Ouse Washes

The Heart of the Fens

SECTION 1

UNDERSTANDING THE LANDSCAPE PARTNERSHIP SCHEME AREA

1.1 The Landscape Character of the OWLP area

The OWLP scheme sits largely within The Fens National Character Area (NC46). Additional work undertaken as part of the commissioned Landscape Character Assessment has identified there are seven different Landscape Character Types (LCTs), general categories of landscape type recognised on a national scale. The LCTs for this part of the Fens are shown on the below map.

The higher land, which defines the margins of the Fen Basin, is characterised by heavy clay soils to the south (**Clayland Fen Margins**) and sandstones to the north east, near Downham Market (**Sandstone Fen Margins**). The broad valley of the **River Ouse** is defined as a separate landscape character type as it enters the Fen Basin just south of St Ives. The majority of the Fen Basin is **Peat Fen**, but the distinctive alignment of the historic Old Croft River between Littleport and The Wash can still be traced in the landscape as a result of contrasting silt-based soils and field/settlement patterns. This **Silt Fen** becomes the dominant landscape type in the northern part of the Fen Basin.

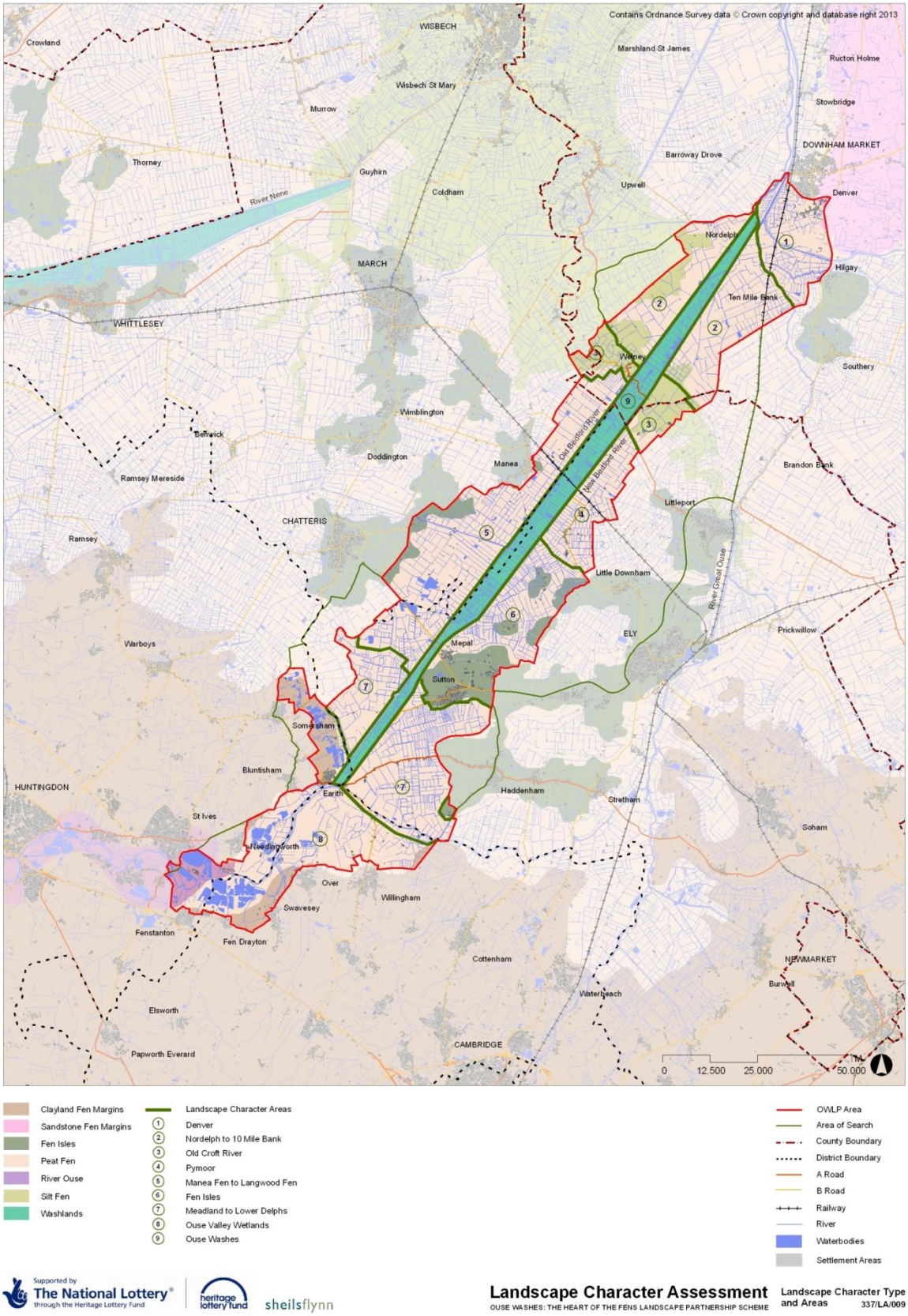
The **Fen Isles** landscape character type defines isolated areas of higher land within the peat fen which have long been a preferred site for settlement. The **Washlands** landscape character type defines the 17th century floodwater storage areas of the Ouse Washes (and the Nene), which form striking embanked 'cuts' across the grain of the surrounding low lying fen landscapes.

Landscape Character Areas

The Landscape Character Assessment identified nine discrete Landscape Character Areas (LCAs) as shown on the map below. Below follows an integrated description of each LCA, covering relevant aspects of their physical, historic, land use, biodiversity, settlement and aesthetic character.

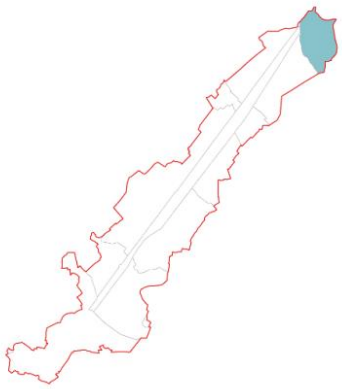
The nine Landscape Character Areas describe the way the landscape is experienced 'on the ground'; each has its own particular identity and sense of territory which is often associated with the hinterland of a town or group of villages. Differences between neighbouring character areas are in most cases relatively subtle, although when one travels from one end of the OWLP landscape to the other the differences highlighted in the character area descriptions become more apparent.

The Landscape Character Assessment (LCA) builds on the existing landscape typologies mapped and described within the landscape character assessments for Kings Lynn & West Norfolk Borough (2007), Huntingdonshire District (2007) and the larger scale assessment for Cambridgeshire (1991). However, it provides a more detailed analysis, including narrative, photographs and drawings to describe the intrinsic qualities of the local landscape character areas within the Ouse Washes area, and also makes recommendations about how to manage the changes that affect the LCAs; further details can be found in Sheils Flynn's separately produced report for the OWLP scheme.



Landscape Character Types (colours in background) and Landscape Character Areas (numbers) identified within the OWLP area. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

1.1.1 Denver LCA: Landscape development & character



Small fields, hedgerows and trees on the fringes of Denver. Images by Sheils Flynn for OWLP.

The Denver LCA encompasses the *hinterland* of the villages of Denver and the hamlet of Fordham, which are sited on gently rising land on the north-west rim of the Fen Basin and the flat low-lying arable fen between the fen-edge villages and the River Great Ouse. This part of the fen margin is underlain by sandstone and many of the traditional village buildings are constructed from carrstone, gingery coloured local sandstone. In places the sandstone is covered with a layer of Boulder Clay.

The margin of the fen-edge higher land is defined by the railway line and the Cut-off Channel, both large scale infrastructure corridors which slice across the landscape, enclosed by steep embankments. The meandering form of the Rivers Wissey and Great Ouse contrasts with the geometry of the surrounding fenland fields and drainage dykes. The rivers, their embankments and the blocks of woodland that are interspersed with the arable fields, all contribute to a relatively enclosed fenland character. The sense of enclosure increases towards the margins of the villages, where groups of hedgerow trees and village buildings form the horizon in local views.

The sandstone fen margins near Denver have a long continuity of settlement. Excavations have revealed evidence of Iron Age, Roman and Middle Saxon settlement near Crow Hall and the area was traversed by the Fen Causeway, a Roman road across the fens. The Fen Causeway would have been a focus for Roman activity and there are known to be two Roman salt working sites, as well as a network of buildings, peat turbaries and field systems.

The medieval village of Denver was surrounded by open fields and some areas of ridge and furrow survive today. Two areas of common land, Whin Common and Sluice Common, are remnant areas of common land that date from the medieval period. Stock was driven to the rich summer fen pastures along drove roads such as Cow Lane and Hogspond Lane. There was a smaller medieval settlement at Fordham and a silt ridge between Fordham and the River Wissey may have been an infilled medieval canal.

There was piecemeal fen drainage in medieval times, but more strategic schemes for the drainage and reclamation of the fens were underway by the 17th century, including the construction of Downham (or St John's) Eau. The fens were drained by wind pumps throughout the 17th and 18th centuries. Vermuyden built Denver Sluice in the 1650s, but this critically important part of the network of Fen flood defences was rebuilt in 1834 and enlarged in the 1920s. The Cut-off Channel, constructed in the 1950s, destroyed the former course of St John's Eau.

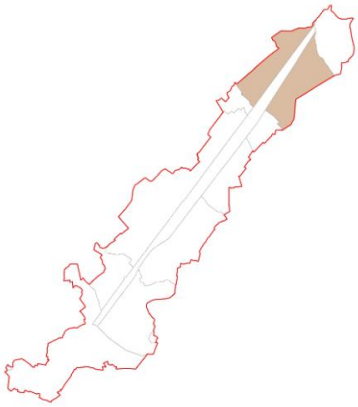
Many buildings in Denver are built from the local carrstone. Image by Sheils Flynn for OWLP.

There is a strong relationship between the villages of Denver and Fordham and their surrounding field systems. The relatively compact form of the villages, the network of tracks leading from village to fields, the small areas of common land and greens and the hierarchy of field sizes, with smaller orchards and paddocks close to the village all contribute to a diverse, lively landscape character. The local carrstone is distinctive and the local landmarks of Denver Sluice and Denver Mill are well known destinations. The farmed *hinterland* of the villages is noticeably more enclosed than in other parts of the Ouse Washes LP area, with blocks of woodland (such as Oval Plantation, Twelve Acre Covert and Harold Covert) interspersed with the flat arable fields. The flat arable fields of the fen seem more distant in this LCA than the others within the Ouse Washes LP area.

Denver LCA: Distinctive landscape characteristics

- Gently rolling farmland with villages on the edge of the Fen Basin
- Gingery carrstone as building stone reflects underlying sandstone
- Relatively small fields, paddocks, small commons and orchards in hinterland to villages
- Adjacent fen crossed by major waterways with confluence at Denver Sluice
- Fen-edge fields often enclosed by hedgerows; arable fields on fen have open boundaries but are interspersed with some blocks of woodland
- Network of tracks and droveways

1.1.2 Nordelph to Ten Mile Bank LCA: Landscape development & character



Clumps of trees surround isolated farmsteads. Images by Sheils Flynn for OWLP.

This is an absolutely flat, low-lying landscape that is almost completely devoted to arable farming stretching from the hamlet of Lot's End and the village of Nordelph in the west to Ten Mile Bank in the east and split down the centre by the Ouse Washes. Peat soils have generally been eroded and the land is underlain by seasonally wet deep clay, with pockets of loam. The winding roddons of extinct watercourses form slight ridges that are barely perceptible in local views (except after ploughing and tilling), but which can sometimes be felt as broad bumps when driving along the roads.

While earlier occupation evidence became buried beneath the fen deposits across this landscape, the Romans built the Fen Causeway, a gravelled road which traversed the fens between Peterborough and Denver. Archaeological evidence suggests that the Fen Causeway began as a canal for carrying goods across the fen; eventually the silt-filled canal formed a relatively straight roddon and the Romans subsequently made use of this relatively stable and straight ridge to construct a road that cut across the surrounding peaty marsh. The present day 'Silt Road' follows part of the roddon used by the Fen Causeway. The alignment of the Fen Causeway can be seen on aerial photographs to the south of Nordelph. Intensive archaeological excavation and research has revealed a series of Roman settlements, field systems, saltworks and turbaries (linear peat cuttings) on either side of the route.

Following the Roman period, this LCA was unpopulated, unfarmed marshland until the early 17th century, when schemes for draining and managing the waters of this part of the fen were initiated. In 1605 London Lode was constructed by London merchants reclaiming 3,000 acres of land which was known as Londoner's Fen. Soon thereafter Popham's Eau was cut from the Old River Nene to the Well Creek. The area was then part of the area drained as a result of Vermuyden's large scale drainage schemes; parts of the land were subdivided into farm units, with the larger scale parcels of farmland owned by the Adventurers who had a financial stake in the scheme. Drainage of the Fens caused the peat to dry out and land levels to fall. Windmills were constructed to pump water from the field dykes into the main drains. One still remains in Nordelph (Smock Mill) and the Historic Environment Record marks the sites of another 12 post medieval wind pumps.

Today the land is intensively used for arable farming or for functions supporting agriculture, such as drainage ditches, tracks and large farm buildings. The agricultural land is valuable and none of it is wasted - there are no hedgerows, woodlands or areas of unfarmed land. The straight drainage ditches that border the field units are large scale, deep dykes. Many are intensively managed, with minimal riparian vegetation, but in some the water channel is bordered by reeds.

The principal settlements are Nordelph, on the banks of Popham's Eau at the northern margins of the OWLP area, and Ten Mile Bank, on the River Great Ouse. Both are linear settlements which are strung out along local roads. Waterfront areas have a peaceful riverside character and residential areas away from the river frontage have a strongly agricultural character, with an abrupt transition to large scale arable farmland from the rear of their properties.

Away from these principal settlements, this vast open arable landscape seems empty and peaceful. The wide open skies are part of the landscape experience. Isolated farmsteads are typically surrounded by a cluster of mature trees and are the focal points in local views. Lines of pylons are also often prominent features that appear to 'march' across the open fields, interrupting the horizontal skyline. The few roads and farm access tracks are straight and emphasise the geometric pattern of the arable farm units and drainage ditches.

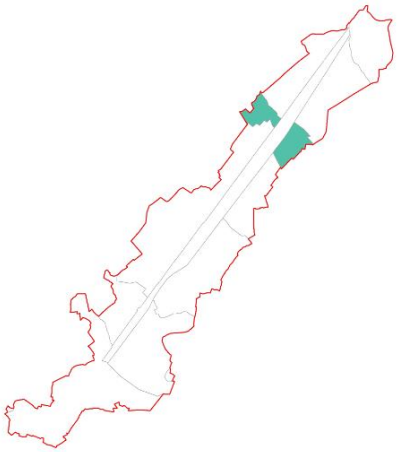
Lines of pylons are prominent features in the landscape. Image by Sheils Flynn for OWLP.

This is a vast, open landscape with an exceptionally expansive scale. It has a simple, yet dramatic character. Seasonal changes in crops mean that the strong geometric arable field patterns are in a constant state of flux, with changing colours and textures throughout the year. The weather is also a protagonist, contributing to the changing nuances of light and mood.

Nordelph to Ten Mile Bank LCA: Distinctive landscape characteristics

- Flat, low-lying arable farmland with panoramic vistas and wide open skies
- Expansive open landscape, with a vast scale
- Intensive arable farming; vast field units subdivided by a regular network of large, straight ditches, often edged by reeds
- Strong geometric and linear landscape pattern which changes with seasonal cropping
- Largely unsettled landscape: a few linear villages alongside watercourses and roads, but otherwise settlement is confined to large farmsteads, surrounded by trees, which often appear as isolated 'islands' of trees and buildings within the open farmland
- Straight roads, which are often slightly embanked above the level of the surrounding land
- Simple, but strong skyline – farmsteads, occasional large farm buildings and lines of pylons are focal points

1.1.3 Old Croft River LCA: Landscape development & character



Arable fields and settlement on the Old Croft River siltlands at Tipps End. Images by Sheils Flynn for OWLP.

The Old Croft River LCA covers the broad floodplain of the former River Ouse, which once flowed north from Littleport to the Wash. Known locally as the 'Old Croft River,' the alignment of its broad, meandering water course can be traced by the deposits of marine silts and by the sinuous pattern of fields and dykes alongside. The silt of the Old Croft River roddon has provided a firm foundation for settlement: the villages of Tipps End and Welney are to the west of the Ouse Washes and there are groups of farmsteads and cottages along the path of the extinct watercourse to the east.

In the late Neolithic period, the area consisted of predominantly intertidal mudflats and marsh drained by a dendritic pattern of creeks. Peat then encroached, but a later period of marine flooding deposited coarse silts along the Old Croft River. By the Roman period these 'roddonised' silts were sufficiently dry to enable task sites and occupation along it and by this time the landscape would have been dominated by peat, but with actively flowing brackish watercourses. There was a Roman settlement at Welney and local landscape resources – brackish water in the Old Croft River and peat for fuel – were used to support an extensive salt making industry. Excavations have shown that there were saltern sites at regular intervals alongside the course of the river.

The area was also the centre for some of the early fen reclamation schemes. There is a reference in 1277 in the Littleport Rolls to the 'newly enfeoffed' at Littleport and after the description of some few small tenements held at money rents, comes another heading, 'Of the newly enfeoffed in Apesholt and elsewhere in the Marsh'. This section describes numerous tenements of three, six, twelve, twenty and a hundred acres held at money rents of a penny an acre or thereabouts. It seems that a good deal of land had lately been reclaimed from the fen.

The 1604 Hayward map shows the course of the 'Welnye River', meandering between Littleport to Welney and westwards to Upwell. There is a system of fields along the river and an indication of settlement at Welney and a hamlet at Ape's Hall. What stands out is that the Old Croft River is a focus for settlement and activity in an otherwise unsettled expanse of 'West Moare,' the extensive area of fen that occupied the low-lying land between the fen islands. The name 'Old Croft River' probably refers to this concentration of enclosure and settlement. The Jonas Moore map of c1658 shows a strip field pattern following the meandering course of the river, which was distinctive in comparison to the blocky geometry of the large plots laid out by the Adventurers for reclamation projects. This meandering pattern is still evident in the alignment of field boundaries and dykes today.

To the west of the Ouse Washes, the landscape around the villages of Welney and Tipps End has a diverse, irregular pattern, with fields, paddocks and copses intermingled with linear built development. The A1101 through the centre of Welney broadly follows the course of the Old Croft River roddon and the villages here are on or close to the sites of Roman and Bronze Age settlements, all taking advantage of proximity to the historic river and the contrasting soil types alongside. Today most fields near the villages are enclosed by belts of trees and this part of the Old Croft River LCA has a relatively enclosed character.

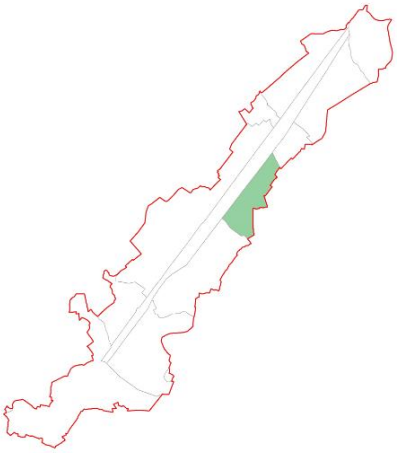
Left: Old Croft River at Dairy Houses Farm. Right: views of the more open arable farmland to the east of the Ouse Washes. Images by Sheils Flynn for OWLP.

To the east of the Ouse Washes, the landscape is open arable land, with clusters of trees surrounding isolated farmsteads and belts of trees alongside some roads and dykes. There are small groups of houses along local roads and droveways, but the landscape is relatively open and the course of the Old Croft River is no longer apparent in the wider landscape. It is only in aerial or plan view that the original meandering alignment of the river and the crofts alongside can still be traced.
Compared to the vast, open arable landscapes of the Nordelph to 10 Mile Bank LCA to the north, the farmland and village landscape of the Old Croft River LCA has an enclosed character, with a strong sense of community.

Old Croft River LCA: Distinctive landscape characteristics

- Arable farmland on the flat marine silt deposits that mark the former course of the Great Ouse (known locally as the Old Croft River)
- Linear villages of Welney and Tipps End sited along the winding A1101, part of which is aligned along the roddon of the Old Croft River
- Winding pattern of medium-sized fields follows alignment of the Old Croft River roddon
- Belts of trees and partial hedgerows enclose fields within the villages of Welney and Tipps End; more open large scale arable landscape between Welney and Littleport
- Concentration of archaeological sites, including several Roman saltworks

1.1.4 Pymoor LCA: Landscape development & character



Adventurer's Drove, with scattered tree belts. Images by Sheils Flynn for OWLP.

The Pymoor LCA is an area of flat peat fen to the north of the Fen Isles, between Downham Hythe and the A1101. The principal settlement is the village of Pymoor and the area has a distinctive 'herringbone' pattern of straight roads and droveways, which subdivide the farmland.

Scatters of Mesolithic and Neolithic worked flints suggest that the area was settled in prehistoric times and there is evidence of Bronze Age and Roman settlement near Pymoor. The peat fen is known to have become progressively more waterlogged during the Saxon and medieval periods, so it is possible that the marsh and wet grasslands were used as common fen and as temporary summer grazing accessed by droveways from the Fen Isle villages of Little Downham and Downham Hythe to the south and east.

The process of draining the marshy, low-lying fen began in the 17th century. The historic sites of three drainage windmills near Pymoor are evidence of this period, when the network of dykes would have been cut to drain the farmland. In later years one windmill ground corn and was also the village bakery. When the Hundred Foot Pumping Station was built in 1830, it replaced a drainage windmill, one of 75 in the area.

The linear village of Pymoor is the core settlement, but there are groups of farms and cottages along most of the roads and droveways and the area has a well settled, more domestic character than other parts of the study area. Tree and poplar belts along the droveways and clusters of trees around many of the farms give a 'layered' sense of enclosure in the wide open views across the flat farmland.

The railway cuts across the farmland on a slight embankment from Manea to the west to Littleport. The rough grass slope of the low railway embankment contrasts with the surrounding geometry of the arable fields and is a subtle feature of the landscape.

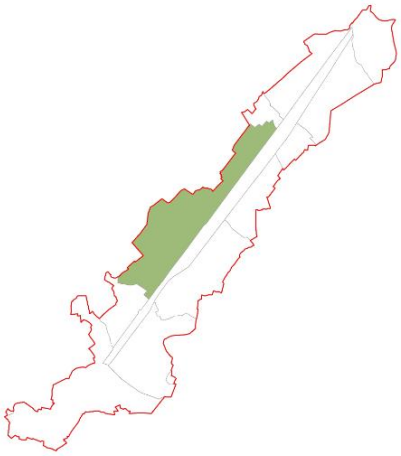
Left: Furlong Drove. Right: Fourth Drove, Pymoor. Images by Sheils Flynn for OWLP.

The Pymoor LCA has a distinctive homely quality. The relatively small scale pattern of landownership and extensive network of roads and droves, together with the large number of smallholdings ensure that the open farmland around Pymoor seems more accessible and inhabited than the vast open arable lands to the north (west of the Ten Mile Bank). The area also has a distinctive mix of commercial and residential development strung out along the roads so there is a constant buzz of activity. The Pymoor landscape has a rather untidy, random character, with scattered patches of scrub and odd groups and belts of trees around buildings and along verges, dykes and embankments. Seen in longer views across the farmland, these rather random collections of vegetation give a layered sense of enclosure.

Pymoor LCA: Distinctive landscape characteristics

- Flat arable fields on extensive peat fen, subdivided by a 'herringbone' pattern of straight roads and droveways, all with wide verges
- Linear settlement of Pymoor, but many additional groups of farms, commercial buildings and cottages strung out along the roads
- Relatively small scale landownership pattern, with smallholdings as well as larger farms
- Scattered tree belts and groups of trees around farms and along droves provide a subtle 'layered' sense of enclosure in the wide open views

1.1.5 Manea to Langwood Fen LCA: Landscape development & character



Hedgerows and belts of trees form a backdrop to some views on Langwood Fen. Images by Sheils Flynn for OWLP.

The Manea to Langwood Fen LCA includes the eastern fringes of the village of Manea and the hamlets of Purls Bridge and Welches Dam, as well as outlying farmsteads. The area is underlain by a mix of deep clays and seasonally wet peaty loam soils, with small areas of calcareous soil that is derived from river terrace drift. The landscape today is one of extensive, flat, arable farmland, but in prehistoric times, it would have been a diverse mosaic of marsh, meadow and woodland between the drylands of the Chatteris - Manea fen 'island' to the west and the braided river channel of the Ouse River to the east.

There are scattered finds from the Neolithic period throughout the LCA, with concentrations of sites and finds on North Fen and Block Fen. Further evidence from this period is provided by a significant group of three Neolithic enclosures at Horsely Fen, just to the west of the OWLP boundary. Evidence for Bronze Age settlement is equally prolific, with many barrow sites and finds of Bronze Age weapons (an axe and a spear). An extensive Bronze Age barrow cemetery at Block Fen is (in part) a Scheduled Monument, with evidence of eight barrows and possibly four ring ditches. The important Roman settlement site at Stonea and evidence of a Roman settlement and field system near Honey Hill are both to the west of the study area, but there are Roman finds on the fringes of Langwood Fen and Block Fen and a possible Roman settlement near Langwood Hill Drove; there is also evidence of a possible Iron Age settlement site nearby.

By the Mid Saxon period, the Fen Basin had become significantly wetter and settlement retreated to higher land. By medieval times, settlement was concentrated outside the study area at Chatteris and Manea. Droveways would have led from these settlements to the summer pastures on the common fen. The 1604 Hayward Map shows no evidence of settlement within the Manea to Langwood Fen LCA, although 'Manye' is shown as a dotted area at the junction of lodes leading to Downham Hythe to the east and Doddington to the west.

The small settlement of Manea was in the parish of Coveney, but this landscape unit was severed by the Ouse Washes in the 1650s. Purl's Bridge Drove would have connected with Adventurer's Drove on the east side of the Washes, connecting Manea with Little Downham. The Moore Map of c1658 shows that an area of small crofts along the meandering course of a minor river to the north west of Mepal was retained amidst the extensive large scale pattern of land units established by the Adventurer's investment. This watercourse is now reduced to a series of dykes across an area known as Witcham Meadlands.

Vermuyden's Forty Foot Drain and droveway cut right across the LCA and joined the Old Bedford River at Welches Dam. The hamlets and inns that developed at Welches Dam and Purls Bridge served the barge workers and those working on these major infrastructure projects. Welches Dam was unfortunately well known in 1849 because there were 11 fatal cases of cholera in a parish that had only 187 inhabitants; most of the fatalities were amongst the 81 occupiers of a group of 16 cottages huddled against the Old Bedford River bank and hence very damp.

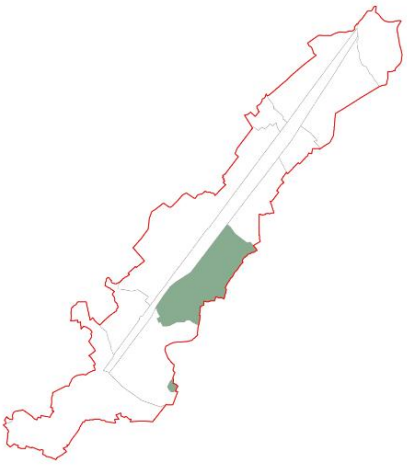
Left: Drove by Langwood Fen. Right: Cottages at Welches Dam. Images by Sheils Flynn for OWLP.

