Beyond, to the west of the river, Priory Farm is next to the remains of a 13<sup>th</sup> century Augustinian priory.

The south western boundary of the Island is formed by the relentlessly straight New Cut waterway, contrasting strongly with the sinuous form of the two rivers. As a feature the Cut is not visually appealing but is a significant piece of engineering. The Cut appears noticeably higher than the surrounding land, presumably resulting from land shrinkage. A partially concrete road runs parallel with the cut on the island's interior and provides access to the two marshworker's dwellings on that side. The railway line, built later to the west of the Cut is not readily visible from the island. Vast



pylons cross the marshes where the Waveney and New Cut are closest near to the entrance of the Island. The combination of New Cut, access under the Haddiscoe flyover and the industrial nature of part of St Olaves creates a rather bleak functional feel to this part of the Island.

The side that borders the Yare is more open although views are somewhat restricted by the floodbanks both sides. At the northern tip of the island is Langley Detached Drainage Mill and Raven Hall, one of the few post medieval houses that survive, is a redbrick and thatched house dating from around 1700, but mostly of the 18<sup>th</sup> century. The collection of buildings around Berney Arms including the mill, public house and Ashtree Farmhouse are all clearly visible across the river, as are the group of house, mills and engine houses on the Reedham Marshes.

#### *Drainage mills on Haddiscoe Island*

Four drainage mills and one steam engine survive on the Island all of which were working into the 1940s. These are Toft Monks, Langley Detached, Pettingells and Six Mile House. The latter two are semi-derelict, the former two have been converted to holiday use. Near Toft Monks mill there is also the remains of a 'Humpback' vertical steam engine made by the firm of Smithdales which, although broken and incomplete is a rare survival. The land is now pumped by two electrically powered pumps. There are four other mills in this part of the conservation area, all to the east of River Waveney, Black Mill on Belton Marshes, and Caldecott Mill, Fritton Marsh Mill and St Olaves Mill on Fritton Marshes. Descriptions of these mills are included in Appendix 2.

Other sites of note include former ferry crossings from Fritton Staithe on Waveney and Seven Mile House Reedham Marshes, where it is likely that flat-bottomed boats could be used to transport cattle and Seven Mile House/ 'Pettingill's' with another old house and which is probably an older site.

#### *Vegetation and wildlife:*

Haddiscoe contains an important and extensive marsh dyke system. The vegetation of the ronds bordering the Island is saltwater, reflecting tidal influence, dominated by sea lavender and sea aster in the north east, grading to sea arrowgrass and sea rush towards the southwest and then to brackish reedbed further south; on the Waveney the gradation from saltwater to brackish vegetation occurs approximately opposite the northern edge of Waveney Forest, with a more varied mix of saltmarsh, brackish reedbed, managed reedbed and regenerating reedbed, all of which support a wide range of vegetation and wildlife. Recent flood defence works have moved the flood banks away from the river to allow the gradual development of 'soft defences' with saltmarsh and reedbed vegetation taking their place.

The dyke habitats are not botanically diverse, with relatively low numbers of aquatic plants compared with the freshwater systems elsewhere in the Broadland area. However, the marginal vegetation is of interest particularly where recent management has taken place, with hairy buttercup rapidly colonising bare ground. The dyke network provides an important refuge for the declining northern water vole.

The tussocky grassland of the marshes, as well as providing grazing for large numbers of cattle and some sheep, provides habitat for large numbers of breeding and over-wintering birds. The saltmarsh habitats of the Yare and Waveney are suitable for waders and are especially favoured by breeding redshank, while snipe have been frequently observed on the commercial reedbeds on the Waveney ronds. Small flocks of bearded tit use the wider reed ronds on the Waveney, which are up to 200 metres in width and relatively undisturbed. Marsh harriers have frequently been seen hunting over the ronds around Haddiscoe Island and peregrine falcons are commonly seen around the New Cut Bridge. Other commonly occurring bird species include oystercatcher and lapwing.

#### *Views in and out*

From the southern edge of this area the central grazing marshes are framed by the vegetation on the higher land marking the edge of the former estuary, at Reedham and Fritton. Views from roads on floodplain edges are generally filtered or obscured by tall roadside hedges. Conversely, landmarks such as churches are often the only built elements visible above the fringing vegetation. Where views are obtained, larger settlements on the opposite side of the river valley are also partly screened by vegetation, but make a strong contrast with the unsettled marshes. The A143 marks a transition from

the large scale very open marshes to the west to the more enclosed, more obviously managed hedged marshes more associated with settlement to the east.

It is generally a peaceful area, with little disturbance from road traffic or railway engines. Despite the lack of people this is a busy area, with mills, boats, buildings, timber posts in the river, seabirds and cattle, swans on ponds on the marshes – a very animated yet tranquil landscape. From Burgh Castle the view over Haddiscoe Island and Halvergate stretches to the horizon, bounded only by the treed skyline on the distant upland edge. The river and extensive reedbeds provide a foreground, the buildings around Berney Arms on the Yare a focus – otherwise the view is without landmarks and impressively extensive.

Views in are available from higher ground on eastern fringes, from rivers and from footpaths on floodwalls. Otherwise views are generally over this area, which is concealed by the height of the floodwalls. The strategic importance of the ancient military installations at Burgh Castle and Caister are evident from within the conservation area, in particular at Burgh, when looking up at the bulk of the imposing fortifications. Conversely, from the upper level, there are wide open and far reaching views over the marshland areas of the former estuary - on a clear day the true scale & drainage of the area can be appreciated.

The Island has a very enclosed, private atmosphere, perhaps unique in Broadland, with, for the most part, only distant views out towards the surrounding upland. The adjacent marsh blocks are largely invisible behind the river walls. Prominent features include the village of Reedham and Reedham Church, the latter situated on a promontory of land jutting out into the former estuary, and a recent development at Burgh Castle, including a marina complex. The Roman fortification at Burgh Castle is also visible from most points within the Island. Otherwise there is a strong feeling of isolation from human habitation. The conifer plantations of Waveney Forest are extremely conspicuous and, while forming a rather alien feature in a landscape otherwise surrounded by discontinuous woodland cover, also add to the feeling of distinctiveness.

Visually, although relatively low key, the low voltage electricity lines within the marshes provide a 20<sup>th</sup> century note that jars with the timelessness of the marshes themselves. The pylons that cross Thurlton Marshes between Thurlton and Fritton are larger in scale and much more intrusive. The road bridges over the New Cut and the Waveney at St Olaves, and the associated development, are also intrusive. The drainage mills are a significant feature in this landscape – not only those within it but also the ‘borrowed’ mills on Halvergate which are clearly visible over this level area.

One impression of this area is of the densely wooded eastern margin, contrasting with the more open western edge beyond Reedham.

In common with the Halvergate area, the effect of new development on the *skyline* of the landscape is an important factor in the preservation of the character of the area.

#### *Haddiscoe Island landscape character analysis*

Haddiscoe Island is an area of large scale open grazing pasture/drained marshland related to the upland edges to the south east and south. The surrounding river system forms a boundary between this area and the similar marshland of the Halvergate Triangle and Thurlton and Norton Marshes to the south west. The rivers are not major landscape features, but the associated flood walls form a prominent feature, restricting views to the surrounding marshland beyond the rivers and giving the Island an enclosed character on the large scale, although there is an awareness of both the surrounding floodplain marshland and of the River Waveney upland. Buildings and structures on the Yare around Berney Arms and the group of drainage mills on the Yare some 2.5 kilometres to the south west of Berney Arms, together with the series of drainage mills along the Waveney, mark the transition between blocks of grazing marsh, in the absence of other distinguishing features. The wider landscape is framed by the distinct raised edge of the former estuary, especially to the east and south. Haddiscoe Island occupies negative space – from the wider landscape the landform is concealed by the river walls, so that the eye travels over it to the furthest edges of the marsh. In places the regular ditch system offers gleaming slivers of water at right angles to the track, contrasting with the organic sinuosity of the natural watercourses of the area. There is a distinction between the ancient sinuous drainage pattern in the south west and a later rectilinear pattern to the north east. The transport infrastructure of the New Cut and the railway read only as a slightly higher and more