The flat arable landscape today has an expansive scale and a tranquil, remote character. To the north of Manea, the fields are exceptionally open, but there is more enclosure to the south and, on Langwood Fen, some fields and droveways are enclosed by hedgerows. Belts of trees along the Forty Foot Drain and the dyke to the north provide a strong backdrop to local views.
The RSPB Reserve at Welches Dam and the Mepal Outdoor Centre are a focus for visitors. Sand and gravel extraction at Block Fen is likely to continue on a large scale, with the plans for land restoration following quarrying to include a mix of open water and wet grassland which will provide replacement habitat for ground nesting birds affected by unseasonal and prolonged flooding on the adjacent Ouse Washes.

Manea to Langwood Fen LCA: Distinctive landscape characteristics

- Expansive and extensive flat arable farmland
- Tranquil, remote character with few settlements
- Open arable fields to north of Manea, but hedgerows and belts of trees on Langwood Fen provide some enclosure and a backdrop to views
- Forty Foot Drain is a significant landscape feature, slicing across the fen
- Large scale sand and gravel extraction at Block Fen

1.1.6 Fen Isles LCA: Landscape development & character



The village of Coveney is sited on the summit of one of the larger, steeper Fen Isles. The houses, farms, paddocks, orchards and arable fields on the hill slopes create a diverse landscape pattern. Images by Sheils Flynn for OWLP.

The Fen Isles are remnant hills, which have remained free of peat and silt throughout the centuries of deposition that followed the Ice Age. The hills are capped with Boulder Clay and have heavier soils than the surrounding peat fen. The Fen Isles LCA includes the villages of Mepal, Sutton, Witcham, Wardy Hill, Coveney and Downham Hythe. It encompasses the island hills and their fen hinterland, acknowledging the inter-dependencies in the ways that communities have exploited these two contrasting landscape types: the drier clay soils were used for cultivation and permanent pasture and the marsh for fuel, building materials, wildfowl and fish.

The higher Fen Isles have been the preferred sites for settlement since the Mesolithic period – when this was part of a dry landscape. The heavy clay soils on the island crests were difficult for early Neolithic and Bronze Age communities to farm and their settlements were located on the lower ground close to rivers and meres, but by the Iron Age stronger ploughs enabled cultivation of the islands, which was necessitated by the infilling of the Fen Basin and the development of extensive marshes. The hill-top Iron Age forts would have had superb defensive sites with views across the fen; excavation of the small defended ringwork at Wardy Hill has revealed high ramparts surrounding at least four circular huts. There is evidence of Roman settlement at Witcham and near Wentworth.

The relationship between the Fen Isles and their fen hinterland shifted as the Fen Basin became increasingly waterlogged and clogged by silt and peat. By Saxon and medieval times, the Fen Isles would have been literally islands in the marsh, linked by timber or embanked causeways. The straight roads that connect the island of Coveney to the adjacent islands are still called ‘Long Causeway’ to the south and ‘Short Causeway’ to the west.

The pattern of settlement, roads, tracks and fields that we see today was established in medieval times. Villages and farmsteads were sited on the higher fen islands, connected by roads that followed the higher land (sometimes roddons) and kept the length of the crossings over the fen to a minimum. Curving dykes and tracks often define the break of slope along the lower edge of the fen islands, with straight droves leading directly onto the fen. The drove roads accessed the lush summer pastures of the common fen which provided high quality grazing, enriched by winter flooding.

Historic droves: the Rushway. Image by Sheils Flynn for OWLP.

Parts of the medieval fen were drained by a network of ditches and dykes; canals cut between the rivers and larger dykes created navigable channels or 'lodes', such as the Oxenlode, which were used to transport goods across the fen, connecting the hithes (ports) of the Fen Isle villages with larger towns and the ports of Wisbech and King's Lynn. The upkeep of the principal causeways and lodes was a communal effort, under the instruction of the manorial lords - very often the fenland abbeys. Archaeological evidence suggests that some of the present day Fen Isle villages were larger, or perhaps more dispersed – some may have shrunk in size or even been deserted in years of economic and population decline. There are examples of shrunken medieval villages at Witcham and Mepal and there is the site of a deserted medieval village on the small fen island of Way Head.

There was piecemeal drainage of the fens throughout the Middle Ages, but the landscape would have changed with the seasons, becoming increasingly waterlogged during the winter months. One of the largest early areas of fen reclamation was at Great Dams Fen, to the west of Coveney, where long narrow fields were subdivided by linear dykes.

Years of intensive drainage have transformed the fen from marsh into top quality arable land, yet the imprint of the medieval landscape remains in the hill-top villages, ridgetop island roads and the embanked fen roads, which often have sharp right-angled bends. The Fen Isles are subtle hills, but they are prominent in the low-lying fen and form a backdrop to local views. There are dramatic long views out across the fen from the ridgetop roads as they cross the summit of each fen island.

Compared to other parts of the fen, the Fen Isles LCA seems relatively enclosed. The diverse combination of field, road and settlement patterns is ordered in response to subtle variations in topography, giving the area an attractive 'settled' quality and an exceptional sense of historic continuity.

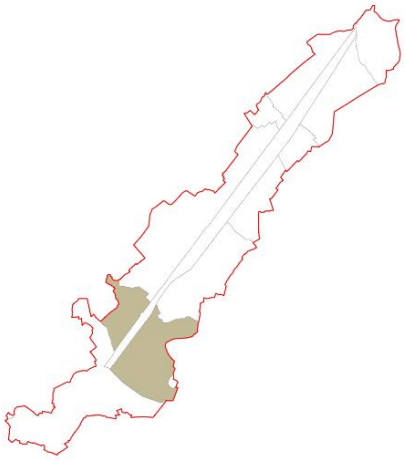
Left: Scattered trees define smaller fields; near Witcham Hythe. Long views out from the ridge top roads of the Fen Isles; view to the south across North Fen from Sutton. Images by Sheils Flynn for OWLP.

Clusters of trees and hedgerows associated with the villages and farmsteads on the 'islands' are prominent and the numerous historic tracks and drove roads are often bordered by clumps and lines of trees. The areas of open arable fen are relatively small in scale and all have evocative names – 'Coveney Sedge Fen', 'The Corkeretts', 'Home Dams Fen' – which hint at their historic use and territorial links.

Fen Isles LCA: Distinctive landscape characteristics

- Gently sloping low clay hills with a rounded profile, which are elevated above the surrounding low-lying, flat peat fen
- Roads are aligned along the rounded 'spine' of the island ridges with villages on the summits
- Diverse pattern of fields - smaller paddocks, pastures and orchards surrounding villages contrast with the large scale flat arable fields on the surrounding fen
- Historic tracks and greenways, with straight drove roads leading from villages across the fen
- Embanked roads form 'causeways' across the flat fen between the Fen Isles
- Curving ditches often define the break of slope at the edge of the Fen Isle, following the contour.
- Hedgerows and groups of trees around villages and farmsteads on the Fen Isles; the surrounding flat fen has a subtle sense of enclosure
- The Fen Isles form a backdrop to views across the fens and there are dramatic long views out from the ridgetop roads

1.1.7 Meadland to Lower Delphs LCA: Landscape development & character



Arable farmland with an expansive, open scale; Sutton West Fen. Images by Sheils Flynn for OWLP.

Today the Meadland to Lower Delphs LCA is an open, arable landscape with no significant settlements other than farmsteads. 10,000 years ago it was very different: at this time the River Ouse flowed across a marshy, delta-like landscape within a braided channel on its way to The Wash. This prehistoric landscape would have been a diverse mosaic of marsh, wet meadows and woodland, with areas of pasture and (in the Bronze Age) arable plots on slightly elevated islands of river terrace gravels on the edge of the floodplain. Scattered archaeological evidence suggests that the area was occupied during the Mesolithic period, but excavations have revealed an important complex of Neolithic and Bronze Age features which suggest the gravel islands along the former course of the River Great Ouse, where it met the fen edge, were a focal point for prehistoric activity.

A large causewayed enclosure on the Upper Delphs terrace dates from the Neolithic period. The perimeter of the enclosure is defined by a ditch, with a palisade and, inside the entrance, a burial mound containing fragments of human skulls and a polished axe. To the north (Foulmire Fen) there is another complex of Neolithic barrows, and to the west (near Stocking Drove Farm, Chatteris) there is evidence for a later Neolithic occupation site. The importance of the area for ceremonial funerary monuments continued in the Bronze Age. Three clusters of bowl barrows on a former gravel island near Earith are Scheduled Monuments and, together with the Bronze Age barrows found near Over, the whole complex would have been a prominent and significant ceremonial landscape which persisted for thousands of years.

Archaeological evidence of Roman activity is concentrated along the south west borders of the LCA, near the Car Dyke and the Roman settlement near Somersham (See Ouse Valley Wetlands LCA), but a late Iron Age - Roman shrine, placed on a Bronze Age barrow suggests that the Upper Delphs terrace continued to be used as a site for ritual.

The lack of Saxon and medieval settlement suggests that people retreated to the higher land of the nearby Fen Isles (to the villages of Haddenham and Sutton) as the peat deposits grew and the low-lying fen became progressively waterlogged. The wet ground was traversed by two important causewayed roads, which connected the Isle of Ely to the fen edge – the Aldreth Causeway (now a byway) to the south and Hill Row Causeway (now the A1123), part of which follows the alignment of a roddon between Earith and Haddenham. There was a timber bridge over the River Ouse at Earith in 1172 associated with a hermitage and it is thought that the hermits provided a ferry service before the bridge was constructed.

There was piecemeal drainage of the low-lying fen throughout the Middle Ages, but the dynamics of the local drainage systems were transformed with the construction of the Ouse Washes in 1651. Moore's map of c1658 shows that the alluvial banks of the Upper Delphs, along the River Great Ouse, were subdivided into small pastures, while the waterlogged peat soils remained as common fen ('Gall Fen'). The parcels of land taken (from the common fen) by investors in Vermuyden's Ouse Washes drainage scheme are still known as Adventurer's Fen and Adventurer's Head.

In 1663 the Bedford Level Corporation was established to regulate and consolidate the land drained in the Fens. The strategic drainage schemes proved unsuccessful and in the early 18th century; the records of the Corporation suggest that the Haddenham Fens were too wet for use as farmland. A new Act of Parliament led to the creation of the Haddenham Level Commission which raised levies for cutting drains and established wind pumps. The efforts of the Commission were broadly successful, although the vicious cycle of drainage leading to desiccation and wastage of the peat was an ongoing problem.

Strategic cuts made by the Bedford Level Corporation to the lower sections of the River Great Ouse in the 1820s relieved pressure on the Haddenham Levels and, in combination with the arrival of steam driven pumps, increased the effectiveness of fen drainage schemes. The 1833 Bedford Level map shows the intensity of land use and that the plots on the Upper Delphs had been enlarged. Agricultural intensification was encouraged during the war and soon after the steam driven pumps were replaced by diesel pumps.

Today the Sutton Meadlands and Haddenham Levels are an expansive and tranquil arable landscape which seems vast and 'empty'. There are few roads and virtually no settlement. Much of the area is inaccessible to the public and the only movement is from farm vehicles.

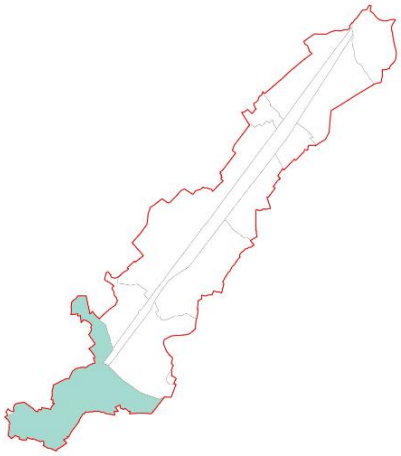
Large fields are subdivided by a rectilinear network of drainage ditches: Gall Fen from Dam bank Road. Image by Sheils Flynn for OWLP.

The farmland landscape has a strongly geometric pattern, with straight tracks and a network of rectilinear drainage ditches. The only curving alignments are those of historic routes and dykes, including the Hill Row Causeway, the catchwater drains and that define the margins of the higher land (of the Fen Isles) to the east and the Cranbrook Drain (marking the historic alignment of the Roman Car Dyke) to the south-west.

Meadland to Lower Delphs LCA: Distinctive landscape characteristics

- Arable farmland with an expansive, open scale
- Large fields are subdivided by a rectilinear network of drainage ditches
- No settlements; isolated farmsteads surrounded by clusters of trees are occasional focal points
- Belts of trees sometimes form the horizon in open views across the fen
- Few roads, straight tracks and droveways are bounded by deep drainage ditches
- Panoramic views and vast open skyscapes
- Tranquil and remote

1.1.8 Ouse Valley Wetlands LCA: Landscape development & character



A richly diverse mosaic of wetland habitats at the RSPB Fen Drayton Lakes. Images by Sheils Flynn for OWLP.

The fen edge villages of Somersham, Colne, Earith, Bluntisham, Needingworth, Holywell, Fenstanton, Fen Drayton, Swavesey, Over and Willingham are sited on or just above the 5m contour which defines the broad floodplain of the River Great Ouse at the point where it (historically) flowed into the Fen Basin. The Great Ouse is now channelled between embankments and gravel extraction on its floodplain and which has transformed the former waterlogged fen into a cluster of lakes, but the local landscape pattern still reflects the historic relationship between settlement on higher land and the low-lying fen. The Ouse Washes study area skirts around the margins of the fen edge villages and includes the fields and droveways that led from the villages onto the fen.

The majority of the Ouse Valley Wetlands LCA is underlain by deep clay soils, with patches of river terrace gravels and river alluvium on the broad floodplain of the River Great Ouse. The area is exceptionally rich in archaeological evidence, in part because large scale mineral extraction and infrastructure development (e.g. the Guided Busway) have provided opportunities for archaeological investigation. Reported finds dating from the Palaeolithic and Neolithic periods suggest that the banks of the Great Ouse have long been a focus for human occupation and settlement. Neolithic pits have been recorded at Low Fen, Fen Drayton and numerous sites on the edge of the study area at Somersham, Colne, Earith, Bluntisham, Over and Fenstanton include Neolithic finds and features. At Barleycroft Farm, Bluntisham, a multi-phase occupation site incorporates a henge that dates from the Neolithic period, as well as evidence for enclosures, pits and a trackway from the Bronze Age.

The area is exceptionally rich in Bronze Age finds, with clusters of round barrows on the edge of the river corridor near Over, Holywell and Bluntisham. These are thought to be part of the ceremonial landscape associated with the Neolithic and Bronze Age causewayed enclosure and clusters of Bronze Age bowl barrows on the Upper Delphs Terrace to the north (see Meadland to Lower Delphs LCA). The Fen Basin was becoming increasingly waterlogged during the Bronze Age and such barrow sites would have been on the edge of a delta-like landscape of winding water courses and backwater channels encircling islands of gravelly soils; ritual offerings may have been made in the encroaching fen waters.

The Iron Age fort at Belsar's Hill, Willingham is to the south of the Ouse Washes study area, but this is thought to have been a regional centre and there is evidence of Iron Age settlement to the north of Belsar's Hill, at Queenhome, at Over, Low Fen near Fen Drayton, on the fen edge between Earith and Colne, and at Bluntisham. Some of these settlement sites are associated with enclosures and trackways and most evidence is from multi period sites, where occupation continued into the Roman period. The Aldreth Causeway, a historic route which crosses the fen between Belsar's Hill and the Fen Isles at Aldreth, may possibly date from the Bronze Age.

The area was a focus for activity throughout Roman times, when the Car Dyke (a canal dug to link a sequence of natural waterways) would have been an important transport route. There is evidence of Roman settlement at fen edge sites throughout the Ouse Valley Wetlands LCA, including at Earith, Bluntisham, Colne Fen, Fenstanton, Fen Drayton, Swavesey and Over. A large settlement alongside the Roman Car Dyke near Somersham was an important inland port. The extensive evidence from the Roman period suggests that the pattern of settlement we see today was established during this time, with evidence for Roman settlement, field systems, enclosures, droveways and buildings in or near to the present day villages.

As the Fen Basin became wetter and conditions deteriorated, settlements would have become concentrated on higher, drier land by the Early Saxon period. By the Late Saxon - medieval period, the fen edge villages were surrounded by open fields, with straight droveways leading to common pastures on the fen. Many would have been associated with watermills and lodes, which carried river traffic (from the Great Ouse) to local village quays. There are remnant areas of ridge and furrow and medieval field systems within paddocks and farmland on the fenland margins of some villages, including Over (along Back Lane), Swavesey (near Mill Way) and off Parkhall Road, Somersham. The small town of Swavesey was a significant centre, with the site of a Benedictine priory and estate and, to the south of the priory, a motte and bailey castle on the edge of the fen within the Ouse Washes study area. At Somersham, the extensive site of the Bishop of Ely's Palace is on higher land to the south of the study area.

Evidence for fluctuating water levels and early piecemeal drainage of the fens is provided by recent archaeological excavations at Willingham Mere, an extensive fenland lake which developed when the small valley of a tributary to the River Great Ouse became increasingly waterlogged during the Early Bronze Age. By medieval times, there were two adjacent meres – Willingham Mere to the west and Oxe Mere to the east. During the 17th century, Willingham Lode, and a number of local drainage channels, flowed into the mere, which was embanked to prevent the flooding of the Aldreth Causeway and newly drained land. However, the construction of Earith Sluice (by the Bedford Level Corporation) diverted the flow of the River Great Ouse into the New Bedford River, enabling the drainage of the fen throughout this area. By the mid 18th century, Willingham Mere had been drained and the former wetlands had become farmland, pumped by drainage windmills (e.g. Crane's Fen Mill) which lifted water from the main drainage ditches into the river. In the mid 19th century, following the formation of local drainage commissions, the windmills were replaced by steam driven pumps.

The 1604 Hayward Map illustrates the medieval landscape of the Ouse Valley Wetlands LCA. Fen edge villages (with churches) are depicted on the margins of the higher land, overlooking areas of common fen which were apportioned to each settlement. Willingham Mere is shown, along with the principal navigable lodes and dykes that connected the villages to the River Great Ouse.


Left: Historic village centre of Fen Drayton. Right: Orchards on the outskirts of Earith. Images by Sheils Flynn for OWLP.

This is the most densely populated part of the Ouse Washes study area, yet the meadows and lakes on the edge of the fen and alongside the River Great Ouse seem tranquil. The hinterland of the villages is a diverse, relatively small scale, enclosed landscape of orchards, paddocks and small fields, with a network of hedged tracks and lanes. There is a transition to a more open, large scale landscape on the margins of the fens, but the historic droveways and lanes are enclosed by hedgerows and the open landscape towards the river is typically viewed through a 'frame' of trees and hedges. There is a strong sense of place: the historic sense of territory is partially intact, and parts of the fenland margins still seem to 'belong' to specific adjacent villages.


Left: Holywell footpath from church. Right: Fen Drayton Lakes seen from hide. Images by Sheils Flynn for OWLP.

Extensive mineral extraction during the 1950s transformed the landscape of the broad river floodplain. The resulting flooded gravel pits are now managed by the RSPB as a nature reserve, with a mosaic of lakes, meadows and reedbeds known as the Fen Drayton Lakes.

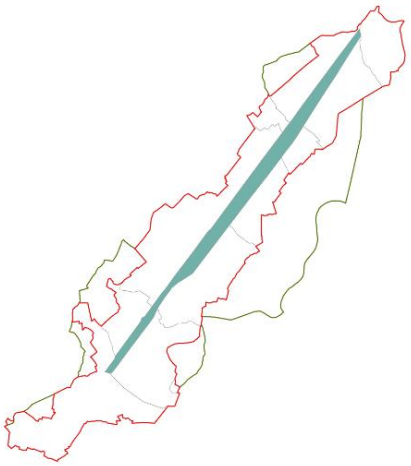
Views across the Fen Drayton Lakes are enclosed by the surrounding woodlands and this part of the area seems separate and relatively isolated from its village and farmland context. The open arable fields of the fen are often interrupted by extensive sand and gravel extraction sites. These are a temporary feature of the landscape as the gravel pits are subsequently restored as wetland landscapes with a mosaic of reeds and open water. The landscape of the Ouse Valley Wetlands LCA is

in transition and is gradually becoming more diverse as the geometry of the open arable fields is broken up and changed to a natural, organic wetland mosaic.

Ouse Valley Wetlands LCA: Distinctive landscape characteristics

- Broad flat floodplain of the River Great Ouse and its surrounding clay margins
- String of villages, with a diverse, 'busy' hinterland of paddocks, orchards and farmsteads defines the higher land on the margins of the fen
- Strong sense of place and of territory - historic droveways and lodes connect the villages to their historic areas of common fen
- Extensive gravel pit lakes and wetlands have transformed the floodplain of the River Great Ouse and some areas remain in transition
- Fen-edge fields often enclosed by hedgerows; arable fields on fen have open boundaries but views across the floodplain are typically enclosed by the woodlands and belts of trees surrounding the restored wetlands
- Highly accessible landscape with a concentration of villages and distinctive landmarks

1.1.9 Ouse Washes LCA: Landscape development & character



The Ouse Washes at the WWT Welney Nature reserve. Images by Sheils Flynn for OWLP.

The Ouse Washes LCA is the unique corridor of washland which cuts diagonally across the LP area between Earith in the south and Denver in the north. Created by Vermuyden's strategic drainage scheme of the 1650s, the washlands are a remnant corridor of fen pasture retained between the embankments that were constructed alongside the Old and New Bedford Rivers. To the south of Mepal, the washland soils are river alluvium over peat; to the north of Mepal, the Ouse Washes are underlain by amorphous peat soils. An exception is the historic course of the Old Croft River, which is underlain by marine silts and alluvium as it crosses the Ouse Washes near Welney.

For hundreds of years before Vermuyden's scheme, this area would have been part of the low-lying common fen between the parishes of the Fen Isles to the east and the Chatteris – Manea Isle to the west. The Historic Environment Record shows relatively few archaeological finds and sites within the Ouse Washes, perhaps a reflection of the marshy pre-drainage character of the area, although the relative low level of archaeological research here may also account for this difference.

The drainage plan was undertaken in two stages. In the 1630s the 4th Earl Bedford oversaw the works to dig a cut (the Old Bedford River) to take the waters of the River Ouse in a straight line across the fen from Earith to Salter's Lode. This proved to be unsuccessful as it reduced the flow of water in the natural rivers, making them more prone to siltation at their outfalls to the sea. Twenty years later, Vermuyden's scheme involved the construction of a parallel, second cut, the New Bedford River, to create a 30km long strip of washland which functioned as a flood storage reservoir to retain winter floodwaters and prevent flooding of the newly drained farmland on the surrounding fen. This ambitious flood protection scheme remains functional today and is critically important to the management of water levels across the south eastern part of the Fen Basin.

The scale of the 17th century drainage scheme was immense. The excavation work was undertaken by hand, by Scottish and Dutch prisoners of war. Local fenmen refused to take part and indeed tried to sabotage the work as they were concerned that the drainage scheme would result in the loss of the common fen that the poor relied on to support their meagre living.

By the outbreak of the English Civil Wars in 1642, the Old Bedford River had been completed but Vermuyden's drainage scheme (construction of the New Bedford River and the Ouse Washes) had not begun. Many fenmen had a strong hatred for the Royalists because they felt that drainage projects backed by the king had been imposed, damaging their livelihoods. A combined force of Parliamentarian militias (in which Oliver Cromwell served) was responsible for defending the frontier and, when Royalist occupied Peterborough in 1643, Cromwell ordered the fortification of a number of crossing points of the River Ouse to form a barrier to stop the enemy advance. The well-preserved Earith Bulwark Fort (a scheduled monument) was constructed in this period to protect the bridge where the Ely road crosses the river.

Today the Ouse Washes are important for flood protection, but are also managed for nature conservation. The seasonal wetlands and wet pastures are designated as SPA and Ramsar site in recognition of their international importance for migratory birds and breeding waders and over three quarters of the Ouse Washes are owned by the RSPB, the Wildfowl and Wetlands Trust and the Wildlife Trust, with the flood management operated by the Environment Agency. A strip of land along the western side of the Ouse Washes is also designated as a Special Area of Conservation because of the presence of Spined loach populations within the Counter Drain and Old Bedford River.

Left: The Old Bedford River at the RSPB Ouse Washes reserve. Right: Seasonally wet pastures at WWT Welney nature reserve. Images by Sheils Flynn for OWLP.

The richly textured landscape of the Ouse Washes contrasts with the surrounding arable fen. Much of the wet grassland is closely cropped by cattle and the landscape pattern has an expansive scale, but the area's natural mosaic of meadow, reeds, marsh and wetland creates an attractive, rather mysterious place which seems secretive and hidden from outside view.

Ouse Washes LCA: Distinctive landscape characteristics

- A corridor of seasonally wet pastures retained between the Old and New Bedford Rivers, used to store flood waters in winter months and as pasture in summer
- Enclosed landscape of meandering water courses, ditches, lush meadows and hedgerows that contrasts with the surrounding arable fen
- Dramatic seasonal changes between summer pasture and winter floods
- Richly textured mosaic of wet meadow, reedbed, open water and wet woodland of international biodiversity value for migratory birds and waders
- Large scale infrastructure, including sluices at Denver, Welches Dam and Earith
- Managed for nature conservation – two nature reserves are a mecca for bird watchers
- 'Secret landscape', hidden from wider view by embankments and relatively inaccessible, except at the road crossings at Earith, Sutton Gault, Mepal and Welney
- Peaceful, still and close to nature

Landscape Character: Summary

The OWLP scheme area is composed of seven different Landscape Character Types (LCTs). The Landscape Character Assessment carried out for the OWLP scheme identified nine discrete Landscape Character Areas (LCAs), each with its own particular identity. At the northern end of the OWLP scheme area, the relatively small fields, paddocks, commons and orchards around the villages of the Denver LCA provide for a sense of enclosure. This contrasts sharply with the expansive open landscape of the Nordelph to Ten Mile Bank LCA to its south. This in turn contrasts with the Old Croft River LCA with its winding pattern of medium-sized fields and linear villages following the former Old Croft River silt deposits.

To its south west, the Manea to Langwood Fen LCA is a tranquil and remote area with few settlements, consisting of expansive, flat arable farmland, with hedgerows and belts of trees providing a backdrop to views. On the opposite, eastern side of the Ouse Washes, the Pymoor LCA shows a distinctive 'herringbone' pattern of straight roads and droveways, subdividing the farmland. The elevated parts of the Fen Isles LCA to its south seem relatively enclosed, showing an exceptional sense of historic continuity in the field, road and settlement patterns. Further south, the Meadland to Lower Delphs LCA consists today of a very open, arable landscape with no significant settlements other than farmsteads, but with a rich prehistoric settlement history.