level horizontal line within the vastly greater horizontality of the wider landscape, while the massive structure of the New Cut Bridge is obscured from the main part of the Island by the River Waveney wall. The distinctiveness of the area is marred by a series of electricity pylons which cross the Island at its narrowest point and to a lesser extent by several small farmsteads with associated cypress hedging.

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## ***Issues, pressures, threats & opportunities for Halvergate Marshes Conservation Area***

### *Issues, pressures and threats:*

- Conversion of grazing land to arable or other land uses – loss of distinctiveness at local and regional level and loss of dyke vegetation. Contrast between apparently unmanaged marsh and the cultivated, man-managed arable fields, especially where combined with roads and traffic, as in the north western corner beyond Branch Road, from which there are views of marsh to the east and arable to the west.
- Agricultural buildings of inappropriate scale, design and materials within the marshland and on the upland edge, particularly where they are not screened by vegetation
- Pylons south east of Haddiscoe Island visible from many parts of the conservation area
- Telephone wires and low voltage power cables providing sagging horizontal lines in the air above the marshes
- Impacts of flood alleviation works
- The potential widening of the Acle Straight
- Continued development around Great Yarmouth and Breydon
- Likelihood of increased scrapes/surface water on marshes to suit particular bird life
- Potential impact of Bure Loop Proposals
- Deterioration/dereliction of structures within the conservation area, principally drainage mills, pumps and marsh houses
- Potential installation of modern water pumping facilities of inappropriate design and materials
- New development on the skyline
- Climate change effects
- Lack of management of pollarded trees along roadways

### *Opportunities for improvements:*

- Improving accessibility through providing more footpaths/cycleways
- Improve appreciation and understanding of the area through the provision of appropriate signage and interpretation
- Consider suitable alternative uses for redundant drainage mills where appropriate
- Ensure appropriate level of conservation of redundant drainage mills to maintain the structure, and safeguard their character
- Guidelines for development on the edges of the conservation area
- Consider presumption against major development where it would visually impact on the character of the conservation area
- Removal of overhead lines

## **Conclusions**

The Halvergate Marshes conservation area is one of the distinctive Broads landscape. The panoramic grazing marshes give a sense of openness and remoteness. Big skies, simple skylines, meandering rivers and important nature conservation interest all contribute to the special and unique character of the area. It is a working, rather than a leisure landscape. Although public access by land is limited, the rivers through opportunities for boating and sailing, allow a glimpse into this special landscape.

Halvergate is a powerful reminder of what much of the coastal fringe of the east coast must have been like before the widespread conversion to arable. The combination of marsh and sky continually reflects changes in weather patterns and the seasons, and whilst some may find its character bleak and unwelcoming, to others it epitomises East Anglia. It has a powerful sense of place and distinctiveness and is a true cultural landscape.

Visually Haddiscoe Island is very similar to the Halvergate Triangle, both comprising of extensive grazing marshes, but with its heavily embanked watery boundaries, restricted access and the New Cut, the Island has a distinct identity of its own. Both Halvergate and Haddiscoe are clearly distinguished from the adjoining Breydon Water, a wetland inter-tidal area, and the smaller scale Burgh Castle Marshes.

Despite the continued use and management of the marshes through many centuries, they have survived relatively unchanged. The unique qualities of the area have been recognised by several landscape designations, which are listed in Appendix 4. However, it is a fragile landscape; the characteristics that make it so special could easily be eroded. It is likely that the area will continue to evolve and adapt to existing and emerging pressures and threats, including climate change and a need for increased agricultural productivity. What is essential though, is that future adaptations continue to both maintain and add to the unique qualities of this special place and its relationship to surrounding areas.