At the southern end of the OWLP area, the Great Ouse Wetland LCA is surrounded by a string of historic fen edge villages which are sited on or just above the 5m contour defining the floodplain of the River Great Ouse; these villages are surrounded by a 'busy' hinterland of paddocks, orchards and farmsteads which contrast with the relatively isolated and tranquil Fen Drayton Lakes at the LCA's heart.

Cutting through or abutting all other LCAs, the Ouse Washes LCA consists of a central corridor of seasonally wet pastures retained between the Old and New Bedford Rivers, providing for an enclosed and peaceful landscape of water courses, ditches, lush meadows and hedgerows that contrasts with the surrounding arable fen.

1.2 Landscape History

1.2.1 Formation of the land

The story of this part of the Fens starts at the end of the last Ice Age; with the melting of the glaciers, sea levels rose and Britain became separated from the continent. The ebb and flow of seawater counter-balanced by the erosion and deposition of inland rivers subsequently led to the infilling of the Fen Basin with deposits that derived from both marine and freshwater environments.

We think of the Fen Basin as a flat, low-lying area and while it certainly is that today, archaeological and palaeo-environmental research has shown that it was once an undulating plain, where low hills and ridges formed topographic relief and where many rivers, peaty ponds and freshwater meres provided rich natural environments both for wildlife and the postglacial settlers. This dryland landscape initially supported vast plains and areas of dense woodland with scrubby carr in wetter areas. But it was a dynamic landscape, where incursions into the basin from the sea resulted in the formation of salt marsh environments and tidal creeks, which rapidly infilled following marine incursions. Over time, the rivers flowing into the basin from the Midlands became choked, forcing overbank flooding of their silt loads and capping great expanses of the former salt marsh in their catchment. High ground water levels resulted in the formation of reed swamps and peat development.

Marsh development and peat formation occurred periodically throughout the course of human occupation from the period of the first settlers (Neolithic), during the Bronze and Iron Ages, again in the late Roman period and throughout the Anglo Saxon and medieval periods. The sequence of diagrams below shows how the balance between peat and marine silts changed as the layers of peat deposits grew over time, gradually encroaching on the silt to the north.

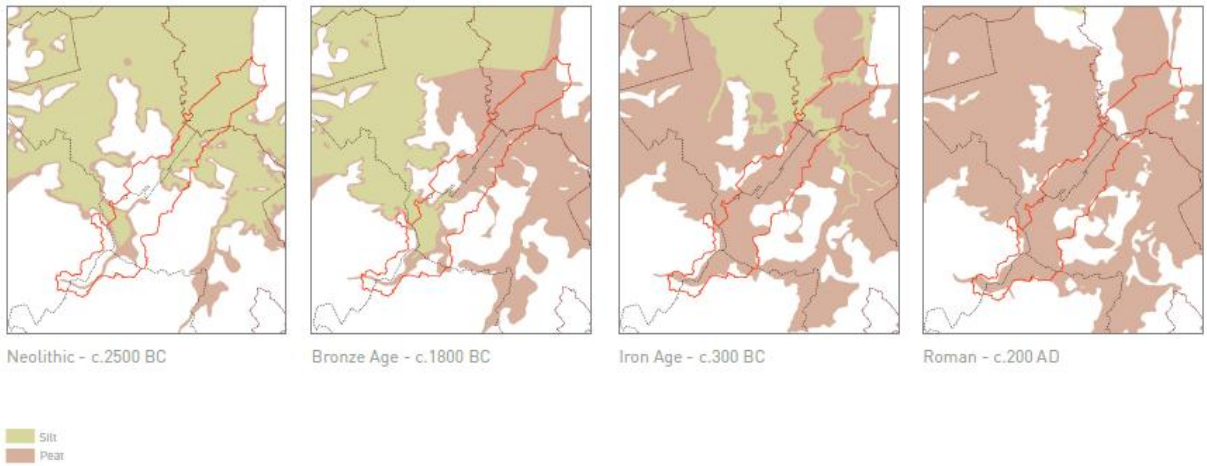
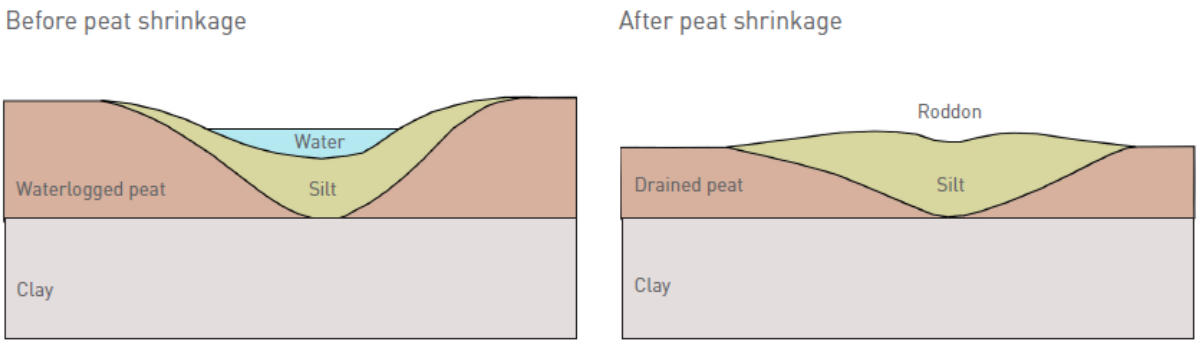
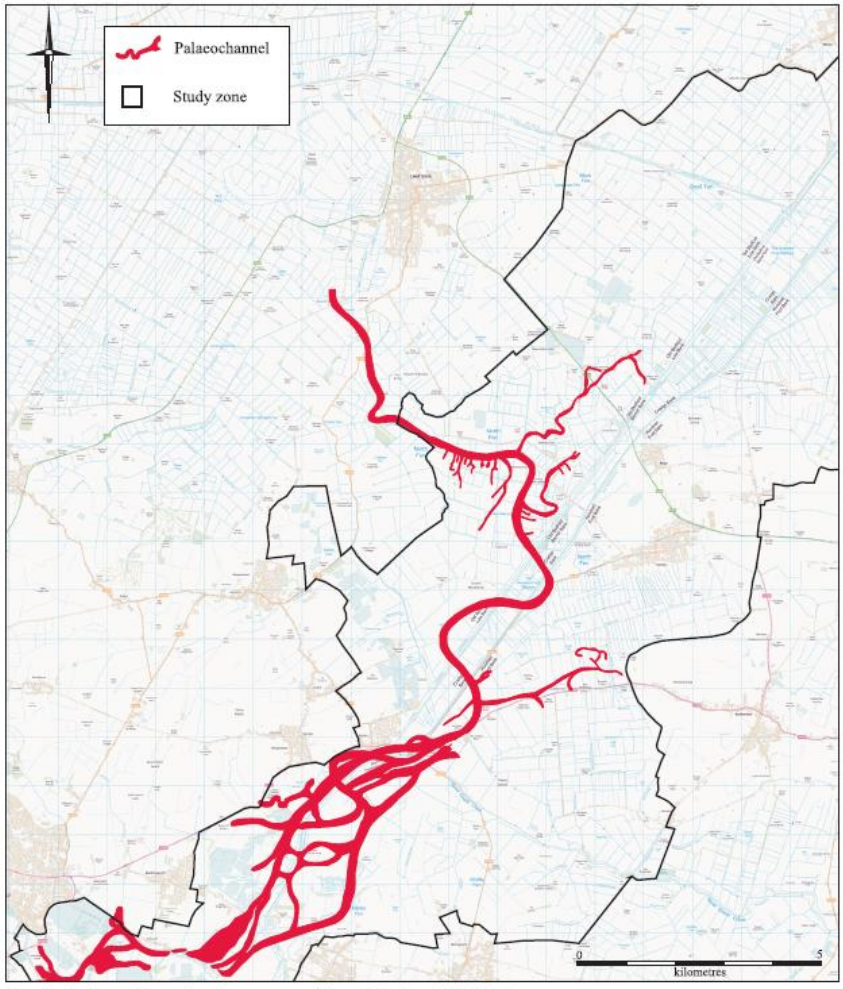


Diagram showing the dramatic landscape changes in the OWLP area throughout prehistory, as a result of changing patterns in the deposition of marine and freshwater deposits. Based on maps illustrating the formation of the fen landscape in Changing Landscapes: the Ancient Fenland, John Coles and David Hall, Cambridgeshire County Council, 1998. Image created by Sheils Flynn for OWLP.

The remnant meanders of earlier tidal river systems and creeks are preserved as sinuous ridges of silt and sand known as ‘roddons’. Such roddons long provided a stable foundation for siting settlements and roads. The paths of these ancient water courses show up on aerial photographs and are visible as low ridges in the fields due to shrinkage of the peat, while others are concealed beneath blanketing fen deposits.



Formation of a roddon - from a river channel which fills with silt deposits, to a low ridge which emerges when the surrounding peat is eroded. Image created by Sheils Flynn for OWLP.



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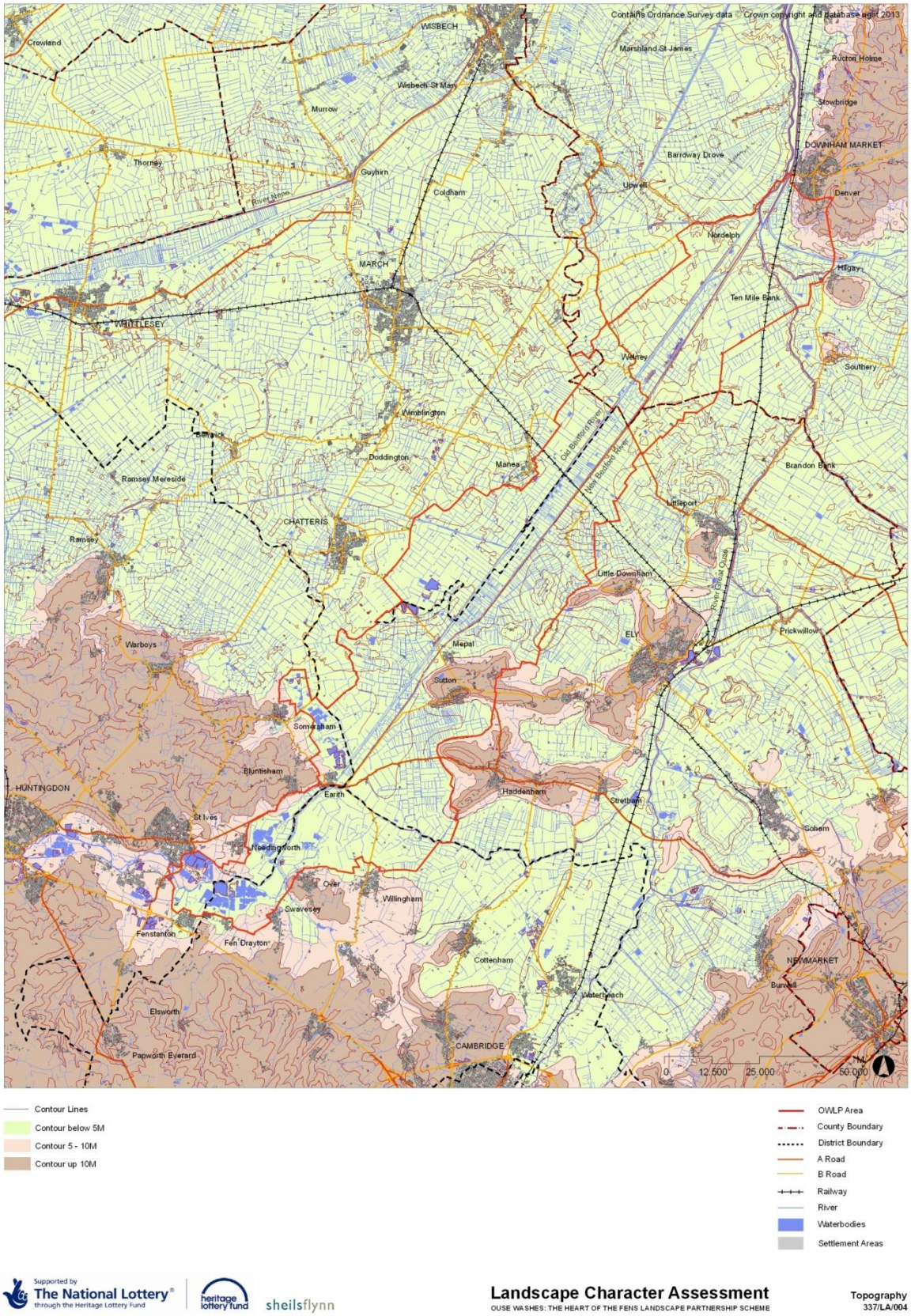
Southern end of the OWLP area, showing the known palaeochannels of the River Ouse, which would have flowed across the Fen Basin towards the Wash. This detailed information has come about through extensive archaeological research in the southern part of the OWLP area over the last few decades. The braided water course and associated wet, marshy conditions would have persisted until medieval times, when the first attempts at drainage began. With kind permission reproduced from 'Twice Crossed River: prehistoric and paleoenvironmental investigations at Barleycroft Farm, Over, Cambridgeshire. The Archaeology of the Lower Ouse Valley, Vol III', Christopher Evans et al, forthcoming 2014.

The combination of deep layers of peat, clay and silt crossed by large sluggish, meandering rivers eventually created a vast, watery landscape of marsh, bog, wide rivers and open meres. Settlement gradually retreated to the higher ground of the fen 'islands' and to the resource-rich edges of the Fen Basin.

The balance between peat and silt changed again with intensive drainage which was undertaken since the 17th century: as peat is drained it dries out and shrinks, causing the land to subside; in some cases this process has led to a lowering of the land surface by up to 6 metres. This situation was exacerbated by the fact that desiccated peat can easily be carried away by the wind in a 'fen blow'. Relatively little peat remains today, although there are still some pockets of deep peat, including parts of the Ouse Washes itself.

The New Bedford River and its banks separate the Ouse Washes (left) from the much lower arable fields; near Pymoor. Image Kite Aerial Photography © Bill Blake Heritage Documentation.

As a result of intensive drainage and erosion of the peat, the rivers that cross the fens are now perched high above the level of the surrounding farmland and enclosed by steep embankments. The area today is an intensively managed landscape that bears little relation to the former natural environment; much of the land is below sea-level; it relies on pumped drainage and the control of sluices to carefully control water levels, to manage the risk of flooding and to conserve some of the most productive farmland in the country.



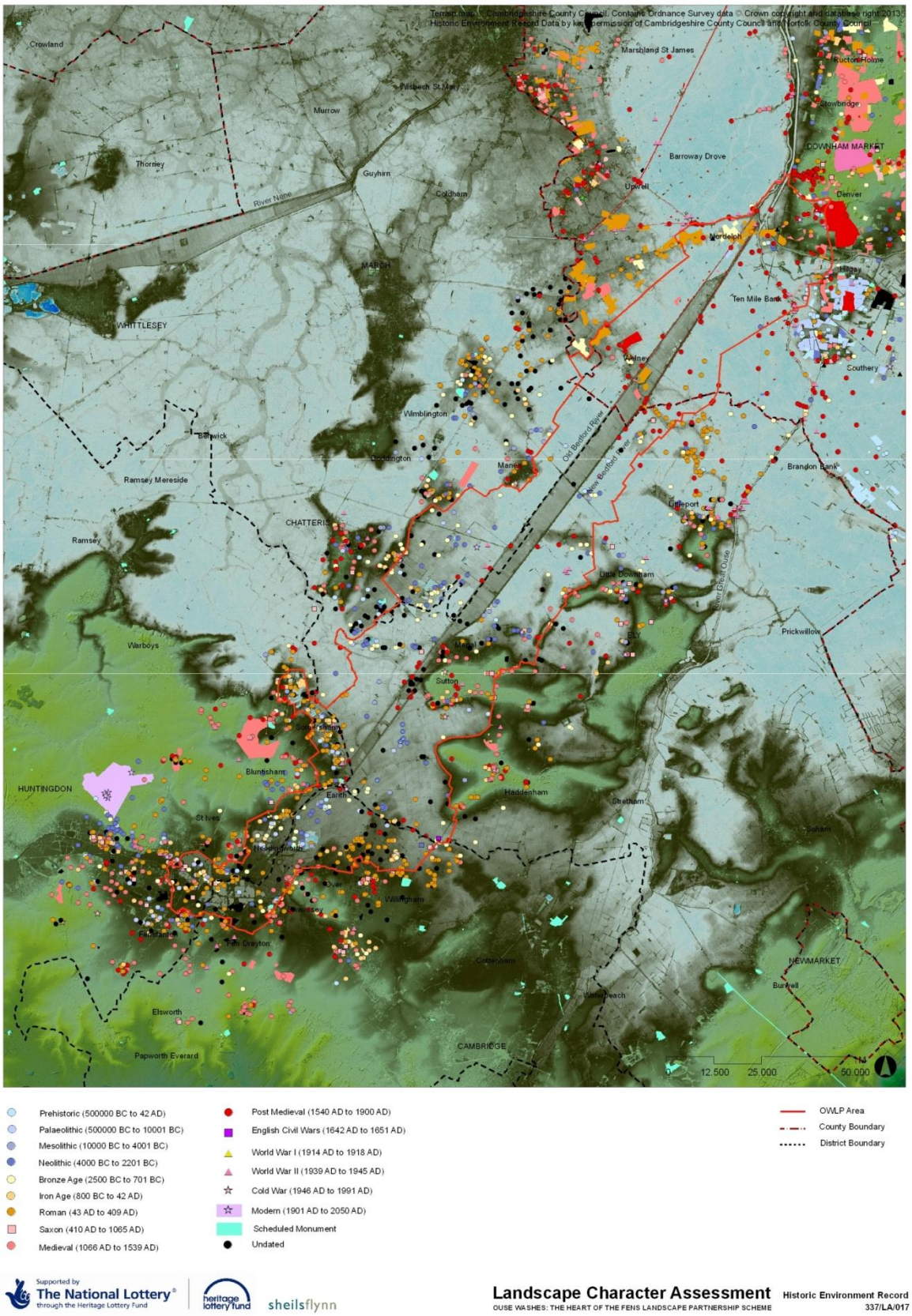
Map showing the topography of the OWLP area and its surroundings, illustrating that the majority of the land is flat and below the 5 m OD contour line. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

1.2.2 Peopling of the land

There is a rich archaeological and engineering heritage within the OWLP area with well-preserved ancient settlements and ritual monuments and a precious repository of waterlogged archaeological and palaeo-environmental remains. There is especially rich and diverse archaeology of wet- and dry land prehistoric and Roman sites, well-preserved ancient 'bog oaks', as well as a diversity of field patterns ranging from the ancient semi-regular enclosure to the engineered 18th century fields of the open inland fen following extensive drainage.

The area's buried heritage provides good evidence for the reconstruction of prehistoric landscapes, but is vulnerable to exposure as a result of continuously shrinking peat levels. The below map provides an overview of the known archaeological sites in the area (data obtained from the Norfolk and Cambridgeshire Historic Environment Records). Where there is a lack of find spots this does not necessarily reflect a lack of archaeological remains: the much better preservation conditions of the Ouse Washes itself, for instance, very likely cover numerous sites yet to be discovered. Several clusters can be seen in the OWLP area:

- A cluster of primarily Roman sites at the northern end of the OWLP area, around the Fen Causeway Roman canal and road system;
- A cluster of primarily Roman sites around the former Old Croft River and its earlier roddons in the northern part of the area;
- A cluster of sites and find spots from the Neolithic and Bronze Age periods at Block Fen and North Fen, in the area east of Chatteris;
- Sites from multiple periods on the edges of the Fen Isles around Mepal and Sutton;
- Extensive areas of sites at the southern end of the OWLP area, on the gravel terraces at the edge of the Fen Basin, with particular high numbers of Neolithic, Bronze Age, Iron Age and Roman sites (the latter particularly around the Car Dyke) in the area around Earith – Somersham, around Needingworth, to the south east of St Ives and around the former Willingham Mere.



Map showing archaeological sites and find spots in the area, separated out by period. Information obtained from the Historic Environment Records of Norfolk and Cambridgeshire. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

1.2.3 Mesolithic and Neolithic Periods (c8300 – 2000 BC)

The shifting layers of peat and silt in the Fen Basin have long buried early occupation sites, but traces are exposed when occupation sites located on higher ground become exposed, or through deep investigation opportunities associated with quarries. Finds of flint tools and stone axes have occasionally been found close to former water courses, although the Mesolithic hunter-gatherers favoured the lighter soils of sand bars and sandy hillocks. Other occupation sites from this period located on low ridges of infilled glacial rivers are known from excavations in sand and gravel quarries at Sutton Gault and Over.

From the Neolithic period, concentrations of flint scatters ploughed up are known from the gravel terraces of the River Great Ouse in the southern part of the study area, such as around the old Fen Drayton gravel pits where they were also excavated in advance of quarrying, on the lower edges of the islands, such as at Manea, and on the islets and ridges of the Old Croft River.

Surviving earthworks are rare although some remains are known at Horsely Fen in the eastern part of Chatteris parish (scheduled). An early Neolithic long barrow (burial monument) was excavated in the Upper Delphs at Haddenham in association with a large causewayed enclosure. Later settlement evidence denoted by pit clusters, postholes and utilised land surfaces full of flint tools, knapping waste, diagnostic Grooved Ware pottery and animal bones, has been excavated on either side of the river at the Needingworth quarry sites of Barleycroft Farm and Over; this suggests that the location of these ceremonial, funerary and settlement sites in and above the complex floodplain of the braided palaeoriver system of the Great Ouse was particularly favoured by the Neolithic communities who also constructed small henges (circular ceremonial ditched enclosures with external banks). Elsewhere in the Ouse Washes, such early sites are covered by blanketing fen deposits, although artefacts have sporadically been recovered throughout the area by dyke slodgers and ditch diggers during the 19th and early 20th centuries.

1.2.4 Bronze Age and Iron Age (c2000 BC – AD 43)

Clusters of Bronze Age burial mounds, ring ditches, post alignments and enclosures at the fen edge near Over and Willingham, at Honey Hill, Chatteris and on the fen islands near Haddenham indicate locations of significant settlements which were the centre for ceremonial activities. Settlements were associated with enclosures and droveways with areas for holding and grazing livestock.

Around 2000BC the influence of the sea was dominant over much of the Fen Basin, with a maximum marine transgression around 1700BC in the Earith – Over area ('Earith-on-sea'). However, peat continued to encroach across the whole of the south east Fen Basin, with the peat fen becoming a mosaic of marsh and water meadows: by about 1000BC waterlogging of the basin was complete and the few higher land forms became islands in a surrounding marsh – such as Manea, Stonea and Chatteris. Settlement would have been limited to the higher land of these fen islands and the fen edge promontories.

The peat fen continued to actively encroach on the drier land throughout this period, choking the rivers and infilling their floodplains. Archaeological evidence of ritual offerings and sacrifice suggests that Bronze Age communities treated the expanding wetlands with fear and respect. Dyke cleaning and small excavations have also unveiled many wooden trackways built at this time enabling passage across more accessible fen areas. Hoards of bronze weapons, tools, decorated fittings and other objects were also buried in the marsh (e.g. the Wilburton and Isleham hoards) - a practice that continued well into the Iron Age period.

By 300BC, peat had engulfed all the low-lying lands. Buildings and pastures would have become waterlogged and abandoned - as observed at the quarry sites at Meadow Lane, St. Ives, Colne Fen and Knobbs Farm, Somersham - all subsequently submerged by peat. During the Iron Age technological advances greatly increased the repertoire of metal items, including the production of plough shares. These could be used effectively on the heavy clay soils of the fen islands, while wooden spades fitted with iron shoes could make lighter work of ditch digging.

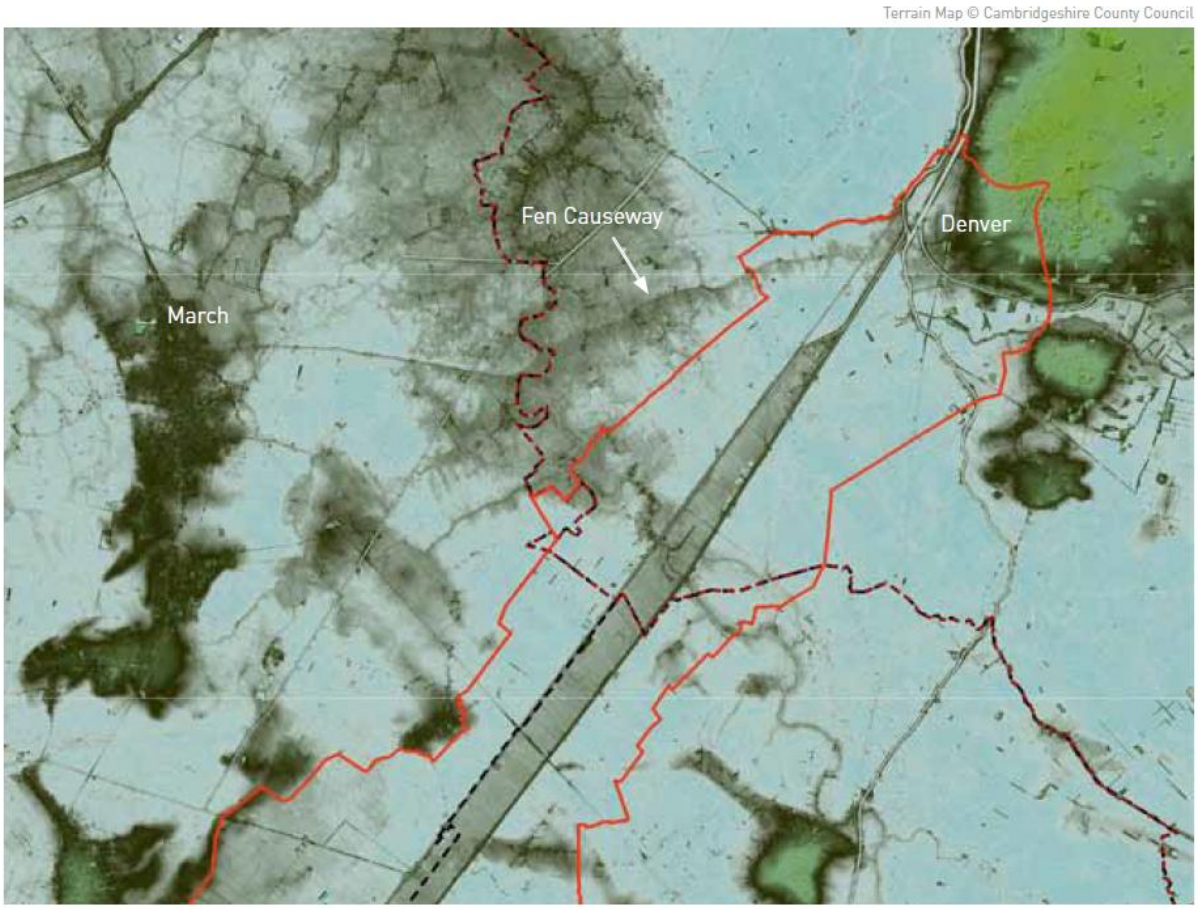
Back Drove, a historic trackway between Earith and Colne which may have been in use since Bronze Age times when this area was densely settled. Image by Sheils Flynn for OWLP.