### **The conservation area boundary**

The boundaries to the conservation area are as illustrated on the accompanying map and as described in the text. No changes are suggested to the existing boundaries.

### **Public consultation**

Consultation with interested parties and organisations will be carried out in accordance with the Broads Authority 'Statement of Community Involvement'.

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## Appendices

### Appendix 1

#### Landscape designations and biodiversity.

The biodiversity interest of the area, especially for wintering and breeding birds and plants and invertebrates in the marsh dykes is recognised through national designations.

Apart from the presence of three Sites of Special scientific Interest (SSSI's), the whole area lies within the Broads Authority Executive Area and the Broads Environmentally Sensitive Area, thus recognising its general environmental interest. Together, Decoy Carr, Damgate Marshes and Halvergate Marshes SSSIs extend to 1550ha or over one third of the catchment. A fourth SSSI, Breydon Water, adjoins the drainage district and Berney Marshes RSPB bird reserve, also falls within the catchment. Part of the area is also designated as a Special Protection Area (SPA), Ramsar site and Special Area of Conservation (SAC).

The management of the marshes, through the maintenance of their biodiversity, allows the support of rare species and wetland birds. It is internationally important for the numbers of wintering birds, with Berney Marshes and Breydon currently sitting in the top ten key sites in the UK in terms of absolute numbers with on average, over 100,000 birds using the site.

#### *Internationally important birds:*

- Pink Footed Goose: Peak number in Jan of 17,693 (5yr average), 10th in the UK (3500 international imp threshold)
- Widgeon: Peak in Jan of 21,532, 4th in the UK (15000 threshold)
- Shoveler: Peak Nov of 641, 4th in UK (400 threshold)
- Avocet: Peak Aug of 900, 5th in UK (730 threshold)
- Golden Plover: Peak Nov of 22,304, 3rd in UK (behind the Wash 40,000 and the Humber 29,000) (9300 threshold)
- Lapwing: Peak in Jan of 22,559, 3rd in UK (behind Somerset levels 41,000 and the wash 23,000) (20,000 threshold)
- Black Tailed Godwit: Peak of 1,991 in Nov, 9th in UK. (610 threshold)
- Common tern: Around 185 pairs breed on the tern rafts, but Breydon also sees some 5,650 using the site as a foraging area to feed up in preparation for their migration to West Africa.

#### *Invertebrates include:*

Rare: Norfolk Hawker dragonfly *Aeshna isosceles*, the great silver water-beetle *Hydrophilus piceus*, a large hoverfly *Lejops vittata*, small dotted footman *Pelosia obtusa obtusa*, dotted footman *Pelosia muscerda*, Fenn's wainscot *Photodes brevilinea*, the snail *Segmentina nitidia*.

Noteable: the weevil *Hydronomus alismatis*, *Coenagrion pulchellum*, *Brachytron pratense*, *Bembidion gilvipes*, *Bembidion clarki*, *Chlaenius nigricornis*, *Oodes helopioides*, *Noterus crassicornis*.

## Appendix 2

### Drainage Mills on Halvergate Marshes

#### *River Yare:*

- Berney Arms Mill/Berney Arms High Mill: tarred brick tower mill of seven storeys with 13 windows, 21 m high to top of cap, the tallest in Broadland; separate scoop wheel. Built c 1865, on site of earlier mills, used for grinding cement or to drive circular saws for the sawmill. Formerly part of cement works, but used solely for drainage from 1883. Function replaced by Breydon Pump in 1949. Now restored and owned by English Heritage.  
*Associated structures:* Berney Arms Inn at junction of Yare and Waveney, 18<sup>th</sup> century, with beer delivered by wherry. Only accessible by river or footpath. Berney Arms station: smallest station in Britain, with only one platform. Constructed 1843. Black barn to north east of station, now owned by RSPB. Small modern red brick pump house. Ashtree Farm – red brick, thatched roof (RSPB)
- Cadge's Mill/Batchie's Mill/Stimpson's Mill, Reedham Marshes: shown on Faden, but this building probably circa 1870/71. Tarred red brick tower mill, 11m high, the roof restored by the Norfolk Windmills Trust with a boat-shaped cap, internal scoop wheel removed. Mill has porthole flue holes and semi-circular windows above doors and contains the transformer; the switch gear for the modern electric pump is housed in a new green metal structure beside the mill.  
*Associated structures:* Part of a group of three mills – others are Polkey's Mill and North Mill.
- North Mill, Reedham Marshes/Reedham marshes North Mill: probably built circa 1825-40; derelict, red brick shell, no roof, formerly 3 storeys high, now circa 7m high.  
*Associated structures:* Cadges Mill and Polkey's Mill
- Polkey's Mill/Reedham Marshes South Mill, Reedham Marshes: tarred tower mill, 10m to top of brickwork. Shown on Faden; unknown date for extant building but known that major works undertaken in 1890s. Managed and restored by the Norfolk Windmills Trust.  
*Associated structures:* Part of a group with Cadges Mill and North Mill
- Seven Mile House (7 miles from Yarmouth along the river) is nearby marsh house. Brick with tile roof, a house on this site shown on Faden; derelict railway cottages nearby, built in 1844.
- Concrete road between Wickhampton and Seven Mile constructed in 1980s by the Drainage Board.]
- Seven Mile Steam Mill, Reedham Marshes: Adjacent to Polkey's Mill; built c. 1880. A brick built shed, corrugated roof and brick chimney. The only surviving steam drainage mill in this area. Repaired by the Norfolk Windmills Trust and houses an exhibition.
- Seven Mile Diesel Pump, Reedham Marshes: built 1941; last used in early 1980s, as superseded by electric pump and relocated as part of the recent flood alleviation works.

#### *Halvergate Fleet:*

- High's Mill, Halvergate (also known as Fred High's, Cotman's Mill, Lubbock's Mill, Gilbert's Mill, Harden's Mill and Carter's Mill): shown on Faden, therefore pre 1795. Present structure built/refitted 1890s, tarred red brick, 2 storey, only 7m high, with external scoop wheel, draining c 200 acres and containing rare 18<sup>th</sup> century machinery. Worked until 1940s. Adjoining marsh house early 1700s, brick and tile (Marsh Farm and Marsh Cottages) demolished.
- Howard's Mill/South Walsham Mill/ South Walsham detached, South Walsham Marshes: 1768-1795, mill shown on site on Faden; present structure's origins unknown, possibly c. 1840; tarred red brick tower, c.9.5m high, new cap and fantail, 3 storeys, with doors and windows on each upper level. Retains original ironwork and machinery. Restored 1978-95.  
*Associated structures:* Marsh Farm, also known as Howard's House or Hewitt's Farm, dates from 18<sup>th</sup>/19<sup>th</sup> century, but is referenced on map of 1768. Marsh Cottages nearby date from late 17<sup>th</sup> or early 18<sup>th</sup> century, on a medieval site, and were formerly known as Walpole's Farm; house of brick with a thatched roof, which stands on a low mound incorporated into the flood wall of Halvergate Creek. The site of Walpole's Mill is still apparent.

#### *Halvergate Marshes*

- Kerrison's Level/ Kerry's Mill, site 1795 – 1815, modernised in 19<sup>th</sup> century. Four storey tarred red brick tower mill with scoop wheel. Six metal bands: raised (batter changes to cylindrical

section close to top). Height circa 8m to top of brickwork. Restored white, boat shaped cap (Norfolk Windmills Trust) on re-used cap frame.