Formerly unenclosed early Iron Age settlements gradually became enclosed - in part to prevent against rising flood waters, but over time their forms also became decidedly more defensive in character. The excavations of a small ring work, surrounded by a complex series of ditches at Wardy Hill suggest a well defended settlement, with high rampart banks beside the ditches enclosing at least four circular huts. A large circular earthwork on the southern edge of the fen at Belsar's Hill, Willingham, may have been a regional centre, while another Late Iron Age large D-shaped enclosure at Stonea Camp to the east of March is believed to have been a defended stronghold of the Iceni tribe.

1.2.5 Roman Period (AD 43 – 410)

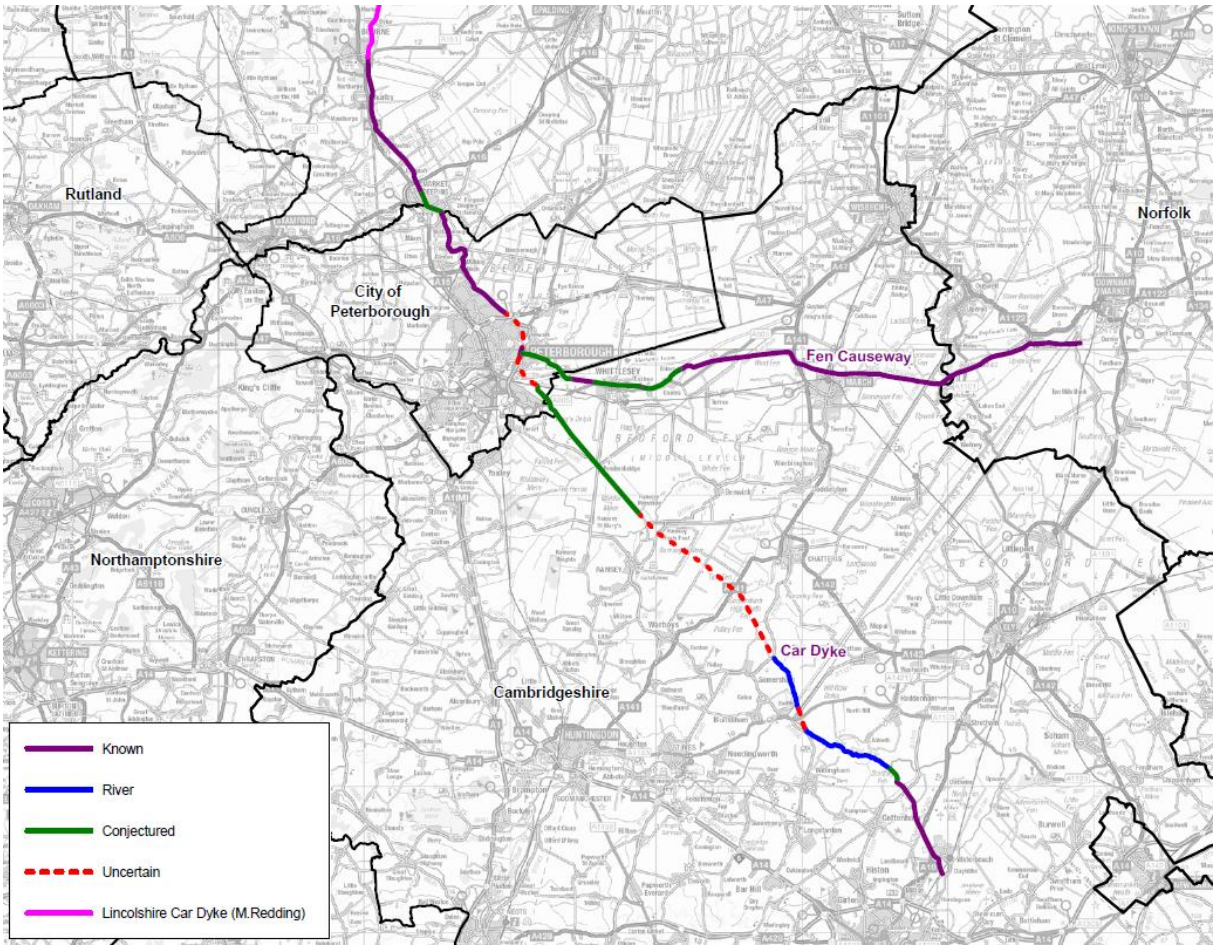
The water table was lower during the Roman period and a wider range of dry land was available for settlement than in the preceding centuries. A proliferation of Roman rural settlements with extensive field systems is known from across the area, on island crests and at the fen edges. A site at Langwood Fen may have been a centre for regional administration and/or trade, possibly connected to the Hadrianic town site at Stonea Grange (just outside the LP area). The southern fen edge gravel terraces contain myriad Roman settlements, served by a complex network of new roads - such as the villa site at Fen Drayton. At Haddenham, a Romano-Celtic shrine was incorporated within a site of a Bronze Age barrow, suggesting continuity of ritual and ceremonial use. This, together with another shrine identified near Willingham, may have served the cluster of Roman sites on the gravel terraces near Over.

Salt-making sites dating from the Iron Age period have been found on silt-based soils along the fen edge, including at Denver and in profusion along the course of the Old Croft River. The Fen Causeway crossed the fen between Denver and March (from where it continued westwards to the fen edge at Peterborough); it originated in the deepest parts of the fen basin as a canal but was converted to an embanked road after the canal was prone to siltation.



The route of the Roman Fen Causeway is visible on the digital terrain model as a band of silt running broadly east – west across the fen between March and Denver. Red line is OWLP boundary; dotted line is county boundary. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

The Romans also constructed the Car Dyke, a canal system between the River Cam at Waterbeach and the River Witham at Lincoln, in the main defining the western edge of the fens. In the study area the Car Dyke forms part of the Old West River between Roman settlements at Bullock's Haste in Cottenham's Smithy Fen and the Upper Delphs at Haddenham, where it is buried as a palaeochannel beneath fen deposits. Beyond the Bedford Rivers its course is now the present day Cranbrook Drain that skirts the Colne Fen gravel pits to the north of Earith on their eastern side. Here an extensive major Roman centre was established supplanting the Iron Age settlements that preceded it. This was an inland port trading in marine and freshwater fish, pottery, agricultural produce and potentially imports from the Roman Empire, and had an associated settlement with an internal road system and shrines.



Routes of the two main Roman-period routes passing through the OWLP area: the Fen Causeway and the Car Dyke, joining at Peterborough en route to Lincoln. Both were part of a strategic and nationwide network of connecting routes. Reproduced with kind permission from Cambridgeshire County Council. © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

1.2.6 Saxon and Medieval Period

By 700 AD conditions had become much wetter, with flooding from both the sea and from inland waters. The south east part of the Fen Basin was engulfed by peat and the topography of the area began to resemble its current levels, but with areas of low lying peat fen submerged within a morass of marsh, bog, mud and mere. Early Saxon settlements often developed on or nearby abandoned Roman sites, but settlement generally expanded across the fen islands and on the fen edge gravels. Construction of the Sea Bank around the Wash during the Late Saxon period would have helped to prevent sea flooding and there is evidence that other river embankments and diversions may also have been implemented at this time.

In the Late Saxon/Medieval period the fen islands attracted reclusive Christian hermits, some of whom established religious cells which grew to become important monasteries. Monasteries were centres of learning and they acquired vast tracts of land in return for educating the children of noblemen. They established fisheries, implemented local drainage schemes and organised grazing on summer pastures which were accessed by drove roads. The monastery at Ely developed as a regional centre which owned almost the whole of the south east fen.

On the higher grounds, the medieval settlements were surrounded by open fields which were cultivated as strips. The strips were grouped into blocks called furlongs, each bounded by long soil banks which sometimes survive within the present day arable fields. On areas of silt (such as the Old Croft River) there was a denser pattern of enclosure, following the meander of the roddon. Medieval fen edge and fen island villages exploited a range of different types of soil including the fen, which was used for peat, wood and rushes (for fuel), sedge (for thatch) and grazing for livestock, as well as fish and wildfowl.

Other areas were reserved for common use. The fens fringing the higher ground were treated as common land, but access to its rich variety of wetland resources was strictly controlled by manorial law. The fenland meres were an important part of the medieval economy and were mostly controlled by the monasteries and abbeys, although local landlords also held rights over fishing, fowling and sedge cutting. The area was poor and land holdings were typically controlled by the manorial lord with tenants obliged to pay dues and undertake specific works for the lord in return for the right to work the land. Such works might include maintenance works on the dykes, lodes and causeways.

Hayward's 1604 map (below) shows the historic alignment of the West Water, which flowed north-west from Earith towards Ramsey. In the late 13th century a major cut had also been made between the River Ouse at Littleport and the Wash at King's Lynn, but these works caused excessive silting along the original course of the river and at the important port of Wisbech.

"An Exact Copy of the Fenns as it was taken Anno 1604 by William Hayward, carefully copy'd from ye Originall" – a 1727 copy by Payler-Smith. North is to right on this map. Reproduced by kind permission of Cambridgeshire Archives.

Away from the main rivers, a complex network of dykes and lodes provided a functional network of waterways for trade and communication between villages. The process of diverting and embanking

rivers and brooks continued in a piecemeal fashion, in order to protect and improve summer grazing. For instance, a 12km channel was cut from March to the Old Croft River to divert the waters of the River Ouse and improve the drainage of the siltlands to the north. Similarly some of the Ouse/West Water was diverted to join the River Cam to the south, with a diversion made to serve the cathedral city of Ely, as shown on Hayward's map.

1.2.7 Drainage history: creating the modern landscape

The modern Ouse Washes LP landscape is dominated by the two diversion channels of the Great River Ouse: the Old Bedford River and the New Bedford River, the latter known locally as the Hundred Foot. The creation of these channels in the 17th century and the drainage of the surrounding land resulted in the greatest change this landscape has seen to date. These channels are still strategically important in keeping the Fens drained.

Despite efforts of Anglo Saxon and medieval engineers, the Fen Basin was subject to a series of disastrous floods. The monastic landowners provided a degree of coordination and communal effort but, with the dissolution of the monasteries in 1539, landownership became more fragmented and the maintenance of drainage works and causeways was often neglected. Major floods in the 1570s and in 1603 led to calls for more effective drainage schemes.

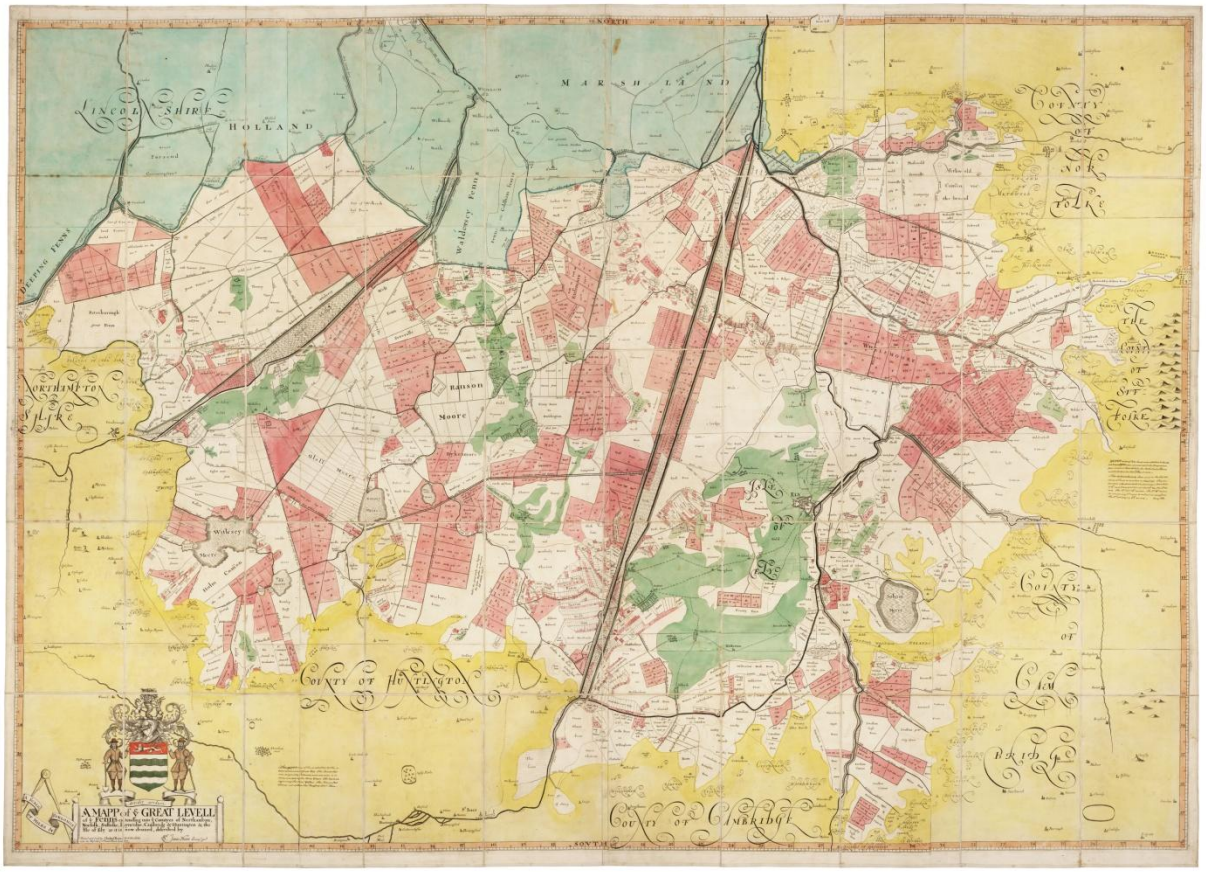
In 1634, King Charles I granted a charter of incorporation to the 4th Earl of Bedford and his co-Adventurers, to develop and implement a scheme to drain the whole of the Great Level. This was a visionary scheme, financed by Adventurers' investment, to create an agricultural plain from the watery marsh of the fens by. At the heart of the scheme the Earl of Bedford created a 70ft wide and 21 mile cut between Earith and Denver (The Old Bedford River), which diverted the waters of the River Great Ouse, where they left the higher land and entered the fen, and provided a shorter route to the sea. This scheme aimed to provide summer grazing land across the level, but with flooding allowed to occur during the winter months.

A second drainage scheme was more ambitious: this time the objective was to make the Great Level (later known as the 'Bedford Level') free of flooding all year round. The diversion from Earith to Salters Lode remained central to this scheme. The Dutch engineer Vermuyden was appointed; in the early 1650s, a second cut, the New Bedford River, was made parallel to the Old Bedford River and embanked. The banks of the Old Bedford River were raised and the pastures between these two artificial waterways became a vast linear washland, which allowed floodwater to be stored safely during the winter or any abnormally wet periods. Sluices controlled flows and allowed the release of water to scour the original channel of the Great Ouse to the north of Denver. This is the origin of the Ouse Washes.

The scale of the task was immense as all digging was done by hand, involving it has been calculated some 11,000 men. Difficulties in cash flow meant wages often went unpaid, and the Adventurers were grateful for the addition first of Scottish and then of Dutch prisoners of war to the labour force. In some areas (especially in the south level, drained last) there was strong resistance from the poorer inhabitants, deprived of their commons and the opportunities (wildfowl, fish, peat and sedge) which came from the undrained fen, drainage banks and other works were damaged and guards had to be set.

Most of the other major cuts and ditches that are part of the fen landscape today date from these mid-seventeenth century drainage schemes, including the Forty Foot Drain. Moore's c1658 map shows the Bedford Level with the principal drainage channels cut by the Bedford Corporation and the extent of the Adventurer's land (drained farmland acquired by those who had invested in

Vermuyden's works) in pink (see map below). The Bedford Level Corporation was established in 1663 following the General Draining Act that year, with the aim to maintain drainage & navigation on the Upper, Middle and South Levels.



"A Mapp of ye Great Levell of ye Fenns extending into ye countyes of Northampton, Norfolk, Suffolke, Lyncolne, Cambridge and Huntingdon and the Isle of Ely as it is now drained." A c1700 copy of the c1658 Jonas Moor map, showing the Bedford level with its principal drainage channels built by the Bedford Corporation and the location of Adventurers' land. Reproduced by kind permission of Wisbech & Fenland Museum/ Cambridgeshire Archives.

Vermuyden may not have anticipated the problems of peat shrinkage, which resulted in the surface level of the ground becoming progressively lower. The natural gradient of the land, together with the ability of the water to flow through the system of dykes, was lost; increased siltation in the lower rivers at the Wash ports also caused problems for water borne trade. Windmills were used to pump water from low level drains to the main (higher and embanked) rivers and drains, but the system was under pressure and major floods occurred at intervals, when the embankments were breached.

The use of private windmills proved to be problematic as pumping water on one field could cause a problem for neighbours. A coordinated system was required and, in 1726, a group of farmers at Haddenham formed their own drainage organisation. Other areas followed suit and eventually the internal drainage of the Bedford Level was managed by several local drainage boards, each responsible for pumping water from their designated areas into the main rivers and ditches (which remained under the overall management of the Bedford Level Corporation).

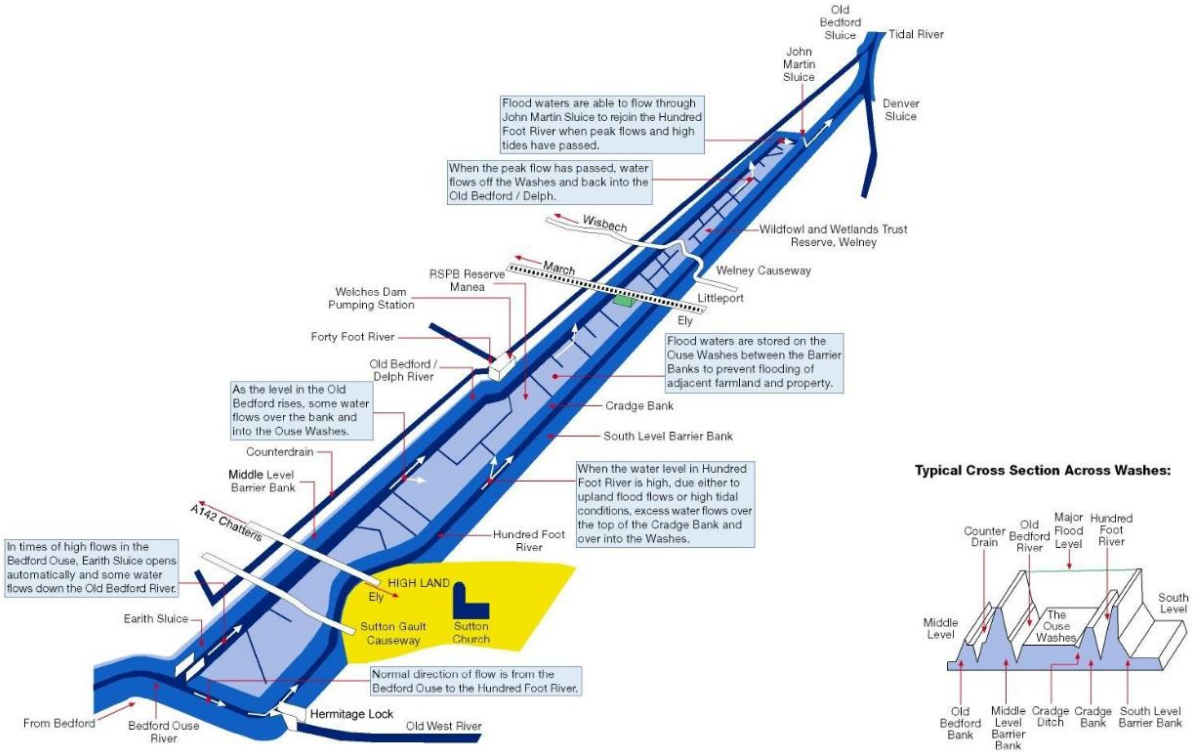
As the peat fen continued to shrink and fall, windmills were increasingly ineffective and, in 1817, steam pumps were introduced. A new cut (the Eau Bank Cut) at Kings Lynn carried the waters of the lower Great Ouse directly to the sea and created a stronger outfall which reduced silting upstream. A

similar scheme followed at Wisbech, together with further cuts to improve the flow of the Rivers Great Ouse (near Ely) and Nene. The combination of steam pumps and these later cuts proved to be effective and the fens gradually became a productive agricultural landscape, reasonably secure from the risk of flooding.

In 1930, the Bedford Level Corporation was replaced by the newly created Ouse Catchment Board, taking over responsibility for coordinating and managing drainage. Pumping stations with improved capacity were installed, but in 1947 an exceptionally wet winter again resulted in severe floods, with 1951 and 1953 seeing further floods. Embankments were raised, catchment drains dug and pumps improved. In addition, the Cut-off channel was dug between 1957 and 1964, collecting water from the rivers Wissey, Little Ouse and Lark and diverting this into the recently created Relief Channel, which resulted in a better flow out to sea than provided by the tidal Great Ouse. Interestingly, Vermuyden had already envisaged the need for a channel, which he showed on his 1642 plan, at roughly the same place where the Cut-off channel would be dug three centuries later.

1.2.8 The present and future landscape

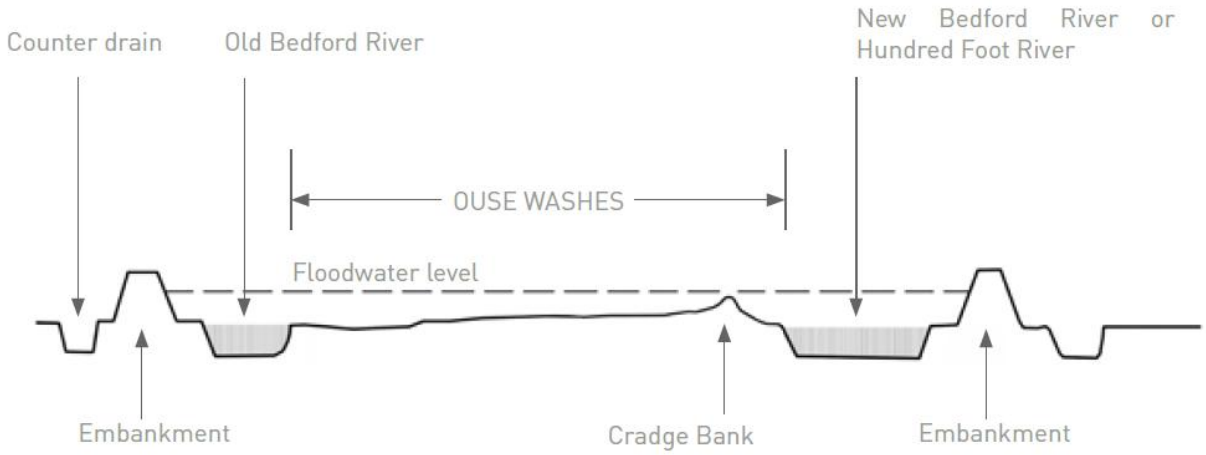
The Ouse Washes today remain a critically important part of the flood risk management system for the Great Ouse Catchment, to provide protection to the surrounding farmland and property. Responsibility for managing the complex drainage system lies with the Environment Agency, in close cooperation with the many Internal Drainage Boards.



Overview of the complex Ouse Washes water management system. From: Halcrow, for Environment Agency, 2002, Ouse Washes – Water Level Managament Plan, Figure 3 – Ouse Washes & Barrier Bank. Reproduced with kind permission from the Environment Agency.

The Washes are typically rich grazing pasture during summer and a flood reservoir at high river levels during the winter or during periods of heavy rainfall (see diagram below). In a typical winter 70-80 million m^3 of excess floodwater is diverted at Earith into the Washes. The seasonal variation is one of

the most distinctive features about the Ouse Washes and is instantly visible from local high points and crossing transport routes such as the Peterborough to Ely railway line.



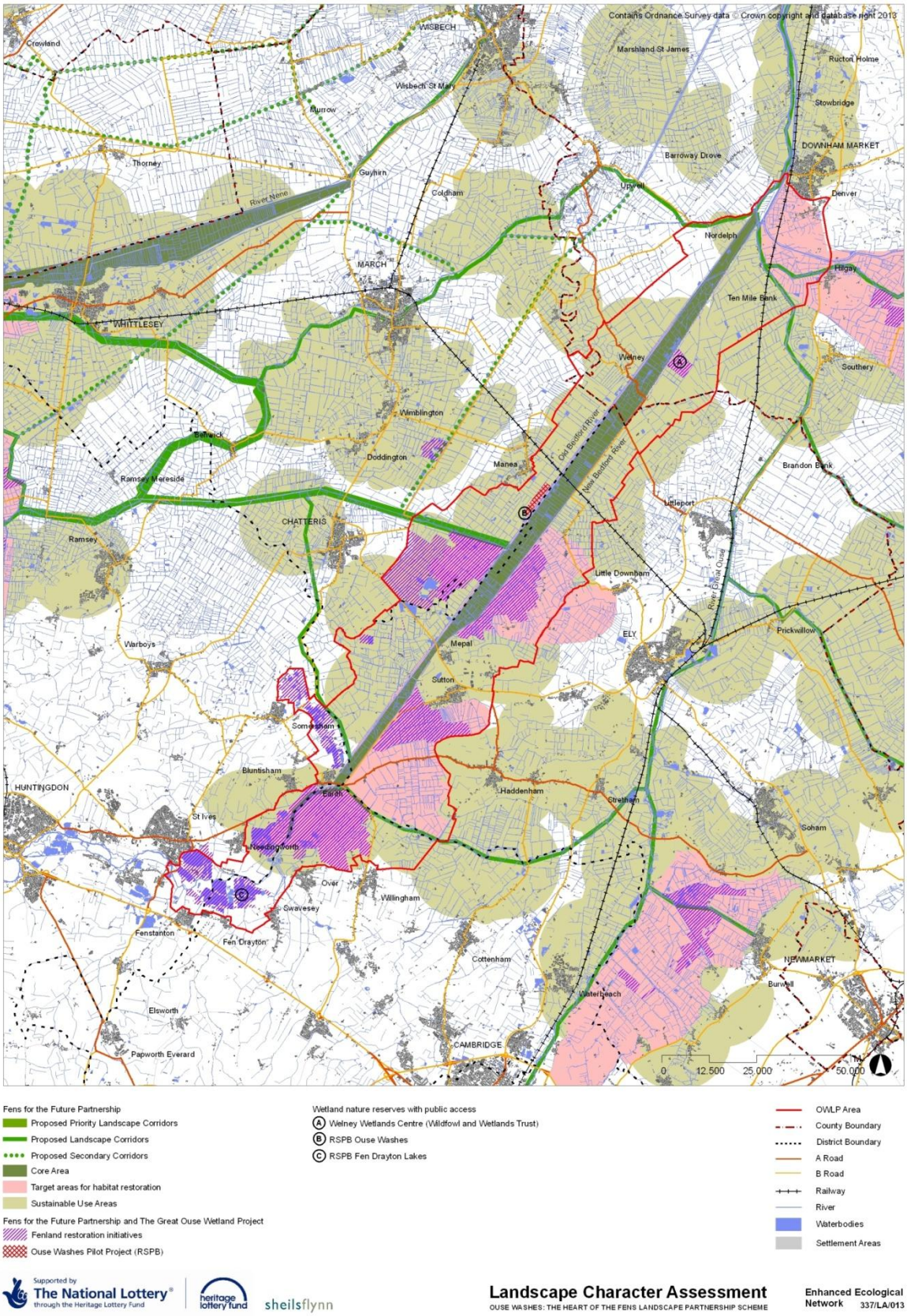
Cross section through the Ouse Washes, based on drawings in Taming the Flood, Jeremy Purseglove (1991) and The Black Fen, HJ Mason (1984). Image created by Sheils Flynn for OWLP.