- Mutton's Mill/ Freddy Mutton's Mill/Manor House Mill, Halvergate (Frothelme's Level): present structure 1830s; 13m high, it is a tarred red brick, 13 m high in 4 storeys with internal scoop wheel, derelict by 1940s, now restored. Adjoining manor house which formerly housed two families, probably late Victorian rebuild of a pre 1826 structure,. Also known as Manor Farm and Fishley Manor Farm, on possibly medieval site.
- Stone's Drainage Mill or Kerry's Mill, Halvergate Fleet, Wickhampton marshes: pre 1795 site; present structure pinky-red brick, tarred; probably 1860s, derelict. Marshman's Cottage nearby but not adjacent, with the site of Carter's Mill in its grounds.

#### *Breydon Water*

- Lockgate Mill/Freethorpe Mill/Banham's Black Mill/Duffel's Mill/Breydon North Wall – Site 1759 – 1815, present structure around 1877, by Smithdales of Norwich. West bank of Breydon Water. Tarred red brick tower mill with remains of scoop wheel, all iron gearing, four storeys, circa 13.5m to top of cap. All internal machinery but much damaged by fire.

#### *Tunstall Dyke*

- Tunstall Smock Mill, Tunstall East Mill: site late 18<sup>th</sup> century, present structure circa 1900, octagonal weatherboard smock mill, re-boarded in 1990s, approx 4m high stump. Had internal turbine pump. Rubble remains of steam engine house adjacent.
- Tunstall Dyke Drainage Mill/ Tunstall West Mill: site 1795-1815; now an empty brick shell, but retaining its pitwheel/scoopwheel 6.5m high on north west side of Tunstall Dyke.

#### *River Bure*

- Ashtree Farm Drainage Mill – South bank. Rebuilt 1912 by Smithdales of Acle. Tarred red brick tower mill, 3 storeys, external 15ft scoop wheel. Contains cast iron machinery and re-used material from earlier cloth sailed mill. Lower gearing comes from St Margaret's Mill, Fleggburgh. Last of the Norfolk drainage mills in active use - until around 1953, but rendered inactive by a sudden change in wind direction – replaced by an electric pump in 1949. Restoration completed. *Associated structure:* Ashtree Farm.
- Mautby Marsh Drainage Mill – north bank. 18<sup>th</sup> century. Red brick tower, 3-4 storeys, raised (with batter changing to cylindrical section near top) in 19<sup>th</sup> century. 4 patent sails without shutters and white boat shaped cap with gallery, petticoat and fantail, all dating from conversion to house in early 1980s. Mill used to operate external scoop wheel, now missing. *Associated structures:* Adjoining 20<sup>th</sup> century cottage. Associated farmstead (Mill House Farm). Red brick former engine house. Modern electric pump of Archimedean screw type housed in red brick structure.
- Five Mile House Drainage Mill – south bank. Exterior date stone 1849. Medium sized tarred red brick tower, 4 storeys, roofed with temporary aluminium cap in 1988, remains of external scoop wheel and some internal machinery. *Associated structure:* Small modern brick electric pump house by river.
- Runham/Childs Drainage Mill – north bank at Runham Swim, built circa 1850s. Tarred squat red brick tower mill with internal scoop wheel (missing). 3 storeys, 2 doors and one window. White boat shaped cap with fan tail. Retains all iron upright shaft and wallower. Probably ceased working in 1937. Restoration started in 1983.
- Runham/Perry's Drainage Mill – south bank at Runham Swim, late 19<sup>th</sup> century. Turbine driven, tarred red brick tower mill. Internal machinery and external turbine pump in situ, new temporary aluminium cap by Norfolk Windmills Trust.
- Six Mile House/Parry's/Lake's Mill – south bank. Assumed built circa 1840 – 1880. Medium sized 4 storey tarred red brick tower mill, no cap, temporary ci shallow pitched roof. Some (dismantled) machinery internally. *Associated structures:* Cottage at Six Mile House Small modern pump house nearby
- Stracey Arms/Arnup's Mill – south bank and on A47. Built 1883, restored by Smithdales 1961 and by Norfolk Windmills Trust in subsequent years. Red brick tower mill, 4 storeys, 4 patent sails, white boarded boat shaped cap with gallery and fantail. All machinery inside to drive



external turbine which was replaced by electric pump in 1942. Important as represents final development of Broads drainage mills with extensive use of cast iron. *Associated structures:* Associated cottage (Mill House Farm), now shop,