Drainage since the 1600s has caused the loss of over 98% of the original Fenland wetlands and rare species are now confined to small, fragmented sites. Nevertheless, as a result of its unique history, the Ouse Washes have over the centuries become a valuable wildlife resource for waterfowl during the winter and as a breeding site during summer. The Ouse Washes area forms the largest example of 'washland' and one of the most important areas of lowland wet grassland in Britain: these washlands cover 2,500 ha of winter-flooded wet meadows. The international importance of the Ouse Washes is recognised through its designation as a Special Protection Area, Ramsar site and (in part) a Special Area of Conservation.

The OWLP area as a whole is now a UK area of importance for conservation action. The area contains the 'Great Ouse Wetland', a network of wetland nature reserves including the RSPB Ouse Washes, Ouse Fen and Fen Drayton Lakes reserves, and the WWT Welney Wetland Reserve; at 3,000 ha this forms one of the largest and most important wetlands in the UK.

The Fens for the Future Partnership aims to make the Fens one of the main UK landscape-scale wetland complexes by 2020, functioning within a matrix of sustainable agriculture. As part of the 'Great Ouse Wetland' Vision, ambitious plans are in place to enhance and strengthen the existing wetland habitats within the OWLP area: new fenland habitats are being created to encourage a number of high priority species including otter, water vole, bittern, bearded tit, marsh harrier, black-tailed godwit, fen violet and the swallowtail butterfly. Aggregates extraction, together with habitat replacement schemes following international obligations, provides exciting opportunities to recreate lost traditional fenland habitat in the area, including the following initiatives (see also map below):

- At Ouse Fen, following aggregates extraction, the RSPB and Hanson have worked together since 2003 to create a vast nature reserve with open water and grassland which, when completed, will contain the biggest reed bed in the UK;
- The Environment Agency aims to create new lowland wet grassland sites near Coveney and Sutton, to compensate for declining suitable habitat for internationally protected species within the Ouse Washes;
- Cambridgeshire County Council-instigated work is ongoing at Block Fen, west of Mepal, to create wetland habitats following aggregates extraction;
- New low wet grassland habitats has been created in former agricultural land to the east of the WWT Wetland Centre, as part of compensation for lost habitat due to coastal realignment programmes elsewhere in the East of England.



Key components of the enhanced ecological network as proposed by the Fens for the Future and the Great Ouse Wetland partnerships. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

Landscape History: Summary

The Fen landscape of the Ouse Washes LP area has seen dramatic changes over time, due to the constant changing patterns in marine and freshwater deposits, together with the dynamics of meandering rivers in the delta between the Fen edge and the outlets at the Wash. This has left a mosaic of silt, clay and peat deposits, in which human populations exploited the possibilities the landscape offered. Due to gradual wetting and infilling of the Fen Basin, settlement gradually retreated to the higher ground of the fen 'islands' and to the resource-rich Fen edges.

There is a rich archaeological heritage within the OWLP area with well-preserved ancient settlements and ritual monuments and a precious repository of waterlogged archaeological and palaeo-environmental remains. Within the area there have been clusters of activities, for instance extensive Bronze Age and Iron Age settlements and ritualistic sites on the Fen Bain edge in the Over – Haddenham area; and clusters of Roman sites along the Fen Causeway in the northern part of the area, around the former Old Croft River and along the Car Dyke in the southern part.

Intensive drainage was undertaken in the 17th century with the digging of the two diversion channels of the Great River Ouse, the Old Bedford River and the New Bedford River and the creation of the Ouse Washes within. This resulted in the greatest change this landscape has seen to date. The modern OWLP landscape is still dominated by this system with these channels being strategically important in keeping the Fens drained, as well as providing a valuable wildlife resource, forming the largest example of 'washland' and one of the most important areas of lowland wet grassland in Britain. As part of the 'Great Ouse Wetland' vision, ambitious plans are in place to enhance and strengthen the existing wetland habitats within the OWLP area, within a matrix of sustainable agriculture.

1.3 Description of the heritage that contribute to the distinctiveness of the LP landscape

1.3.1 Biodiversity: Rich, diverse and of international significance

The Great Ouse Wetland network

Both the State of Nature Report (2013) and the Millennium Ecosystem Assessment (2005) showed that wetland habitats and species have been rapidly declining. Nevertheless, habitat creation and restoration has led to an increase in numbers of some bird species such as the Bittern, showing that conservation work is essential to support the region's biodiversity.

Historic land use in the Fens has led to a depletion of wetland habitats and the Fen region has only a few remnant wetland habitats such as Wicken Fen, Holme Fen and Wood Walton Fen, all outside the OWLP landscape. Within the OWLP, the only semi-natural wetland habitats are those at the RSPB Fen Drayton Lakes and Ouse Fen reserves. Despite this, the Ouse Washes has been recognised as an important biodiversity 'hotspot' by the Fens Biodiversity Audit. A ditch biodiversity survey carried out as part of the OWLP's development phase highlighted that the arable landscape surrounding the wetlands is also important for many rare plant and water beetle species.

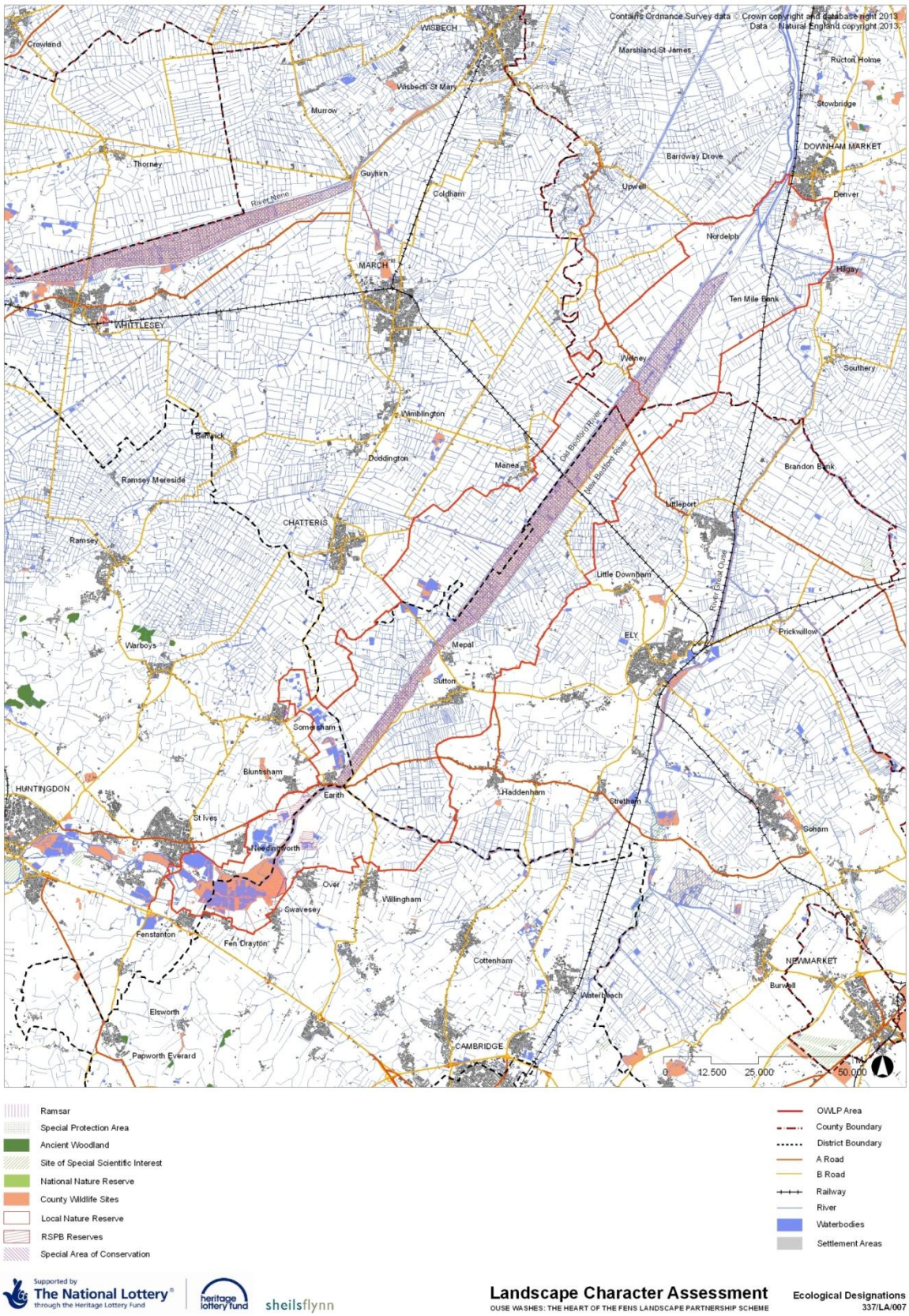
At 3,000ha the Great Ouse Wetland network is one of the most extensive and most important wetland areas in the UK. It comprises of a network of nature reserves, many of which are owned by nature conservation bodies, including the well-established WWT Welney and RSPB Ouse Washes nature reserves, and newer reserves such as the RSPB Fen Drayton Lakes and RSPB Ouse Fen, with further schemes planned including those to be created by the Environment Agency near Sutton and Coveney. The Great Ouse Wetland network - including its future expansion ambitions - lies fully within the boundaries of the OWLP landscape. Within the heart of this landscape is the Ouse Washes itself, one of the most important areas of lowland wet grassland in Britain.

Designations within the OWLP area

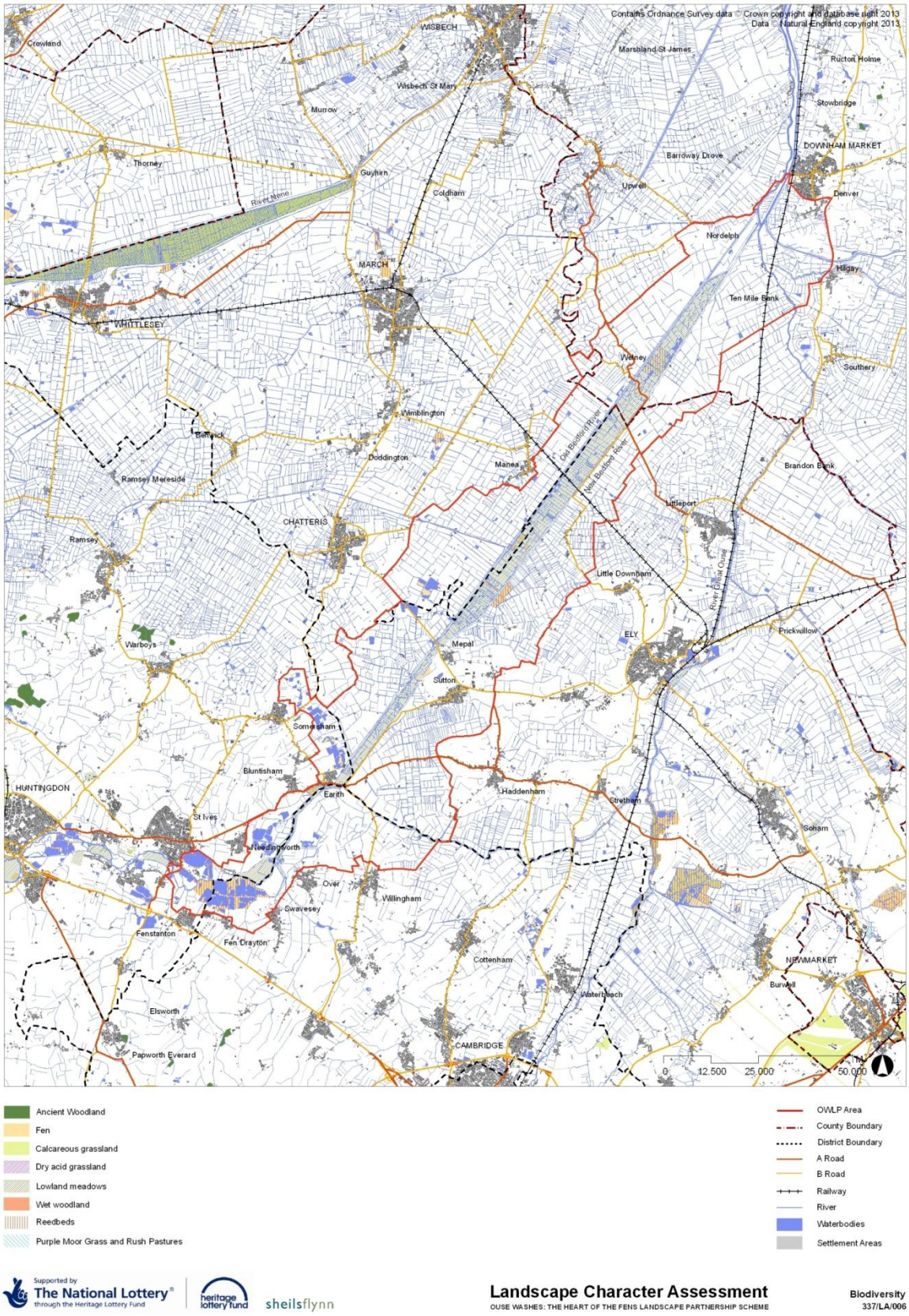
The OWLP area contains several designations, covering large tracts of the landscape:

Designation	Number and Area covered	Reason for designation
Ramsar	1 site 2,469 ha	The ecological value of the Ouse Washes.
Special Protection Areas (SPA)	1 site 2,447 ha	The seasonal wetlands and wet pastures within the Ouse Washes provide habitat for migratory birds (e.g. Bewick's Swan, Shoveler and Wigeon) and breeding waders (e.g. Spotted Crake and Black-tailed Godwit).
Special Area of Conservation (SAC)	1 site 311 ha	The presence of Spined loach populations along a strip of land along the western side of the Ouse Washes.
Site of Special Scientific Interest (SSSI)	23 land units throughout the OWLP area, totalling at 2,505 ha	The unique habitats throughout the area which support numerous unique and protected species.

County Wildlife Sites (CWS)	Manea Pit	5.3 ha	These sites have numerous lakes, reedbeds and meadows. These are especially important at Fen Drayton, near Earith/ Colne and to the south of St Ives. The riparian corridor of the river Great Ouse also has high biodiversity value.
	Bedlam Hill Pit	1 ha	
	Block Fen Gravel Pits	62 ha	
	Byall Fen Pumping Station Drains	3.9 ha	
	Denver Mill Meadow	6 ha	
	Fen Drayton Gravel Pits	363 ha	
	Forty Foot Drain (East)	[part of] 21.4 ha	
	Holywell Front Pollard Willows	26 ha	
	Hundred Foot Bank Swamp & Ditch	12.2 ha	
	Low Road Meadows-East	5 ha	
	Meadow Lane Gravel Pit	[part of] 133 ha	
	Mepal Gravel Pits	35 ha	
	Old Bedford Low Bank Drains	1.4 ha	
	Earith Gravel Pits	73 ha	
	Fen Drayton Gravel Pits	366 ha	
	Middle Fen	100 ha	
	Mare Fen	16.5 ha	
	River Great Ouse & associated habitats	[part of] 614 ha	
	Sluice Common	8 ha	
	Sutton & Mepal Pumping Station Drains	16.8 ha	
	The pond	1 ha	
	The Willows	3 ha	



Environmental designations in and around the OWLP area. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.



UK BAP priority habitats in and around the OWLP area. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

Significant habitats

The most significant and wide-spread habitats within the OWLP area consist of lowland meadow, reedbeds and fen.[1] These habitats and the surrounding farmland are connected by a series of wet ditches, field edges and hedgerows.

Lowland meadows

Lowland meadows are unimproved neutral grasslands in lowland landscapes. They are usually used to cut for hay or to graze livestock. The majority of the Ouse Washes consists of lowland meadows that are seasonally flooded. This habitat stretches from Nordelph to Earith with additional clusters around Needingworth. These habitats are also intersected by numerous ditches which are used to drain fields; these ditches have a unique biodiversity. Lowland meadow habitats are not widely distributed throughout the UK making the Ouse Washes an important washland site.

Reed beds

Case Study: The Hanson-RSPB wetland project at Ouse Fen

The Ouse Fen reserve. Images ©RSPB.

The Hanson-RSPB wetland project aims to create a wetland habitat in Needingworth alongside the Great Ouse River. Following their original planning permission for extraction in 1993, the RSPB have worked closely with Hanson Aggregates to design an alternative restoration proposal; this led to a new proposal in 1999 for a 700 ha wetland reserve with the creation of 32 km of new public access routes. The project received a Royal Town Planning Institute National Award for Planning Achievement (2000). It was also nominated for the 2002 European Planning Awards.

The RSPB Ouse Fen scheme aims to create England's biggest reedbed habitat with 460 ha, with the remainder of the reserve to include open mere, wet scrub and grassland. The habitat creation started in 2003 and closely follows extraction at Needingworth Quarry, one of the largest sand and gravel extraction sites in the UK; it has already created 160 ha of restored habitat. Since 2006, due to the expansion of the reedbed habitat, there has been a marked increase in the number of breeding birds, including Bitterns, Bearded tits and Marsh Harriers. The restoration of Needingworth quarry will add to the regional Great Ouse Wetland and Fens for the Future landscape visions. It will support habitats and assemblages that were once characteristic of the Fens and help to alleviate summer flooding in the Ouse Washes. Nationally, the project will contribute to the UK Biodiversity Action Plan targets for reedbeds and Bitterns.

[1] Habitat descriptions have been adapted from the UK Biodiversity Action Plan: Priority Habitat Descriptions.

Reedbed habitats are areas where the water table is at or above ground level for the majority of the year and the vegetation is dominated by Common reed. Reedbeds are amongst the most important UK habitats for birds and invertebrates. If left to function naturally, reedbeds eventually dry out and follow a succession pathway to shrubs and woodland. In the past, activities such as thatching and basket making helped prevent this process from happening; today, careful management ensures the continued improvement of reedbeds.

One of the main reedbed habitats in the OWLP area is at WWT Welney. The reserve is 1,000 acres in size and is essential for breeding populations of Black-tailed godwit, Snipe, and Yellow wagtail. Water voles and bats, both UK BAP species, are also found at Welney. There are also reedbed habitats between Needingworth and St Ives. The Hanson-RSPB wetland project at Ouse Fen which provides for wetland habitat creation following sand and gravel extraction will, once completed, provide for the largest extent of reedbed habitat in the UK (see case study below).

Fens

Fen habitats are areas of peatland that gain water and nutrients from groundwater, rocks and soil in addition to rainfall. The characteristics of Fen habitats are similar to reedbeds as the water table is close to or above the surface for the majority of the year. However, the ground surface is not waterlogged. Fen habitats can contain reeds, although they are usually shorter than their reedbed counterparts. Additionally, fen habitats typically contain grasses and sedges. These habitats support many wetland bird species and invertebrates.

There are several fen habitats scattered throughout the OWLP area. There is extensive fen habitat between Needingworth and St Ives, together with reedbeds. There is also fen habitat at Hilgay. This site is just beyond the OWLP boundary, but will form part of a proposed, large-scale habitat creation scheme coordinated by Norfolk Wildlife Trust also covering part of the OWLP area; consequently, this site may act as an important reservoir for species.

Significant species

The Fens are home to over 13,474 species, 305 (27%) of which are UK Biodiversity Action Plan priority species. The OWLP area contains habitats that are essential to maintaining these species.

Plants

The Ouse Washes supports many plant species such as rushes, sedges, reed canary grass, wild celery, meadowsweet, purple loosestrife and flowering rush. The Fen Drayton Lakes reserve, for instance, houses a good population of the rare Grass-poly, *Lythrum hyssopifolium*. A ditch biodiversity survey done for the scheme also noted several important aquatic plant species (see case study below).

Invertebrates

The lowland meadow habitats support numerous insects such as butterflies and moths as well as dragonflies and damselflies. The ditch biodiversity survey also highlighted that the OWLP ditches support many nationally scarce and near threatened aquatic Coleoptera species (see case study below).

Case Study: Ditch Biodiversity Survey in the OWLP area

Throughout the OWLP's arable landscape there are numerous ditches. They often have their own unique biodiversity, but their ecology is often poorly understood. A survey was commissioned by the OWLP during the development phase and was conducted by aquatic plant and invertebrate specialists Jonathan Graham and Martin Hammond. Due to the sensitivity of invertebrates to water quality, aquatic Coleoptera were chosen to determine the conservation value of the Ouse Washes ditches; aquatic plant species were also recorded for this purpose.

The Internal Drainage Board (IDB) Districts of Over & Willingham IDB, Bluntisham IDB, Haddenham Level Commissioners IDB, Sutton & Mepal IDB, Manea IDB and Upwell IDB were surveyed. Across 100 sample points, 109 drain plants, 110 bank plants and 101 water beetles were recorded. Amongst the finds were many species of conservation concern; amongst these were: 2 Near Threatened, 3 Vulnerable and 1 Nationally Scarce plant species whilst water beetles included 4 listed as Near Threatened and 14 categorised as Nationally Scarce. Ditches in the study area are shown to provide an important habitat for several species of aquatic Coleoptera which have their British stronghold in the Fens such as *Agabus undulatus*, *Hydrochus crenatus*, *Oulimnius major* and *O. rivularis*.

All 6 surveyed IDB areas had drains with quality ditch plant and Coleoptera indicator species, but ditches associated with gravel beds within the Over & Willingham, Bluntisham, Haddenham and Sutton & Mepal districts were found to be of particular importance. The Common Frog, Common Toad, Smooth Newt, dragonflies and BAP species such as Water Vole and Spined Loach were also regularly seen within the ditches whilst sampling.



Left: Dytiscus dimidiatus; Centre: Agabus undulatus; Right: One of the biodiversity-rich ditches in the OWLP area. Images: Jonathan Graham & Martin Hammond, for OWLP.

Birds

As the Ouse Washes is subject to seasonal flooding in winter, a wide range of wildfowl and wader bird species are present within the area. Within the RSPB Ouse Washes and WWT Welney reserves, red listed species such as the Black-tailed godwit are found alongside amber listed species such as the Garganey, Snipe and Wigeon (see case study below). The Ouse Fen RSPB reserve supports the red-listed Bittern, amber listed species such as the Barn owl, Little egret, Marsh harrier and Reed bunting as well as the green listed Great crested grebe. The RSPB Fen Drayton Lakes reserve supports the red listed Lapwing, amber listed species such as the Common tern and Gadwall, and green listed species such as the Coot and the Hobby.

There are numerous other bird species in the OWLP area such as the Amber listed Mallard, Pintail, Pochard, Gadwall, Shoveller, Smew, Goldeneye, Whooper and Bewick's Swans. Other waders such as the Redshank and Avocet are also located within the Ouse Washes and registered as Amber status; Ruff are also found within the Ouse Washes, listed as a Red status species.

Further species are supported within the region such as the Corn bunting, Turtle dove, Grey partridge, Lapwing, Yellow wagtail and Tree sparrow due to the wildlife-friendly agricultural practices that are undertaken as a part of Environmental Stewardship schemes and the Fenland Farmland Bird Recovery Project in the surrounding, mainly arable fields. The area also supports other avian BAP species such as Yellowhammer, Linnet, Reed bunting, Skylark and Barn owl.

Case Study: Black-tailed Godwits and Snipes at Lady Fen

Increasing frequency and duration of un-seasonal floods on the Ouse Washes during the last few decades have had a negative impact on both Black-tailed godwits and Snipe, albeit for different reasons. Black-tailed godwits are a red listed species which is globally threatened and declining severely in the UK. Their numbers have been declining as the rise in flooding events in spring and summer in the Ouse Washes, one of their few strongholds, has frequently washed away their nests. Although Snipe are less threatened than Black-tailed godwit with approximately 59,000 breeding pairs and amber-listed, their local population has nevertheless suffered over the past few years. Snipe are able to compensate for flooding when it comes to nesting as they can nest twice annually. They also have the ability to delay nesting should floods arise. However, their population is affected by the floods as high water levels wash away their main food source, invertebrates such as worms, with effects felt up to three years thereafter, reducing the Snipe population as there is not enough food to support them.

In 2006, the Environment Agency purchased 38 ha of former agricultural land at Lady Fen Farm, directly to the east of the WWT Welney Centre, in a bid to compensate for loss of Wigeon habitat to improved flood defence works on the Middle Level Barrier Bank. In 2007, WWT Welney started to manage the site, restoring it to a wet grassland habitat. Although originally intended to assist Wigeon populations, the resulting Lady Fen area started to attract numerous other birds, including Black-tailed godwit and Snipe. In recent years, up to five pairs of Black-tailed godwits have nested here, although few chicks have hatched. In addition, a third of breeding Snipes within the region have nested at Lady Fen in the past two years. During the winter of 2012/13 this area of land also provided vital roosting areas for swans whilst the Ouse Washes were under several feet of water.

Lady Fen has become an important habitat for supporting a range of bird species. The water levels can be controlled here; consequently, the tussock vegetation and soft mud required can be maintained. Additionally, Lady Fen is maintained so that there are no surrounding trees which are known to prevent some waders from breeding. There are also fox fences to prevent predation. Since the start of the project in 2007, bird numbers have continued to increase and, with ongoing management and improvement, they should continue to do so.


Left: Black-tailed Godwit © Chris Gomersall (RSPB-images.com); Right: Snipe ©Andy Hay (RSPB-images.com).

Lapwing ©Andy Hay (RSPB-images.com).

Mammals

Throughout the Ouse Washes, there are several UK BAP species such as water vole, otters and bats. Seals are also regularly encountered along the tidal waters, however they are not a UK BAP species or endangered. There have been numerous schemes put into place such as creating otter holts and installing bat boxes, plus an ongoing Mink-eradication programme helps the water vole populations in the area. These schemes have helped to maintain and in some cases increase populations throughout the OWLP area.

Watervole. ©Ben Hall (RSPB-images.com).

Fish

The European protected species the Spined loach (*Cobitis taenia*) can be found in the area. The critically endangered European eel is found throughout the Great Ouse and the New Bedford rivers. Just southeast of St. Ives is a particular stronghold for eels in the Chub stream. Water bodies in the region also support Stickleback, Chub and Barbel populations.

Spined Loach, found in one of the ditches surveyed in the Sutton & Mepal IDB area. Image: Jonathan Graham & Martin Hammond, for OWLP.

1.3.2 Archaeology: Rich, well-preserved and of international significance

There is a rich archaeological heritage in the OWLP area with well-preserved ancient settlements and ritual monuments. There are 18 Scheduled Monuments in the area (see table below), the majority consisting of prehistoric barrows which show clear clusters in the Over-Earith-Haddenham and Fenstanton – Fen Drayton areas, south of Sutton and around Block Fen. The majority of the monuments are, unfortunately, at risk from agricultural cultivation/ deep ploughing.