- Old Hall/Dacks Drainage Mill, Stokesby – north bank. Probably erected circa 1795 - 1825 and was cloth sailed tail pole winded type with scoop wheel. Tarred red brick derelict tower mill shell. *Associated Structure:* Bure Cottage – derelict, formerly thatched Marshworker's cottage
- Herringby Hall Pump House - late 19<sup>th</sup> century steam engine house
- Commission Mill – early 19<sup>th</sup> century by William Rust. Tapering four storey brick tower with 20<sup>th</sup> century flat roof. *Associated structure:* Commission Mill Cottage – late 18<sup>th</sup> century, 1 storey and dormer attic, whitewashed brick and thatched roof.

## Appendix 3

### Drainage Mills on Haddiscoe Island

There are several drainage mills on the marshes in this area, all located around its edges adjacent to the two rivers (there are no mills along the New Cut):

River Yare:

- Langley Detached Drainage Mill, Langley marshes, east bank: probably c. 1840-80. Three-storey red brick tower mill, c. 9.5 m high. Raven Hill (q.v.) is nearby.
- Six Mile House Drainage Mill/ Chedgrave detached, Langley Marshes/Chedgrave Detached, probably 1840-1880, tarred red brick tower, c. 8m tall; no cap. Located between Rivers Yare and Waveney and now isolated in soke dyke following flood relief works.

River Waveney:

- Black Drainage Mill, Belton Marshes, east bank opposite Belton: c. 1830, 3 storeys, unusual curved shape, cap recently replaced no sails
- Caldecott Drainage Mill, Fritton Marshes, east bank between Waveney Forest and Belton. Tarred red brick 3 storey tower mill formerly with scoop wheel. No cap or sails. Temporary corrugated iron roof (Norfolk Windmills Trust)
- Pettingell's/ Pettingell's Toft Monks, Chedgrave Marshes, west bank towards northern end of Waveney Forest: probably erected around 1795 – 1825. Derelict small red brick tower, no cap, with adjoining engine shed. Seven Mile House is nearby but not adjacent
- Toft Monks Drainage Mill, Toft Monks Marshes, west bank: 19<sup>th</sup> C, 4 storey red brick tower converted to house replacement black rubber effect cap.
- Fritton Marsh Drainage Mill, Fritton Marsh, north bank: circa 1830, derelict tarred red brick 3 storey tower mill. No cap or sails. Low pitched corrugated roof. Upper gearing in situ, also pit wheel and crown. Latterly tractor driven.
- St Olaves Drainage Mill, north bank at St Olaves: – site circa 1820, existing mill circa 1810, replaced a smock mill. Black slender boarded square tower on brick and concrete base. Originally peg skeleton frame, later boarded. Cap and scoop wheel identical to Hobb's Mill, Horning.

Other mills located outside the sub-area but visible from Haddiscoe Island;

- 
- Berney Arms, west bank: c. 1865, the tallest and one of the largest mills in Broadland– see entry for Halvergate
- Polkeys, Cadges and North Mills – see entry for Halvergate.
- Norton Drainage Mill, S.W. of Reedham River Yare.

Other buildings:

- Seven Mile House, Stockton detached, may be partly early 18<sup>th</sup> century, occupying a medieval site as a demesne farm.
- Raven Hall – thatched post-medieval building, 17<sup>th</sup> C structure, probably occupying a medieval site. Near Langley Detached Mill.