Scheduled Monument - Site type	Location	Risk	Current land use
Bowl barrow	Fen Drayton reservoir	Medium	Monument on reservoir island
'Castle Hill' earthworks	Swavesey	Medium	Grassland
Priory earthworks	Swavesey	Low	Grassland
3 x bowl barrows	Over	High	Arable
5 x bowl barrows	Over	High	Arable
Bowl barrow	Haddenham	High	Arable
2 x bowl barrows	Haddenham	High	Arable
3 x bowl barrows	Haddenham	High	Arable
Long barrow	Foulmire Fen	High	Arable
Oval and round barrow	Foulmire Fen	High	Arable
Round barrow	Haddenham	High	Arable
Long barrow	Sutton	High	Arable
Long barrow	Sutton	High	Arable
Bowl barrow	Chatteris	High	Arable
Bowl barrow	Block Fen	Low	Grassland under ELS
Barrow	Block Fen	Medium	Arable
Civil War earthwork & WW2 gun emplacement	Earith	Medium	Grassland; scrub encroachment
Moated site	Downham Market (SE of Denver Hall)	High	Grassland

Overview of Scheduled Monuments in the OWLP area. Information provided courtesy of English Heritage.

The patterns of human occupancy and usage of the landscape have changed over time with the dramatically changing landscape (Section 1.2). Besides the scheduled Monuments there are also numerous undesignated yet nationally significant archaeological sites in the area. There is especially rich and diverse wet- and dry land archaeology of prehistoric age - especially dating to the Bronze Age - and the Roman Period (see Section 1.1 and Sheils Flynn's Landscape Character Assessment for further details of archaeological sites in the area).

The fen deposits are known for their preservation qualities and enable the survival of organic remains such as wood, leather, plant and other palaeo-environmental remains, skin, and secondary products such as textiles, woven reed or rush mats, structural timbers and hurdle walling of houses or structural timbers of more industrial usage, withies, basketry, fish traps, boats, leather objects ranging from sword scabbards to buckets and book covers. It has been estimated that dry land archaeological sites, in contrast, might preserve only about 10-15% of their inhabitants' material objects and the structural evidence of the buildings that they occupied. The excellent preservation conditions in the often waterlogged sites provide the area with a unique archaeological and palaeo-environmental record. As such, the area's buried heritage provides good evidence for the reconstruction of prehistoric landscapes.

Excellent preservation of organic remains. Left: Wood, animal and human remains in an Iron Age settlement enclosure ditch at Barleycroft Plant Site, Needingworth Quarry. Right: Charred wooden remains of a Collared Urn phase (1800 - 1600BC) cremation funeral pyre. Images © Cambridge Archaeological Unit (J. Tabor and D. Webb).

One of the Early Bronze Age disc barrows in Hanson's Needingworth Quarry under excavation. The later fen deposits sealed the earthwork that had been constructed on a low lying terrace of the prehistoric Great Ouse river system. Image © K. Gdaniec, Cambridgeshire County Council

Clusters of Bronze Age burial mounds, ring ditches, post alignments and enclosures at the fen edge near Over and Willingham, at Honey Hill, Chatteris and on the fen islands near Haddenham - both within and directly around the OWLP area - indicate locations of significant settlements which were the centre for ceremonial activities. Extensive archaeological excavation works carried out in advance of aggregates extraction in the Somersham – Earith area and at Needingworth Quarry ('Ouse Fen') located on the gravel terraces along the edge of the Fen Basin have, in addition, revealed a range of sites used for funerary and ceremonial activities, dating to the Neolithic, Bronze Age and Iron Age. The research has shown that the area was part of an extensive and major ceremonial Bronze Age landscape of national significance (see case study below).

Case Study: Buried Bronze Age landscape around Over

The below map from Cambridgeshire's Historic Environment Record (CHER) shows that the Ouse Valley Wetlands Landscape Character Area has a relatively dense concentration of archaeological sites and finds from the Palaeolithic through to post-medieval times.

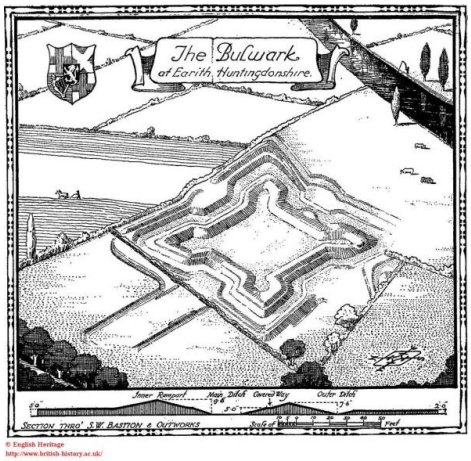
Finds dating from the Iron Age period and later are generally on the edge of the present day fen, close to the existing settlements that are clustered around the margins of the Ouse Valley. However, finds from the Bronze Age and earlier periods are sited close to the course of the River Great Ouse. The terraces of the (then) heavily braided river channel have an exceptionally rich concentration of prehistoric finds, including a Neolithic causewayed enclosure and a major prehistoric barrow cemetery with groups of round barrows.

The importance of the area as a source of sand and gravel has led to extensive quarrying, which has provided the opportunity to excavate and record the prehistoric landscape, providing a fascinating insight into the rituals associated with the barrow cemetery site, which was part of a major ceremonial landscape, extending right across the floor of the Great Ouse valley.

Data taken from the Historic Environment Record for the Ouse Valley Wetlands Landscape Character Area, showing a relatively dense concentration of archaeological sites and finds from the Palaeolithic through to post-medieval times. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

Roman period sites are also well represented in the southern part of the OWLP area, particularly around the Car Dyke. In addition, salt-making sites dating from the Iron Age and Roman periods have been found in the northern part of the OWLP area, around the Fen Causeway Roman canal and road system and along the course of the Old Croft River and its earlier roddons (see also Section 1.2).

Case Study: Earith Bulwark



Left: The well-preserved earthworks of the Earith Bulwark. Image Kite Aerial Photography © Bill Blake Heritage Documentation. Right: reconstruction of Earith Bulwark ©English Heritage; taken from 'Bluntisham cum Earith', An Inventory of the Historical Monuments in Huntingdonshire (1926), pp. 17-23; http://www.british-history.ac.uk/report.aspx?compid=123746 Date accessed: 16 October 2013.

In 1642, differences between Charles I and Parliament had become so great that Civil War between those supporting the king and those who supported Parliament became inevitable. The East of England was a parliamentarian stronghold but the Royalists had made inroads into Lincolnshire. There was also a Royalist rebellion in the Isle of Ely in May 1643 that was suppressed by troops from Cambridge; this highlighted to the Parliamentarians the need to bolster defences. It is thought that the bulwark at Earith was constructed around this time. The location at 'The Hermitage' (the river crossing at Earith) was strategically important as it was one of the main access points to the Fens and towards Ely. When the bulwark was constructed, the Ouse Washes did not exist: at this time the Old Bedford River had been dug (1631) but the New Bedford would not be started until the end of the 1640s.

The fort was a square enclosure with diagonal defensive bastions at the corners, surrounded by a rampart 3 ft. wide at the top. On the outside the bank dropped down into a moat, which was surrounded by an outer bank that follows the line of the inner rampart. To the west of the fort is an open enclosure which may have functioned as an entrance or a corral for the cavalry. The design of the bulwark is very similar to designs found on the continent: the bulwark's shape suggests strong Dutch influences and may have been the work of the engineers Richard Clamp and Captain John Hopes.

The bulwark also has an interesting World War 2 history that highlights its strategic position. It contains an 'Allan Williams' turret that housed an anti-aircraft gun or rifle that would have been manned by the Home Guard. Very few of these survive today as they commanded good scrap value at the end of the war. Also on the site is a spigot mortar mount that was used by the home guard for mounting a 'Blacker Bombard' anti-tank mortar.

The Earith bulwark is one of the best preserved Civil War fortifications in the country, although flooding of the Ouse Washes has caused limited erosion. It has been a scheduled Monument since 1926 with the schedule later amended to include the WW2 remains. It is situated on privately-owned land, although public footpaths pass close to the site.

Important archaeological remains from later periods include medieval fish ponds near Welney and the Civil War Bulwark at Earith, one of the best-preserved earthworks of its kind nationwide (see case study above).

1.3.3 Built Heritage: Hidden gems

Settlements in the OWLP area are characterised by relatively small rural villages, isolated farmsteads or dispersed ribbon settlements along roads and at road junctions and along the edge of the Ouse Washes. There is a great variety in domestic architecture, often displaying a combination of elegant Georgian brick houses and bland 20th century bungalows, with the materials used often showing differences in the local geology (Section 1.1; see also Sheils Flynn's Landscape Character Assessment).

Several settlements within the OWLP area contain designated Conservation Areas; these are Nordelph (West Norfolk & King's Lynn BC); Sutton-in-the-isle and Witcham (East Cambridgeshire DC); Holywell (south Cambridgeshire) and Earith (Huntingdonshire DC). Several of the surrounding villages also contain conservation areas of note, most of which are in the southern part of the OWLP area: Fen Drayton; Swavesey; Over and Willingham (South Cambridgeshire DC); Fenstanton; Earith; Bluntisham; Somersham; St Ives and Hemingfords (Huntingdonshire DC); and Downham Market (West Norfolk & King's Lynn BC).

There are relatively few Listed Buildings in most parts of the OWLP area. In stark contrast to this there are several dense clusters of Listed Buildings in the southern part of the area, in Holywell-cum-Needingworth and Earith, as well as villages directly abutting the OWLP area, such as Fenstanton, Fen Drayton, Swavesey, Over and Bluntisham. A further cluster can be found in Denver at the northern end of the OWLP area (including Denver Hall and Denver Mill, both at II*, with the latter recently declared 'At Risk').

Left: House in Fen Drayton thought to be associated with Vermuyden; Source: National Education Network, http://gallery.nen.gov.uk/assets/0902/0000/0070/c1_fen_drayton_dutch_house.jpg; Middle: Fortrey's Hall, ©Diana Bray, http://s0.geograph.org.uk/photos/45/85/458535_ec983d08.jpg; Right: Cottages at Welches Dam, including the Lock Keeper Cottage on the left.

An interesting link with the area's drainage history can be found in the inscription above a doorway of a house in Fen Drayton which says "Niet Zonder Arbyt" ('*Not Without Labour*'). It is thought that Vermuyden was associated with this house, this being Vermuyden's family's motto. The same motto also appears on South Cambridgeshire's crest, the only Dutch motto in British civic heraldry. A further connection with the original, 17th century Adventurers can be found in Fortrey's Hall, an impressive building along Engine Bank, near Mepal; this house was built by Samuel Fortrey (d.1719) as possibly an addition to an earlier building erected by his father Samuel Fortrey during the draining

of the Bedford levels, as is described in a plaque in Mepal Parish Church. Another building of note along the Ouse Washes is Lock Keeper Cottage at Welches Dam.

The OWLP area used to contain many public houses, in particular near river crossings and other strategic places along the waterways and in the villages: in 1830 there were still 16 pubs alongside the Ouse Washes alone. Many have since been lost, but some characterful ones are still functioning, including the Lamb & Flag near the Welney Causeway, the Three Pickerels at Mepal Bridge, The Anchor Inn at Sutton Gault, Ye Olde Ferry Boat Inn in Holywell and the Pike & Eel in Needingworth. The latter two were next to river crossings over the River Great Ouse, which were originally both served by ferries (linking with Fen Drayton and Overcote, respectively). There were other ferries across the Ouse Washes as well, for instance at Mepal: John Waters was the last ferry man here, until 1930 when the viaduct was built (he is buried in the local churchyard).

Public houses were also closely associated with local harbours, for instance the important inland harbour at Swavesey. A large settlement since Saxon times, there was already a port in Swavesey by 1177. It gained further importance when the right to hold a market and fair was granted in 1244: a dock was formed at the end of the market and which remained active until Enclosure, from 1838-40. A new dock was built north of the village at the same time, though its usefulness was short-lived as the Cambridge – St Ives Railway was built alongside it in 1847; this railway closed to passengers in 1970, but reopened in the 2000s as the Guided Busway. Although their function as docks had ceased, the docks on Market Street Green and at Swan Pond continued to be used to water cattle and carters' horses in the early 20th century.

The OWLP area contains some fine church buildings. Nine of these are medieval parish churches, the majority dating from around the 13th century. They were built to serve the needs of the ancient settlements which grew up on areas of higher ground above the waterlogged Fen Basin. These include the parish churches of Holywell-cum-Needingworth, Swavesey, Over and Bluntisham (all Grade I Listed Buildings) which are located in the Ouse Valley on the southern fringes of the Fen Basin. Their proximity to the River Ouse facilitated the transport of Barnack stone for use in their construction. This valuable building material was much sought after and was used in the building of both Peterborough and Ely Cathedrals.

A second cluster of medieval churches occurs in the fen island parishes of Sutton, Witcham, Coveney and Mepal (all Grade I except Mepal which is Grade II*). Apart from Sutton, these churches are relatively modest buildings, constructed predominately from fieldstone with limestone dressings. The remaining medieval church is at Denver, situated on the outcrop of sandstone that occurs at the northern edge of the area. Built using locally sourced Norfolk carrstone, this 13th century church is a Grade II* building. Also built of carrstone and carrying a Grade II* listing, the parish church at Welney was constructed in 1848 in anticipation of Welney becoming a separate parish which finally took place in 1862. Prior to that it had been part of the parish of Upwell and the new church replaced a brick built chapel on the same site.

The 19th century witnessed the building of many churches and chapels in the area by the established church and non-conformist denominations alike. Few are still used as places of worship but a remarkable survivor from this period is the Grade II church at Ten Mile Bank, an early example of Gothic Revival in Tractarian tradition (see case study below).

Case study: St Mark's Church (Grade II), Ten Mile Bank

St Mark's stands on the west bank of the River Great Ouse, a short distance north of the Hilgay Bridge. Built in 1846-47 it served as a chapel of ease within the parish of Hilgay and was consecrated in 1852. The church which seats 150 people is built of Gault brick with a slate roof on a simple rectangular plan. It is influenced by the Early English Gothic with triple lancet windows at the east and west ends, and simple lancets on the side walls. Its extreme simplicity indicates the influence of the Tractarian principles of the Oxford Movement in the mid 19th century. The original furnishings remain, with fine poppyhead pew ends and 17th century balustraded communion rails – possibly re-located from Hilgay church. The luxuriant foliage and grand design of the font which was installed in 1852 is strangely at odds with the simplicity of the rest of the building.

St Mark's was built to serve the needs of the growing population of Ten Mile Bank which is two miles from the medieval parish church in Hilgay. It may also have been built to counteract the ascendancy of the two Methodist chapels already open close by – the Wesleyan chapel in Ten Mile Bank opposite the river crossing and a Primitive Methodist chapel on the east bank. The first steam engine drainage pump constructed at Ten Mile Bank in 1819/20, followed by a larger engine in 1842 led to the land being easier to cultivate and a consequent arrival of more farm labourers. The church's construction also coincided with the opening of Hilgay Fen station in 1847 which was a mile from the church and provided easy access to King's Lynn and Cambridge.

An awareness of the difficulty of building on water-logged ground is demonstrated by the use of a suspended floor with rose-shaped cast iron vents to provide under-floor ventilation. However, water-logged conditions led to an ongoing struggle with subsidence. Significant alterations were carried out in 1934 to alleviate subsidence to the west end of the church. In 2002 the condition of the church was so serious that it would have been closed had it not been for substantial local fundraising and grants from English Heritage and the National Churches Trust; the church was restored and re-dedicated by Bishop Anthony on St Mark's day, 25th April 2009.

The War Memorial (Grade II listed) commemorates 22 men killed in WWI and 7 during WWII. In 2001, the names of two men were added killed in less well remember conflicts: one was killed in Malaya in 1946 and one during the Korean War in 1952.

Left: Font in St Mark's. Right: Old photo of St Mark's, displayed in church.

1.3.4 Military Heritage: More hidden gems

In the seventeenth century, Manea was one of the sites where Charles I was planning to build a new town surrounding a new summer residence, to be called Charlemont. The Civil War ended his dreams, with the Parliamentarians obtaining a particular stronghold in this part of the Ferns. The most significant remains of the Cromwellian period are in the shape of the Bulwark in Earith, now nestled between the two Bedford Rivers (see earlier case study).

Several remains from the WWII period can still be found in the OWLP area, including several pillboxes and Spigot Mortar Emplacements. Most notably was the construction and use of the RAF base at Mepal, which has seen a colourful history, both during WWII and during the Cold War in the 1950s when the base was chosen as one of the sites to house Thor missiles (see case study above).

Case Study: Mepal Airfield during WWII and the Cold War

Mepal Airfield in 1943. Image reproduced with kind permission from the Mepal Community Archive Groups, as published on the Cambridgeshire Community Archive Network website.

During World War 2 Mepal Airfield was an "expansion" airfield; it opened in April 1943 and functioned as a sub-station for 33 Base in Waterbeach along with Witchford as part of No.3 Group Bomber command.

The New Zealanders of 75 Squadron were the first operational occupants of Mepal Airfield in June 1943 flying Stirlings initially and then Lancasters. They provided support for the D Day invasion and carried out many bombing missions; the last bombing mission took off from Mepal on 24th April 1945 to raid on Bad Oldersloe. From the 29th of April to 8th of May 1945 Operation Manna was launched from Mepal which involved 126 sorties to drop supplies to the Dutch in Western Holland; a truce was arranged with the German commander to allow the mission to take place safely.

At the end of the war 75 (NZ) Sqn were involved in the repatriation of prisoners of war. They also flew 'sightseeing' sorties over Germany for the ground crew and 'Baedecker' sorties to assess the effective of the bombing offensive. Belgium refugees were also taken home and by the end of May 1945 a total of 2,339 POWs had been repatriated by 75 Sqn Lancasters. In July 1946 the last Lancaster left Mepal.

In 1957 a proposal from the USA was put to Britain to deploy Thor Intermediate Range Ballistic Missiles in the UK, with a final agreement on the deployment of Thor Missiles in Britain reached at the Bermuda Conference in March 1957 where Eisenhower met Britain's Prime Minister Harold Macmillan. Project Emily was then born and twenty sites were chosen to house the new missiles.

Construction started at Mepal in 1958 and the site was declared operational in 22nd July 1959 with the reformed 113 Strategic Missile (SM) Squadron.

When the order came to launch, it would take up to 15 minutes to get the missiles ready and the sequence needed the authority of both the British and Americans. The missiles were only put on a high state of readiness once, during the Cuban missile Crisis of October 1962. Thor missile deployment ended in 1963 when the US deployed its Atlas Intercontinental Ballistic Missile, and the RAF's own 'V Force' had the Blue Steel standoff weapon launched from Valiant, Victor and Vulcan bombers.

There is little obvious evidence left of both the WW2 and Cold War heritage of Mepal airfield but there are some interesting relics. Part of the runways and perimeter track are still visible on the Sutton side of the A142. Many of the buildings and access roads to the airfield's domestic site can still be seen around Witcham with the sewage works built for the airfield still in use today. The Thor missile bases where broken up before the straw burning power station was built but part of the southern base can still be seen.

1.3.5 Drainage & Waterways Engineering Heritage: Vitally important nationally

Engineering works associated with drainage and flood prevention have been and continue to be vital for protecting the agricultural land and property in the OWLP area. Before the introduction of steam engines in the 19th century, there would have been tens of windpumps in the area to drain away water; none survive but the only working wooden windpump remaining in the Fens, now housed at nearby Wicken Fen, gives an impression of what has been lost in the landscape.

There are nevertheless a large number of engineering works associated with the management of the waterways in the OWLP landscape, together showing that this is truly a man-made, engineered and fully managed landscape. Besides the numerous straight ditches, canals and embankments, these include pumping stations, sluices and locks. Most notable, providing vital functions within the Ouse Washes system are the following;

- Hermitage Lock at Earith: here, the water from the Great Ouse River/ Bedford Ouse is diverted northwards into the Hundred Foot River/ New Bedford River, with a small flow to continue eastwards along what is now called the Old West River;

- Earith Sluice: here, excess water which the Hundred Foot River and Old West Rivers cannot hold is allowed to enter the Old Bedford River, which then flows onto the Ouse Washes;

- Welmore Lake Sluice (also known as John Martin Sluice): here, the water from the Ouse Washes is drained back into the tidal New Bedford River (see case study below);

- Denver Sluice Complex: This complex of sluices is at the confluence of five watercourses, with the waters from the Ely Ouse, the New Bedford the Cut of Channel, Relief Channel and Tidal River coming together (see case study below).

Case Study: The Welmore Lake Sluice and its role in water management

The Welmore Lake Sluice, also known as the John Martin Sluice, at Welmore Lake is located at the most northerly part of the Ouse Washes flood storage area, at the point where the River Delph joins the New Bedford River. It can be accessed via a bridleway from Salter's Lode.

The sluice plays a vital role in the control of water on the Ouse Washes. As levels rise in the Old Bedford/River Delph above certain levels, water is allowed to flow onto the Ouse Washes. This water spreads northwards across the washes and is held back by the sluice. Water is discharged by gravity through the sluice when levels in the Old Bedford/Delph are higher than in the New Bedford River. In spring, gravity drainage is sometimes not sufficient to attain the desired water level. When this happens an electrically powered pumping station, opened in 2010, is put into operation to pump the remaining surplus downstream of the sluice. The second role of the sluice is to stop tidal surges from the Tidal River entering the washes. This saline water would have an adverse environmental impact.

The current sluice, completed in 1999, was named after John Martin, a local landowner who has played an important role in water management in the area. It has three sets of tidal mitre gates and has a 50% greater discharge capacity than the previous 1933 sluice. The old sluice was located 70 metres upstream of the outfall into the tidal river, which led to silt building up in front of the gates and stopping them from opening. To reduce the build-up of silt the current sluice is positioned closer to the tidal river and is also fitted with silt jetting equipment.

However, in spite of these measures, the frequency, duration and depth of flooding on the Ouse Washes is increasing, causing problems for both people and the environment, such as flooding of the A1101 at Welney and shortage of breeding grounds for wading birds. There are multiple reasons for this increase in flooding. One factor is the large amount of silt in the tidal river, which creates higher riverbed levels, resulting in higher water levels. This reduces gravity drainage from the Ouse Washes, thereby causing water to drain more slowly than it did in the past. In the future, rising sea levels caused by climate change, combined with an increase in storm surges, are likely to make it more and more difficult to drain water off the washes, and so the problem of flooding is likely to increase. The Environment Agency is responsible for managing this issue, but it is far from easy. Dredging to remove the silt is one option, but this is very expensive and isn't a long term solution as silt quickly re-accumulates.

Case Study: The Denver Sluice Complex

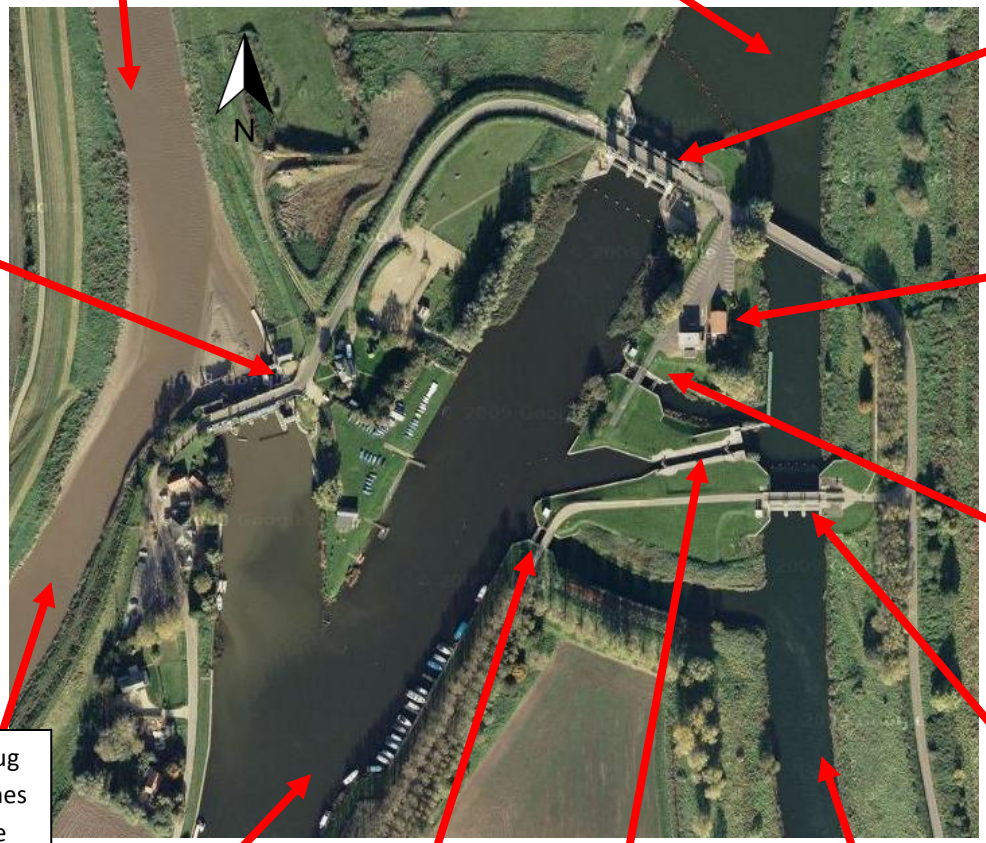
Located at Denver, this sluice complex is amongst the largest in the UK.

The **Denver Sluice** consists of the 'Big Eye' (left), the 'Little Eyes' (middle) and the Navigation Lock (right). The Big Eye was constructed to allow the passage of large commercial craft, but is now redundant. The Little Eyes are 3 separate sluices that discharge water from the Ely Ouse into the Tidal River. Siltation immediately downstream of the sluice, as seen on the aerial map, can be a problem as it reduces the ability of water to be discharged by gravity and restricts navigation. Prior to the installation of silt jetting equipment in 2009 silt could even stop the V-doors from opening. The original sluice was proposed by Vermuyden and built in 1651. Over the years it has collapsed, been rebuilt and refurbished multiple times. The basis for the current sluice dates from 1834.

The **Tidal River** transports water to The Wash.

The **Flood Relief Channel** was dug in 1954-59 following the disastrous 1947 and 1953 floods. It provides a second route to discharge water so as to reduce flooding upstream. It runs parallel to the Tidal River before rejoining it via the Tail Sluice at King's Lynn.

The **AG Wright Sluice** discharges water from the Ely Ouse into the Flood Relief Channel.



The Denver **control building and operator's bungalow**: The complex is manned 24/7 by two full-time Environment Agency operators, both living on site. Their main job is to monitor water levels and adjust the sluices accordingly, taking into account variables such as rainfall, river flows, wind speed/direction and tidal variations.

The **Residual Flow Sluice** is part of the water transfer scheme to Essex and releases the necessary flows to maintain water quality in the Relief Channel up to King's Lynn.

The Impounding Sluice reverses the direction of flow in the Flood Relief Cut Off Channel as part of the Ely Ouse to Essex Transfer Scheme (completed in 1971), whereby water can be transported to supply reservoirs in Essex.

Relief Channel Lock

The **New Bedford or Hundred Foot River** was dug by Vermuyden in 1652 as part of the Ouse Washes creation. Water flows into this channel from the Bedford Ouse. It is tidal all the way to Brownshill Staunch, upstream of Earith.

The **Ely Ouse / Ten Mile River** combines water from the Rivers Cam, Lark, Little Ouse and Wissey.

The **Diversion Sluice** is part of the water transfer scheme to Essex and releases water from the Ely Ouse into the Cut Off Channel.

The **Cut Off Channel** diverts excess water from the Rivers Wissey, Little Ouse and Lark around the edge of the Fens and into the Relief Channel. It was dug between 1954 and 1964, but remarkably Vermuyden's plans show a similar proposal 3 centuries earlier.

1.3.6 Scientific Associations: An intriguing and largely unknown history

Not only is the OWLP of national significance for the extent of drainage engineering, other less-known scientific initiatives and experiments have also taken place here, showing that this is a landscape of major science and engineering projects, having benefitted from the proximity of the internationally renowned research at Cambridge.

The landscape has been used for some amazing social, economic and environmental experiments including the Flat Earth Society using the long, straight and flat landscape Bedford River features to try and prove that the earth is disc-shaped; the 19th century 'Utopian' social living experiment at Colony Farm in Manea; and the hovertrain experimental track near Earith (see case study below). Much of this rich heritage is unknown or unexplored.

Case Study: The Hovertrain experiments

The hovercraft is mounted on its track. Image from the 1980s, reproduced with kind permission from Cambridge News.

Professor Eric Laithwaite was working at The University of Manchester and developed the Linear Induction Motor (LIM). By 1961 he had built a small demonstration system consisting of a 20-foot-long LIM reaction plate with a four-wheeled cart and seat on top. In 1962 he started consulting with British Rail on the idea of using LIMs for high-speed trains.

Due to his frustration at the lack of funding Laithwaite left British Rail in 1967 and joined Tracked Hovercraft Ltd as a consultant. During this period the French were also developing a similar concept called 'The Aérotrain'; Laithwaite managed to secure £2 million of funding at this point after persuading the government that they were about to lose out on the burgeoning field of high-speed transit.

Construction started on a test track in the early seventies with the first section of the track running alongside the Old Bedford River between Earith and Sutton Gault. The original plan was to build 20 miles of track running all the way to Denver although there were only funds for the first 4 miles - spiralling costs then limited this to just a 1 mile section, with the track consisting of a concrete box section about 1.8 metres above the ground.

On 7th February 1973, RTV 31 (the designation for the 'hovertrain') attained a speed of 104 mph on the 1 mile section of track with a 20 mph headwind. This was heavily publicised and footage was shown on the BBC news.

By the time construction started on Tracked Hovercraft's test track, British Rail was well advanced on their plans for the steel-wheeled Advanced Passenger Train (APT). Their December 1971 report strongly favoured APT.

Only a week after the successful test run the RTV31 project was cancelled by the government; Michael Heseltine, the Minister responsible at the time, thought the project too costly and stated that there was no prospect of a system being installed until 1985. The UK could have had the first high-speed train in the world, and it all happened along the Ouse Washes!

RTV 31 ended up being stored outside Cranfield University for 20 years before being transferred to Railworld museum in Peterborough where it remains to this day. All that remains of the track today are the concrete foundations where the track ran across 'The Gullet'. The original 'hangar' that housed the RTV 31 is still at Earith and is now used by an engineering firm.

1.3.7 Historic People: Endless captivating stories

Many famous people are associated with the OWLP area, not least those who played an important role in the ambitious 17th century drainage schemes and the Civil War period: King Charles I; Francis Russell, 4th Earl of Bedford; Cornelius Vermuyden; and Oliver Cromwell. There are several other colourful and powerful figures amongst the 17th century Adventurers who invested in the drainage schemes.

Less famous, but equally significant in shaping the landscape are the Prisoners of War: Scottish and Dutch PoW were digging the channels in the 17th century, and German and Italian PoW worked the land during WWII. Similarly, waves of migrants have all left their mark on the landscape and influenced the local heritage.

There have also been numerous other local people who became famous nationally; amongst these are the local skating heroes, in particular during the late 19th and early 20th centuries, when skating on ice in the Fens was a very popular sport and international races were held in the OWLP area. There are numerous fascinating stories about prominent local people, such as that of Revd Richard Taylor (see case study).

Case study: Torn asunder – Revd Richard Taylor and the fenland parish of Coveney

Coveney was typical of many fen edge and fen island parishes. The high ground of the island provided the location for the main settlement and year-round agriculture, and was combined with a hinterland of fen marshland. The church was built on the highest point of the island. Originally a simple rectangular structure erected in first half of the 13th century, a porch and the first two stages of the tower were added during the following century. The tower was completed in the 15th century and no further significant changes took place for 400 years.

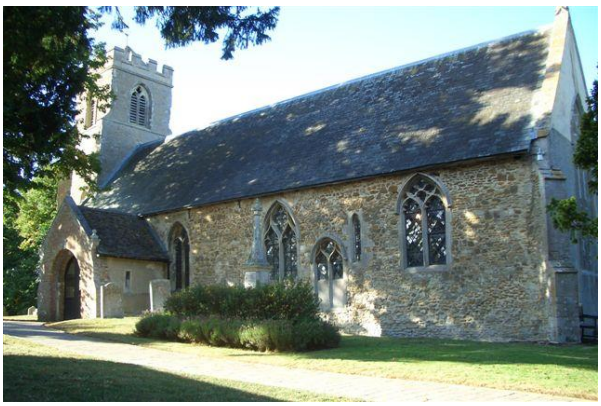
The fen hinterland extended some 5 miles northwards to include the low-lying island of Manea. Initially, this land was not reliably dry all year round, but did provide valuable summer grazing. Gradually, with lowering sea levels and some improvement in drainage, a small settlement became established. Communication was straightforward. A waterway ran from edge of Coveney Island to Downham Hythe. From there, the Ox Lode crossed the fen to Manea before linking up with other waterways around Chatteris.

The ambitious drainage schemes of the 17th century cared nothing for such ancient water highways. The digging of the two Bedford Rivers severed the Ox Lode rendering it useless and cut the ancient parish of Coveney in half.

Something of the inconvenience this caused can be gleaned from the journal of the Revd Richard Taylor who was Curate of Coveney in the 1830s. He records frequent journeys to minister to his parishioners in Manea which involved crossing the New Bedford river by boat, walking half a mile across the washes, crossing the Old Bedford river and then walking a further two miles to Manea.

Returning on one occasion late in the evening, he discovered the ferryman had gone to bed and spent almost an hour trying to raise him from the far bank. Then as now, the washes were frequently flooded and in February 1833 Taylor records taking a funeral in Manea and finding the water in the washes more than 3 feet deep at the shallowest point. That, together with the wind 'rendered the passage very stormy'.

Richard Taylor left Coveney in 1836 to go as a missionary to New Zealand where he was subsequently involved in drawing up the Treaty of Waitangi. He had been a strong advocate for separate pastoral provision for the two halves of Coveney parish. Eventually, with the breakup of the ancient manorial estates in 1883, Manea became a parish in its own right thus formalising the division which the Ouse Washes had created some two centuries earlier.



The Church of St Peter ad Vincula, Coveney. Image reproduced with kind permission from Peter Taylor.

1.3.8 Artistic, Cultural and Intangible Heritage: Strong local connections

The open and predominantly empty OWLP landscape means different things to different people: some can find it monotonous or intimidating whereas others find it exhilarating and value its quietness, extensive vistas, huge open skies and strong seasonal variation. The Fenland area has certainly inspired many writers, poets and naturalists including well-known people as Edward Storey, John Clare, Charles Kingsley, Graham Swift, Sir Peter Scott and Professor David Bellamy, who wrote:

"*The Fens are one of my favourite 'head just above water' landscapes... a place to get away from it all. A place to go to dream about the marsh-men and their methods of fishing and wildfowling all rooted in those rich soils"*.

William Harrison, the Fen poet who was born on Pymoor Hill, worked for drainage boards in the 1840s and wrote a poem which is now displayed on the Hundred Foot Pumping Engine, displaying the Fen people's innate fear of and struggle against the water:

The Fens have oft-times by water drowned,
Science a remedy in water found;
The power of steam she said, shall be employ'd
And the Destroyer by itself destroyed.

From 1880 until about 1930 a colony of artists lived and worked in the riverside villages around St Ives; their presence and work transformed both the local and national appreciation of the place. They painted the pretty village and river views around St Ives as well as the wide vistas of the Ouse as it enters the open fen landscape beyond Holywell. The Norris Museum at St Ives has a fine collection of these paintings. When the railways brought the Victorian public into the countryside, the Great Ouse area was also discovered by travel writers and acclaimed as a 'beauty spot', and from then on the Hemingfords, Houghton & Wyton and Holywell are mentioned as charming, riverside villages in just about every local and national guide-book.

As a result of agricultural intensification and dramatic changes in society as a whole, traditional usage of the land has changed in the 20th century. In the process, traditional land and water management skills have been lost, although local people still have a strong connection with and are passionate about the land, farming and traditional ways of living.

Left: Workers from the Harrison family coppicing osier willows on Holt Island on the Great Ouse in St Ives. This was one of many locations up and down the river where willow was grown commercially for the basket-making business J. Harrison & Son founded by John Harrison in 1877. Image © Harrison family/Charlotte Jordan. Right: Molly Dancers on the bridge at Welney. Photo courtesy of Norfolk Our World Festivals Ltd.

Until well into the 20th century there were extensive fruit growing areas, for instance around Earith, Bluntisham, Over and Willingham. The majority of these orchards have disappeared, but some old orchards remain in use. There were once also many osier beds, with the willow used in particular for basket making. Eel fishing, once widespread, has now nearly vanished, although Peter Carter keeps the tradition alive: he is Fenland's only remaining eel catcher who still catches eels by traditional means, using his own willow traps. The fenland area also has a rich heritage relating to horses and horse keeping, especially the heavy horse which has played a very important role in farming.

Folklore and local traditions abound in the region. Molly dancing, very alive in the area and sharing this tradition with a wider area in East Anglia, was performed by farm-workers on Plough Monday, the first Monday after Epiphany, or Twelfth Night after Christmas, highlighting the start of the agricultural year. On this day, agricultural workers decorated a plough and pushed it round the village, calling at the houses of the well-off villagers to beg for money, to help them get through the difficult winter period. Morris dancing groups also still herald May Day, and many villages hold a summer Feast Week either before or after harvest. There are also many local stories about bog monsters and other fen creatures. Furthermore, painful events such as the 1947 Floods are engrained in local communities' communal consciousness (see case study below).

Case Study: the 1947 Floods

After heavy rainfall in October, November and December 1946, a very cold and harsh winter set in. Above average snowfall with hard frosts resulted by the end of February 1947 in deep snow and frozen watercourses throughout the Fens and its catchment area. When it eventually started thawing in March, heavy rain added to the rising surface water. This, together with high tides and storms resulted in various banks being breached and agricultural land and settlements flooded, with the southern Fens hit particularly hard. In total, 34 of England's counties were affected by these floods.

The Army, assisted by German Prisoners of War and locals tried to plug the gaps in the banks but this took some time to accomplish. During the floods, local man Walter Martin Lane took many pictures, providing us with a magnificent collection of one of the most damaging floods in the area in living memory and of the many brave people involved in this event. The extensive Martin Lane Photograph collection will be digitised and made publicly available as part of one of the OWLP scheme's projects, to commemorate this major event in the Ouse washes 70 years ago in 2017.

One of Martin lane's images, showing a submerged farm bungalow (Palmer's Farm) during the 1947 floods. Photo courtesy of Lorna Delanoy.

The heritage that contributes to the distinctiveness of the LP landscape: Summary

This section provides an overview of the different types of heritage within the OWLP heritage, which provide the area its distinctive feel and which give local people a 'sense of place', together demonstrating the OWLP's strong heritage significance.

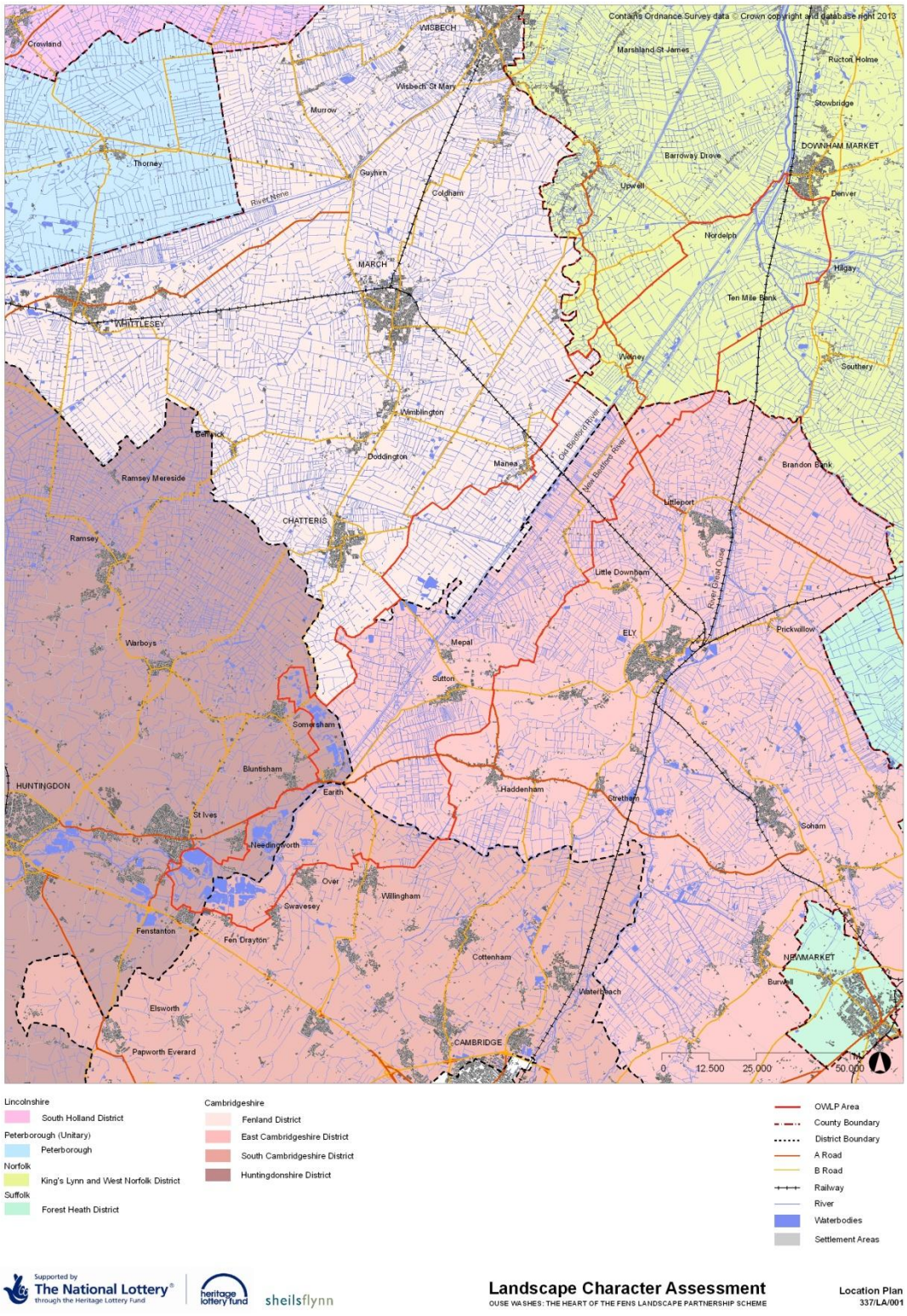
The area's rich and diverse biodiversity is of international significance, with the Great Ouse Wetland being one of the UK's most extensive network of wetland habitats. Equally significant are the area's archaeology and palaeo-environmental deposits with ample evidence for an extensive Bronze Age ceremonial landscape. The many drainage & waterways engineering heritage features are also of vital importance nationally.

The area, furthermore, contains many hidden gems, for instance historic buildings such as the local churches and the history surrounding the Mepal airfield. The OWLP area is also associated with intriguing and largely unknown scientific experiments, such as the hovertrain tests.

Many nationally important people are associated with the OWLP landscape. In addition, stories about local people and heroes abound, providing us with endless captivating stories. Strong local connections also show through the area's artistic, cultural and intangible heritage.

1.4 Context: Landscape Partnership scheme boundary and population demographics

1.4.1 The OWLP landscape area



Extent of the OWLP area: a linear landscape stretched across five Districts and two counties. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

The Ouse Washes: The Heart of the Fens Landscape Partnership scheme focuses on a linear area cutting through the Cambridgeshire peat fen and the Norfolk silt fen. The landscape area covers a total of 243 km^2 and stretches for 48.5km between Denver at the northern end and Fen Drayton Lakes to the south. The vast majority of the OWLP landscape is below the 5 m contour line. This is a distinct landscape, with a unique history, linear waterways, significant wetlands and which plays an important role in food production, drainage and flood prevention.

At the centre of the OWLP area is the distinctive, 32 km long feature of the Ouse Washes, with the key wetland habitats and reserves belonging to RSPB, WTBCN and WWT tucked in between the two parallel Old and New Bedford Rivers. At the southern end the boundary extends into South Cambridgeshire and Huntingdonshire to incorporate the important RSPB wetland reserves of Ouse Fen and Fen Drayton Lakes. The Ouse Washes SAC/SPA/Ramsar site consists of the UK's most extensive area of washland which is internationally important for the large populations of birds which feed on it in winter; in summer the rich grazing pasture is traditionally managed by hay cutting and cattle grazing. Together with the other wetland reserves in the area, the Ouse Washes cover over 3,000 ha and constitute one of the UK's most important wetland areas, the 'Great Ouse Wetland' network, sitting proudly in the 'heart' of the Fens.

The Ouse Washes LP area also includes a wide strip of low-lying agricultural land and several small communities surrounding the central wetland landscape features. Despite being relatively close to several growing population centres including Cambridge and Huntingdon, the OWLP landscape is rural and tranquil and contains highly productive, low-lying agricultural land. The landscape itself is largely devoid of settlements, although a necklace of small communities surrounds the central landscape features, acting as 'gateways' to this landscape. The natural and built heritage is inextricably linked, with the position of settlements and previous livelihoods and pastimes of local residents telling the historic and cultural story of the Ouse Washes. Its unique sense of tradition and place is beautifully summarised by the writer Graham Swift, "*The Fens as a landscape is the product of its people just as the people themselves are shaped by the land*." It is an area that links the richness of the past with the possibilities of the future.

Despite its tranquil appearance, this area and the communities within and around it face numerous challenges ranging from climate change, risk of flooding, need for irrigation, demographic changes, deprivation and a lack of a coordinated tourism offer (Section 3). The international significance of the area for wildlife, its unique history and heritage, combined with the range of challenges this area faces are the primary reasons why the partnership focuses on this distinctive Fen landscape.

1.4.2 Justification for the boundary chosen for the OWLP area

The Landscape Character Assessment and the Audience & Access work have focused on drawing a new boundary, one which is driven by the landscape, shaped by the fen basin and that reflects the dry land edge.

The new boundary surrounds a coherent landscape using topographic margins that denote the sphere of influence of the Ouse Washes and which are understood by local communities. In the process of redrawing the boundary of this difficult linear landscape, the landscape area increased from 199 to a permitted 243 km^2.

The primary criteria used to define the OWLP boundary are:

- The scatter of settlements on the areas of higher land and relatively well drained soils that fringe the low-lying fen surrounding the Bedford Level that was the focus of the Ouse Washes drainage scheme.

- The 'territory' associated with these fen Isle villages, including for instance historic field patterns, droveways and outlying farmsteads which together describe historic patterns of land use and the present-day sense of community in this part of the Fens.

- The alignment of roads and causewayed tracks which connect the villages and which form a loose ring around the Ouse Washes.

- Recent wetland and fen restoration projects and opportunities for new wetlands as part of the Great Ouse Wetland and Fens Wetland Vision projects, which contribute to the international value of the Ouse Washes and have the potential to provide superb opportunities for public access, recreation and environmental education.

The above are more fully justified accordingly:

Gateways to the landscape: historic landscape pattern and land use

The boundary of the OWLP area has been drawn with reference to the historic relationship between fen, farm and settlements, which in turn respond to subtle variations in the topography of the land and the underlying soils and relict morphological features within the Fen Basin. Settlements developed on 'islands' of higher land in an otherwise expansive and historically marshy landscape. The most productive arable fields were concentrated on the more elevated, relatively well-drained land surrounding the villages, with pasture on seasonally water-logged meadows. The marshy fenlands, which covered vast areas of the Fen Basin, were an important economic resource, used for cutting peat, reeds and sedge and to provide a constant supply of wildfowl, fish and eels. Although much of it fell under the ownership of various landowners and local abbeys, the fen was also a common resource, used by all the surrounding settlements.

The Ouse Washes were created at the low-lying centre of the Bedford Levels in response to a need to manage the lower reaches of the major rivers flowing into the fen basin from the Midlands, where they routinely overflowed and backed up, flooding the land and creating stagnant water conditions. The washes are a linear man-made feature, defined by a pair of canalised, managed rivers which cut across the local landscape character areas that surround it. The historic relationship between the fen and its adjacent settlements was disrupted by the creation of the Ouse Washes, but the pattern of historic land uses can still be traced in the landscape today through the arrangement of fields and early drainage dykes, the alignment of drove roads and the siting of farmsteads. It has informed the definition of local landscape character areas within the vicinity of the Ouse Washes.

There are no views into the Ouse Washes as the washlands are 'hidden' behind their enclosing embankments but there is a strong sense of territory and a perceived association between individual settlements and their surrounding areas of fenland (now arable fields) and outlying farmsteads.

Gateways to the landscape: settlements and hinterland

The 'area of search' for the OWLP boundary covers the land between the roads and villages that surround the Ouse Washes. This area extends from Denver on the sandstone edge of the Fen Basin to the north, southwards to the broad vale of waterlogged fen and river gravels that developed where the River Ouse flowed into the Fen Basin to the south-west of St Ives. Its eastern and western limits are defined by the roads linking the villages on the' Fen Isles' which developed on the fringe of

higher land surrounding the low-lying marsh at the centre of the Bedford Levels. Together, these villages and the roads that link them, define the hinterland of the Ouse Washes. They act as the gateways to the washlands, controlling the approaches to the Ouse Washes and the way they are perceived by residents and visitors alike.

To the west of the washlands, the Fen Isles take the form of a long, linear ridge of slightly higher land which stretches from West End to Chatteris to Manea and Stonea. The B1098 is aligned along the ridge, which runs broadly parallel to the Ouse Washes. The minor roads along the edge of this ridge, and a similar lobe of higher land between Lake's End and Nordelph, define the natural hinterland of the Ouse Washes to the west.

To the east the hinterland is less easy to define because the higher land is broken into a series of separate Fen Isles. Here the OWLP boundary follows the roads connecting the settlements that are close to the Ouse Washes and which also define the subtle local ridgelines of the Fen Isles nearby. From north to south the sequence of Fen Isle villages is Denver, Fordham, Ten Mile Bank, Coveney, Witcham, Sutton and Aldreth. The roads and tracks connecting the Fen Isle villages are often named as causeways; for instance, the historic Aldreth Causeway was an important route between Cambridge and the Isle of Ely on the south side.

To the south the LP boundary is easily defined because the historic fenland is ringed by villages, each sited on the higher land surrounding the fen with drove roads leading onto the marshy common land. On historic, pre-drainage maps, the majority of this area is also referred to as 'fens'; but is now a wetland of restored gravel pits. The OWLP boundary is drawn to follow the local roads that connect the historic village centres of Willingham, Over, Swavesey, Fen Drayton, Fenstanton and Holywell. It skirts around the margins of the larger Fen Basin edge towns of St Ives, to the south and Downham Market, to the north.

Extract from the 1604 Hayward Map, which illustrates the historic relationship between fen edge settlements and their common fen in the southern part of the OWLP landscape. Willingham Mere and the lodes connecting the villages with the River Ouse are also shown. Reproduced by kind permission of Cambridgeshire Archives.

The OWLP boundary incorporates productive arable farmland and the remnant fenland landscapes of Willingham Mere, an ancient freshwater lake that formed during the later prehistoric period, swelling to maximum extents in the Roman and Medieval periods. A local wetland asset, it was also an important flood defence and collection pond for the villages of Willingham and Over during the 1600s but was drained by the 1720s following the early success of the newly created fen drainage system of the Bedford Rivers.

Mineral extraction is also a key feature of the LP area, former gravel pits enabling the development of a flagship fen restoration project, the Great Ouse Wetland project. The new wetlands, reedbeds and opportunities for public recreation following sand and gravel extraction at Ouse Fen, Mare Fen, Block Fen, Langwood Fen and Colne Fen, together with the existing restored wetlands in the lower Ouse Valley at Fen Drayton and the proposed replacement Ouse Washes wet grassland habitat near Coveney and Sutton will form a network of fenland wetland sites that will create one of the largest and most important wetlands in the UK. These sites and, on a larger scale, the Fens Wetland Vision, will extend and diversify the range of inter-connected habitats and form an outstanding example of large landscape scale conservation.