- Haddiscoe Church is a local landmark on the southern upland edge. It is a fine round tower Saxon church, a sign of early prosperity in the Waveney valley. The Norman tower door shows continuity after the Norman conquest of 1066.
- Round tower church at Thorpe next Haddiscoe, again a landmark on the upland edge, with a flint tower, thatched roof and a redbrick chancel.
- Thorpe Hall is a rendered 15<sup>th</sup> century house with a red tile roof associated farm buildings and old redbrick garden walls, set also on the very undulating estuary edge.
- Isolated farmsteads along the New Cut of recent construction and surrounded by cypress hedges.

#### **Appendix 4**

#### **Listed structures and scheduled ancient monuments in the Halvergate Marshes conservation area.**

##### *River Yare*

- Berney Arms Mill – scheduled ancient monument
- Cadges Mill – grade II
- Langley Detached – Grade II
- Polkey's Drainage Mill – grade II\*
- Six Mile House Drainage Mill - grade II

##### *River Bure*

- Ashtree Farm Drainage Mill – grade II
- Runham Swim Mill – grade II
- Runham Drainage Mill (north) – grade II
- Commission Drainage Mill – grade II
- Five Mile House Drainage Mill – grade II
- Mautby Marsh Drainage Mill grade II
- Six Mile House (Perry's) – grade II
- Stracey Arms Drainage Mill – grade II\*

##### *Wickhampton/Halvergate/South Walsham Marshes and Halvergate Fleet;*

- High's Mill – grade II
- Howard's (South Walsham) Mill – grade II
- Kerrison's Level Drainage Mill – grade II
- Mutton's Mill – grade II\*
- Stone's Mill – grade II
- Lockgate Mill – grade II

##### *Tunstall Dyke*

- Tunstall Dyke Drainage Mill – grade II
- Tunstall Dyke Smock Mill – grade II

##### *River Waveney*

- Belton Black Drainage Mill – grade II
- Caldecott Drainage Mill – grade II
- Fritton Marsh Drainage Mill – grade II
- Pettingell's Drainage Mill – grade II
- St Olave's Drainage Mill – grade II\*
- Toft Monks Drainage Mill – grade II

##### *Others;*

Raven Hall – grade II

## **Appendix 5**

### **Landscape and ecological designations**

The landscape is protected by:

- Broads National Park designation
- Broadland Ramsar
- Breydon Water Ramsar (includes part of south of Halvergate)
- Breydon Water SPA (includes part of south of Halvergate)
- Breydon Water SSSI (adjacent to area)
- Broadland SPA
- The Broads SAC
- Broads ESA
- Breydon Water LNR (adjacent to area)
- Halvergate Marshes SSSI
- Damgate Marshes, Acle SSSI
- Acle Lands Trust (Nature Reserve)

## **Appendix 6**

### **Sources and references**

- The Norfolk Broads, A landscape history, Tom Williamson, Manchester University Press 1997
- Landscape Character Assessment, Broads Authority, 2006
- Landscape Sensitivity Study for Renewables & Infrastructure 2012
- The Land Use, Ecology and Conservation of Broadland, Martin George
- National Planning Policy Framework, 2012, DCLG
- Planning Practice Guidance for NPPF, 2014, DCLG
- Understanding Place, Conservation Area Designation, Appraisal and Management, English Heritage 2010
- National Heritage List for England
- Norfolk Heritage Explorer
- The Buildings of England, Norfolk: Norwich and North-East, Nicholas Pevsner and Bill Wilson

## **Appendix 7**

### *Broads Authority Guidance leaflets*

- Keeping the Broads Special
- Do I need Planning Permission?
- How do I apply for Planning Permission?
- Building at the Waterside – A guide to design of waterside buildings in the Broads Authority area
- Environment and Landscape – How do I plan and manage trees and scrub alongside rivers?
- Development and Flood Risk in the Broads
- Riverbank Protection Works – A guide for riparian landowners
- Sustainability Guide – Sustainable development in the Broads

## **Appendix 8**

### **Contact details and further information.**

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