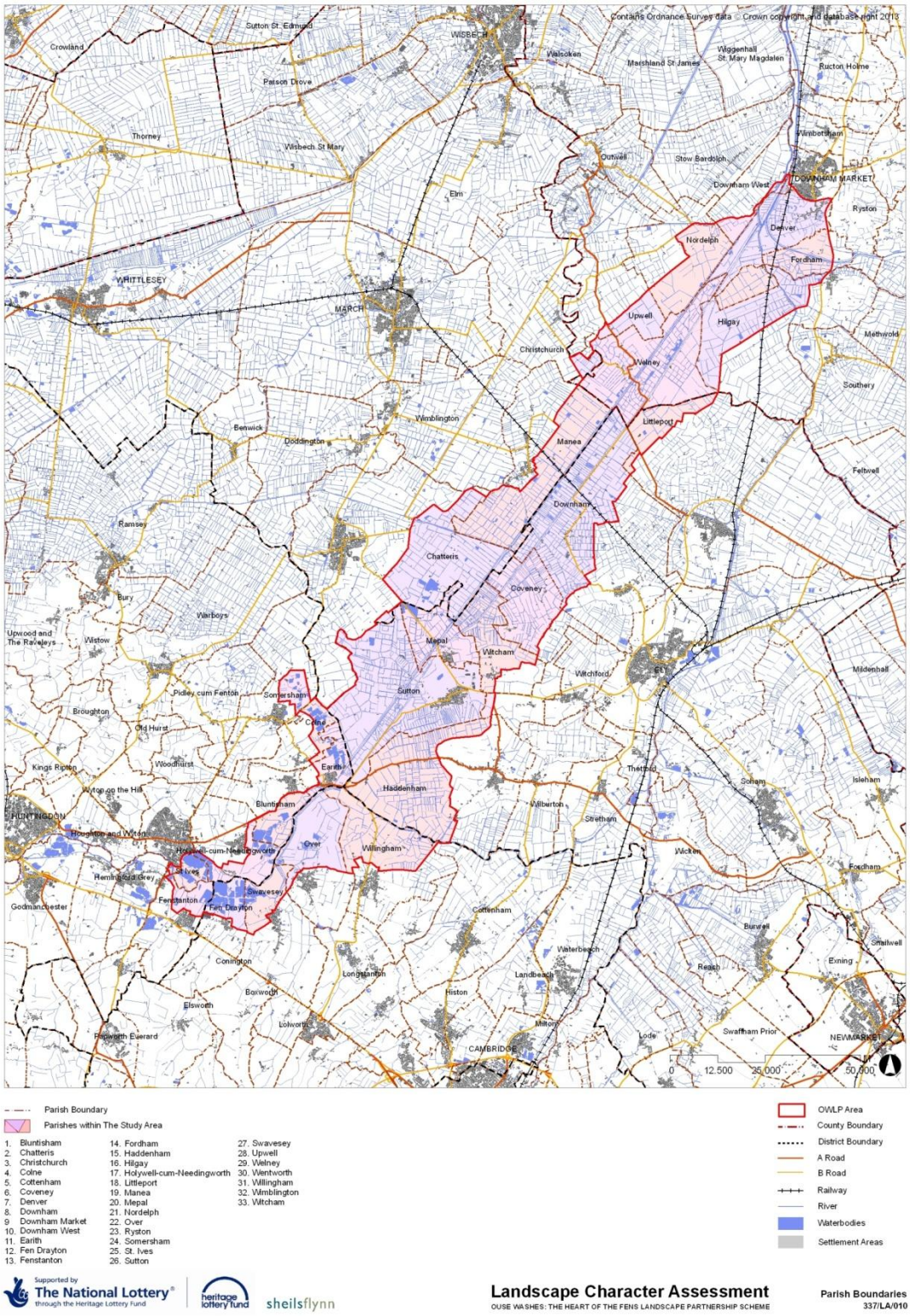
Community input into shaping the new boundary

As part of the Audience & Access planning work, local communities have been consulted on the landscape boundary and how they felt about this landscape. Many had trouble visualising the coherence and extent of the OWLP area without the aid of photos and maps. In general those in the south were very unclear about how far the Ouse Washes stretched north and *vice versa*. Once maps were shown and explanations were given about the historic development and modern wetland creation schemes, the majority asked had no queries with the boundary. The use of roads, field boundaries, ditches and parish boundaries was also accepted as a method of defining the boundary limits, as this linked closely with the way communities related to their surroundings, focusing on local landmarks and features.

It appeared that most people never thought of this landscape as a separate, coherent entity as this has never been presented to them in this format, but certainly reacted positively to the suggestion. People also usually did not necessarily consider themselves to be connected to all communities along the OWLP area. With information provided and maps used to demonstrate the OWLP area, people were, nevertheless open to the idea of this being a logically cohesive landscape. Those consulted also saw the creation of the OW landscape as possibly enabling future social interaction and cohesion between the villages.

1.4.3 Demographics

The Ouse Washes LP area covers (parts of) two Counties (Cambridgeshire and Norfolk), five different District Councils (Kings Lynn & West Norfolk, Fenland, East Cambridgeshire, Huntingdonshire and South Cambridgeshire) and 29 parishes (see below map).



The OWLP area, showing the boundaries of the 29 Parishes covering the area. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

The OWLP area contains 25 villages which are either fully or partially within, or directly abutting the area's boundary. In Norfolk these are Denver, Salters Lode, Fordham, Nordelph, Ten Mile Bank,

Welney, Tipps End and Lakes End. The Cambridgeshire settlements are Manea, Pymoor, Wardy Hill, Coveney, Witcham, Mepal, Sutton, Earith, Aldreth, Over, Swavesey, Fen Drayton, Holywell, Needingworth, Bluntisham, Colne and Somersham. Close by are also the settlements of Hemingford Grey, Willingham, Haddenham and Little Downham (Cambridgeshire) and Hilgay (Norfolk).
The resident population of the LP area is 33,010. A roughly equal proportion of the population is either aged over 65 years (17.0%) or are children under 16 years (17.5%). 95.1% of the residents are white British.

Outside the Ouse Washes LP area the neighbouring towns within a c10km zone are Downham Market, Littleport, Ely, Chatteris, March, St Ives, Huntingdon and Cambridge; they have a collective resident population of 236,688.

1.4.4 Socio-economics and deprivation data

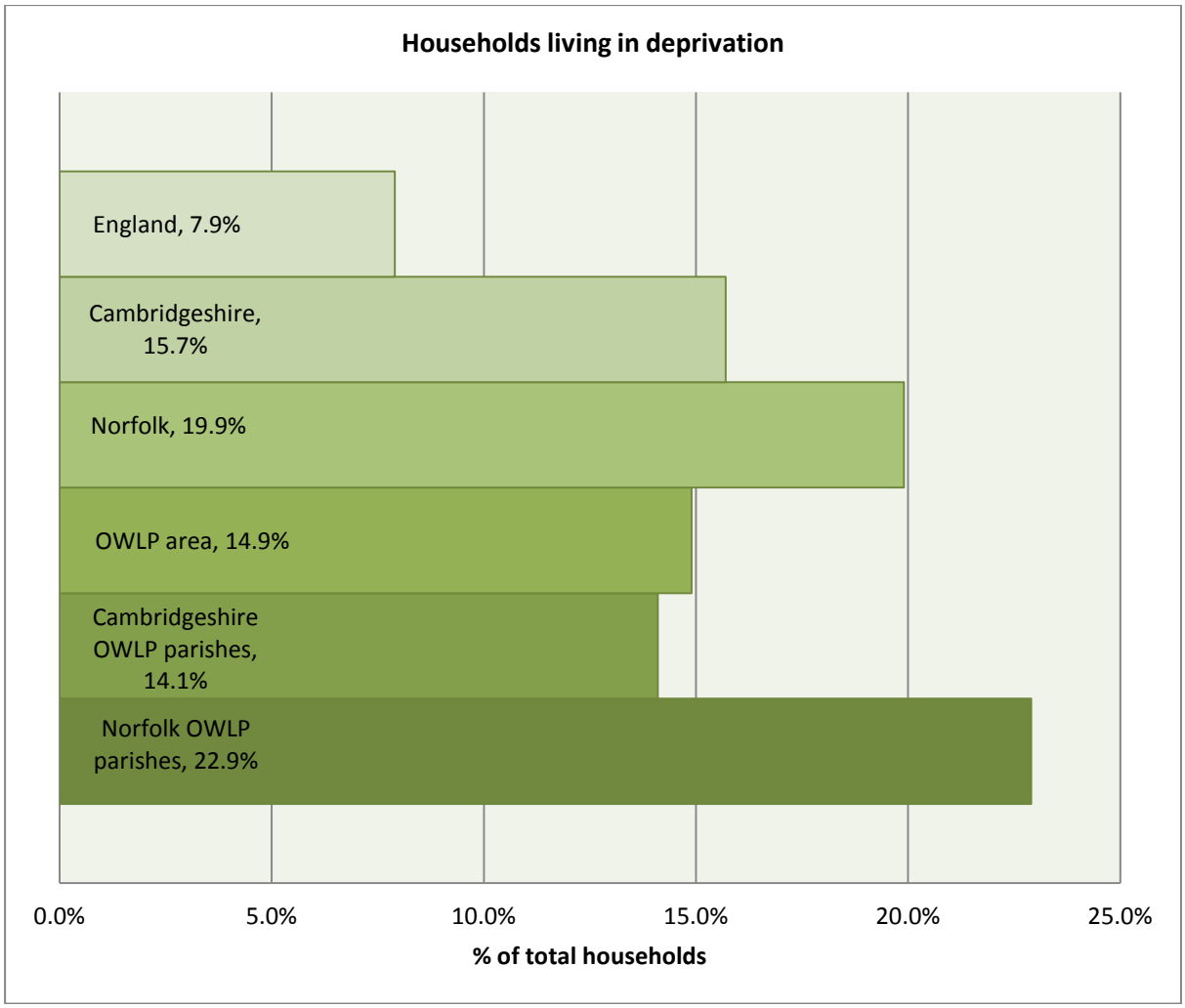
A table giving key demographics and deprivation data for each parish included in the OWLP area is provided in Appendix 2.

There is a great diversity in the levels of deprivation experienced by those living within the area but generally the northern area of the OWLP area is more deprived than the southern area. The parishes in the north of the area (including Denver, Hilgay -Ten Mile Bank- and Welney in the King's Lynn & West Norfolk district and Manea, in Fenland district) show higher levels of deprivation as measured by such indicators as income levels, economic activity and fuel poverty than the parishes in the south of the area (Mepal, Little Downham, Sutton, Coveney and Witcham in East Cambridgeshire district and Earith, Bluntisham, Colne and Holywell-cum-Needingworth in Huntingdonshire district and Over in South Cambridgeshire district).

The parishes in the north have a higher number of residents over the age of 65 than those in the south. For example, Welney, in the north, has 26% of its population over the age of 65 (compared with a figure for Norfolk as a whole of 21.6%). Swavesey, in the south, has just 14% of its population over the age of 65 (compared with a Cambridgeshire figure of 16.1%).

For people claiming to be in bad or very bad health, a similar picture emerges: 10.1% of Welney residents claim to be in bad or very bad health, compared to 2.8% of Over residents.

There are more people living in income deprivation in the north of the OWLP area than in the south (see figure below). For example, in Welney there are 30.5% of households living in 2 dimensions of deprivation compared to 9.9% in Colne (OWLP area = 14.9%; national average = 7.9%).



Percentage of households living in (at least) 2 dimensions of deprivation, showing the particular high percentage of Norfolk households within the OWLP area affected. Source: ONS data, 2011 Census.

The percentage of economically active residents amongst people of working age is much lower in the north of the OWLP area than in the South. Welney has only 55.0% of its working age residents who are economically active compared with 80.1% of economically active working age people in Swavesey.

A similar pattern can be seen in the number of people receiving 'out of work' benefits like Job Seekers Allowance or Employment Support Allowance. For example, in Denver, 7.3% receive benefits, while in Holywell-cum Needingworth this is only 1.8%.

Generally across the northern part of the OWLP area, educational attainment is lower, with access to further educational and other learning opportunities / apprenticeships particularly difficult. In Nordelph, 27.7% of working age people have no qualifications with similarly high figures being noted for Welney (29.0%), Denver (23.8%) and Manea (22.0%). In the south of the OWLP area, there are far fewer people with no qualifications; the percentage is only 12.3% at Colne, 11.9% in Swavesey, 12.8% Holywell-cum-Needingworth and 13.9% in Earith (OWLP area average = 15.6%; national average = 18.2%).

At the other end of the qualification scale, there are higher proportions of people with a Level 4 qualification or higher in the south of the OWLP area (e.g. Over has 28.9% of working age people

qualified to this level) when compared with the parishes in the north of the area (e.g. only 13.8% of people in Manea are qualified to this level).

These areas are predominantly rural and sparsely populated with services and facilities mostly found within market towns. Rural services are in decline through the loss of shops, post offices, churches and pubs. Reliance on the private car is high (an average of 91% of the households in the parishes within the OWLP area have at least one car, compared to a national average of 74%); those without transport face the prospect of not being able to access employment centres, secondary schools, GP surgeries and other vital services.

Although rural communities face some significant issues they also demonstrate a culture of self-reliance. Often they own and run their assets such as village halls and play facilities. Through local voluntary effort, services are maintained which in other areas would normally be thought of as public services. Particularly in the south of the OWLP area, the percentage of adults who participate in regular volunteering (i.e. at least monthly over the preceding year) is above the national average (33% in South Cambridgeshire, 31% in Huntingdonshire and 27% in East Cambridgeshire compared to the England average of 23%). In the parishes towards the north of the OWLP area (those in Fenland and King's Lynn & West Norfolk), the percentages are 21% and 23% respectively, roughly in line with the national average.

How data on demographics and deprivation have influenced the scheme development

- Given the huge difference in demographics between those living in parishes in the north of the OWLP area and those living in the south of the area, community consultations as part of the Audience & Access work have sampled community members living in all areas to gain a full impression of the potential audiences for the OWLP scheme.

- People in the north of the area are less likely to spend time volunteering in their community than those in the south of the OWLP area. Projects within the scheme will therefore particularly aim to engage those in the north regarding potential volunteering opportunities.

- People in the north of the LP area are more likely to have no qualifications. They might well be interested in the training opportunities that the OWLP scheme presents. People in the south of the area are predominantly already well-qualified.

- People in the south of the OWLP area are more likely to travel a great distance (out of the area) to work. They may well be encouraged to use the Ouse Washes for recreational purposes and are often willing to travel further for events.

- The overall poor public transport facilities, in particular for rural communities in the north of the OWLP area, provide barriers to gain access to the Ouse Washes. The OWLP scheme will therefore aim to provide information, attractions and events close to settlements.

Although Norfolk and Cambridgeshire as a whole are well-visited by tourists, the OWLP area itself is generally not known as a tourism destination. As such, the tourism economy and infrastructure is not well developed in most parts of the OWLP area. Nevertheless, data from several key tourist destinations within and close to the OWLP area show that there are good visitor numbers at the tourist access hubs in the landscape; as such, there is good potential to increase the number of visitors to the area through joint-up approaches.

Tourist information data from a selected number of key hubs in and around the OWLP area.

Tourist hub	Approximate visitors per annum
Denver Sluice Complex	3,200
WWT Welney Wetland Reserve	35,133
RSPB Fen Drayton Lakes	31,200
Ely Museum	10,989
Ely Stained Glass Museum	16,383
Prickwillow Drainage Museum	4,420

1.4.5 Transport: options and limitations

Transport and access into and around the market towns is reasonably well catered for, with places such as Downham Market, March, Ely, Littleport and St Ives located on major train lines and/or bus routes. In stark contrast to this, access to most parts of the OWLP area itself is very poor. There are very few regular bus routes in the area making it difficult to access points of interest north of Earith, except by car. Although there is a train station at Manea, the train stops here twice a day and by request only.

A few years ago the Guided Busway has become operational between Cambridge and St Ives; this has been the biggest transport infrastructure project in Cambridgeshire over recent years and has had considerable impact on access to Fen Drayton Lakes: with its own designated bus stop located at the heart of the reserve with more and more visitors now going there by bus (or bicycle) rather than car. However, access to important venues/hubs in the northern part of the Ouse Washes landscape such as WWT's Welney Wetland Centre and the Denver Sluices Complex is still difficult other than by car.

Even by car access can be difficult with parking often a problem and the possibility of roads being closed by flooding during the winter or when unseasonable flooding occurs. The OWLP area is characterised by the linear nature of the rivers and drains which means that there are only three roads crossing the Ouse Washes along its 20 mile length, at Welney, Mepal and Sutton Gault. Many of the largely narrow and rural roads in the area are also in a poor condition.

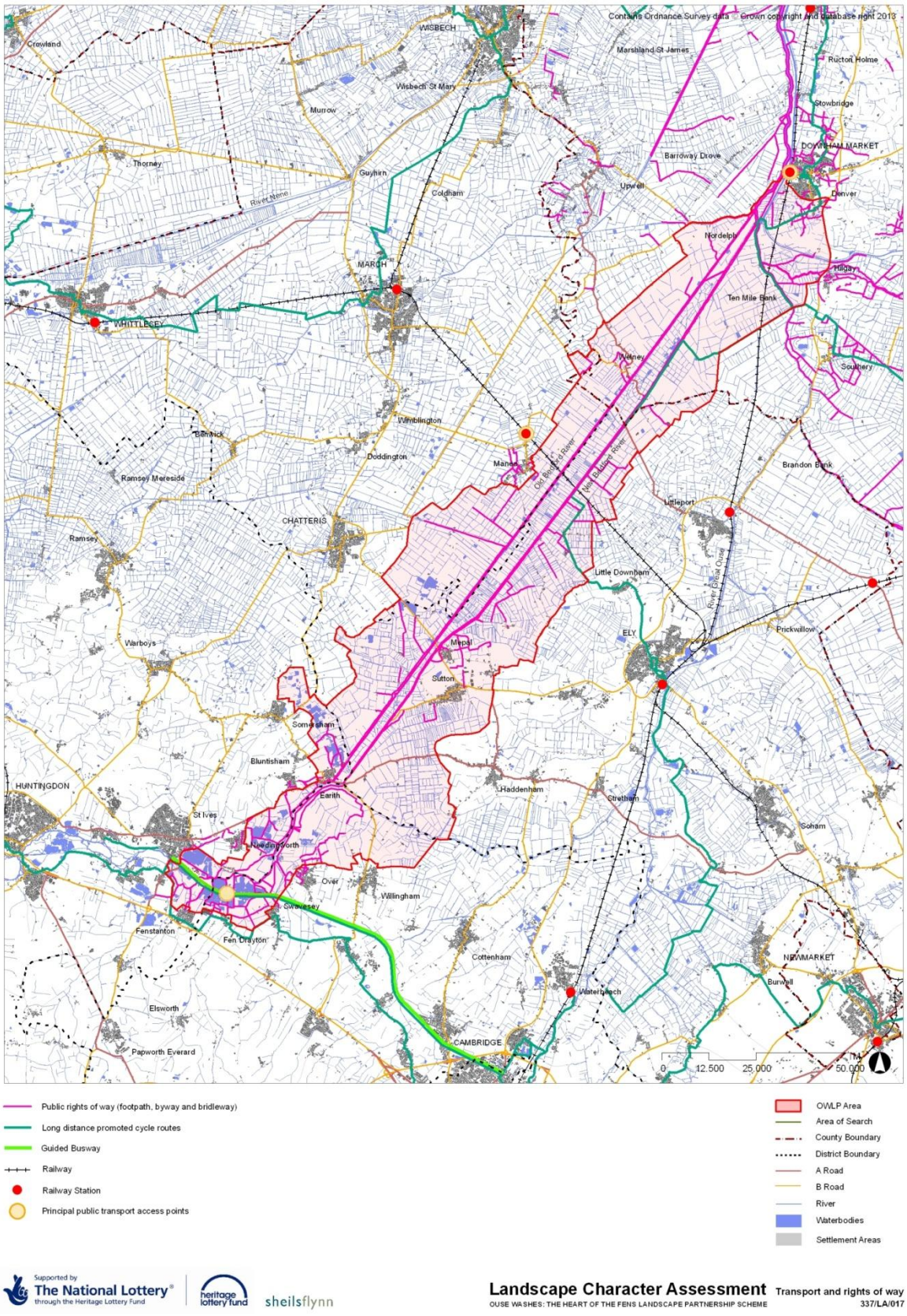
The level nature of the terrain in the OWLP area lends itself to walking and cycling. Both County Councils have invested in publicising available walks with all Rights of Way in the OWLP area being available via interactive maps on their respective websites. The Sustrans national cycle routes cover the northern part of the area – route 51 between Ely and Downham Market via Coveney, the Welney Wetland Centre and the Denver Sluice Complex; and the popular, off-road Route 11 which goes alongside the Guided Busway in the south. The Fen Rivers way is a long-distance walking route which runs between Downham Market and Ely.

Waterway access is generally good with facilities and moorings available at both the southern and northern ends of the Ouse Washes, with concentrations of activities around Denver Sluices, Earith and St Ives. The scheme area is well placed for waterway access being part of the River Great Ouse system, the Great Ouse itself being navigable from Bedford all the way to sea at Kings Lynn. However, no mooring or other facilities are available between Earith and Denver along the New Bedford River. Future work to be carried out as part of the Fens Waterways Link aims to fill in gaps in current facilities, including mooring facilities planned near Welney wetland centre.

Despite the existence of a few long-distance routes in the area, there is a general lack of circular walk and cycle routes in the OWLP area, something which all communities within and around the OWLP

have commented on. Ongoing and future habitat creation schemes, such as those at Ouse Fen and Coveney will partially address this issue by creating new public footpaths and bridleways for the benefit of the surrounding communities. Nevertheless, the intensive arable land use in the area and general inaccessibility of much of the landscape may prevent new paths being created in other areas in the future.

Local communities regularly commented on the lack of interpretation panels or other forms of information provision in and around the settlements. Where there is signage and interpretation at access hubs or along public footpaths, it is in many cases old and tired looking. There is also no dedicated tourist information provision for the area, nor is there a specific on-line presence where people could find out about the area, although several privately-managed websites (e.g., ousewashes.info) partly fill this gap in knowledge but lack good exposure.



The OWLP area, showing public transport infrastructure and existing Rights of Way. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

1.4.6 People's relationship with the area's heritage

The OWLP's Audience & Access work has provided valuable information about people's relationships with the local heritage. The consultations and surveys have provided the partnership with a better understanding of the current and potential audiences the OWLP scheme should engage with (Section 4). This work has also provided the partnership with a much clearer understanding of people's knowledge, awareness, values and attitudes towards the landscape and its heritage, and a better understanding of what people perceive as barriers and opportunities to access and engagement. The information below summarises the main points coming out of this work, with more detailed information supplied in Appendix 2.

Understanding and awareness of the Ouse Washes and its function

The Audience & Access Planning work has shown that there is a general lack of knowledge about the Ouse Washes landscape and how it functions. As one would expect, communities close to the Washes (Sutton, Welney) could talk more knowledgably about the Ouse Washes than those at a distance away from the area. These closer communities are more affected by the flooding which they generally consider to occur more frequently in recent years than in the past. The majority of replies from all communities indicate an awareness of the role of the Ouse Washes in water management although some were not aware that this is an entire man-made system or that the flooding is strictly controlled. Communities further afield (e.g., March) and the local communities at the southern end of the OWLP area show a definite decrease in awareness of the existence or role of the Ouse Washes.

Awareness also seems to be related to age with younger people far less likely to identify the Ouse Washes or understand its function. This may be linked to changes in school curriculum and lost education opportunities as many older residents mentioned that they were taught about land drainage and the local landscape at school.

[About the Ouse Washes:] ''Everyone knows it is there but not everyone knows what it does''

Values towards the landscape and its heritage

Responses from surrounding market towns indicate a low value of the OWLP landscape with 'boring' and 'flat' being the most frequent comments. Residents closer to the Ouse Washes place a higher value on it and generally consider it to be unique. The skies are a common point of appreciation along with the linearity of the landscape. The need to appreciate it from above i.e. a bird's eye view has also been expressed regularly.

Most are aware of its environmental value as far as wildlife is concerned with bird watching a commonly cited activity. Asking about heritage was a trickier question - few could indicate when the Ouse Washes were created or considered them to be worthy of being counted as heritage. A pattern emerged that communities do generally not easily relate to the term 'heritage', although during conversations many people could nevertheless point out interesting historic sites in the landscape or fascinating local stories from the past. Understanding of local heritage nevertheless varies. Some are aware of the archaeological richness of the area and the heritage associated with the historic river transport and its associated wharves, jetties and pubs. Interestingly, when children were surveyed the majority indicated a liking for walks in the country, looking for birds and animals and being by the river, however responses to ''I like stories about what happened a long time ago'' were sometimes less positive.

A clear need has been established to make people more aware of the range of heritage that can be found in the area. In addition, the OWLP needs to consider how the landscape's 'heritage' is presented to both young people and adults, to ensure that it is interesting and links in with local interests.

"[...] It all has heritage value as the whole landscape is man-made"

Use of the countryside

The majority of responses indicated that people are using the landscape around them for a variety of activities which vary along the extent of the OWLP area. Where the landscape is more enclosed and less overtly agricultural i.e. the southern end, usage centres on cycling, walking, picnicking and paddle sports. In the middle and in communities very close to the Washes usage tends to be of a more traditional nature i.e. farming, fishing and wildfowling get mentioned regularly. In the north sailing emerged as an activity along with walking and cycling – very little mention of paddle sports or casual trips to the rivers. There is also a perception, particularly with the older generations in those communities close to the Ouse Washes, that access to the river in the past was easier, less controlled and the landscape was free for all to use, including for activities such as walking, ice skating, wildfowling and fishing.

"Walk dog, help farming friend, socialise, relax, breath!, enjoy the view and wildlife, keep pigs and chicken by the river. Good cycle rides around – flat!"

Barriers to access and engagement

The Audience & Access work identified a clear need for physical and intellectual access to the Ouse Washes landscape. Access is generally considered to be difficult. Flooded roads were mentioned frequently by nearly all communities as a physical barrier to access. The need for more footpath and cycle path provision, joining up the existing routes into a usable network, was mentioned frequently by communities across the whole of the OWLP area.

Another frequent request was for circular walks. This is clearly linked to the distinctive linear nature of the landscape and the relatively low number of connected public rights of way: many residents indicating a dislike of walking along straight lines with repetitive return journeys.

Communities also want to have local access to their rivers for informal, low impact and regular activities such as picnics, strolling, paddling, kids play, paddle sports and generally somewhere to sit and enjoy being outside; local access to rivers emerged as a key need.

"[We need] better footpaths and awareness of what is locally available"

A need for more interpretation boards and general information about where and when to go were also identified. All communities considered there to be potential for building up the Washes as a visitor destination and all recognised the possible boost to their economies. The main barriers to development were considered to be a lack of awareness of what the area has to offer, a lack of access points, a lack of information about where to go and a lack of amenities in some of the main

access points (Fen Drayton and Denver in particular). The need for more visitor accommodation also emerged.

OWLP Boundary and Demographics: Summary

The Ouse Washes: The Heart of the Fens Landscape Partnership scheme covers a total of 243 km^2 and stretches for 48.5km between Denver and Fen Drayton Lakes. This is a distinct landscape, with a unique archaeology and history, linear waterways, significant wetlands and which plays an important role in food production, drainage and flood prevention. At its centre is the 32 km long feature of the Ouse Washes, containing the UK's most extensive area of washland. This, together with the other wetland reserves in the area, forms the 'Great Ouse Wetland' network which covers over 3,000 ha, forming one of the UK's most important wetland areas.

The Landscape Character Assessment and Audience & Access work further refined the scheme boundary, driven by the landscape using natural boundaries and which are understood by local communities. The OWLP landscape is rural and tranquil and contains highly productive, low-lying agricultural land. The landscape itself is largely devoid of settlements, although a string of small communities surrounds the central landscape features, acting as 'gateways' to this landscape. The natural and built heritage is inextricably linked, with the position of settlements and previous livelihoods and pastimes of local residents telling the historic and cultural story of the Ouse Washes.

There is a great diversity in the levels of deprivation experienced by those living within the area but generally the northern area of the OWLP area is more deprived than the southern area. Access to most parts of the OWLP area itself is poor, exacerbated by limited public transport opportunities. Extensive community consultations have provided the partnership with a good understanding of the resident populations' knowledge, awareness and values towards their local heritage, and have identified barriers to access and engagement.

1.5 Existing Management Strategies for the OWLP area

This section summarises what strategies are already in place for the OWLP area. This overview includes selected relevant legislation and policies as well as landscape management mechanisms which are in place, with links to the OWLP made clear. The strategies relevant for the area are divided into different groups, focusing on:

- Biodiversity;
- Water Management, Flood Prevention and Climate Change Mitigation;
- Landscape Character, Historic Environment and Farming;
- Green Infrastructure, Transport and Tourism;
- Planning, Economy and Communities.

1.5.1 Ownership within OWLP area

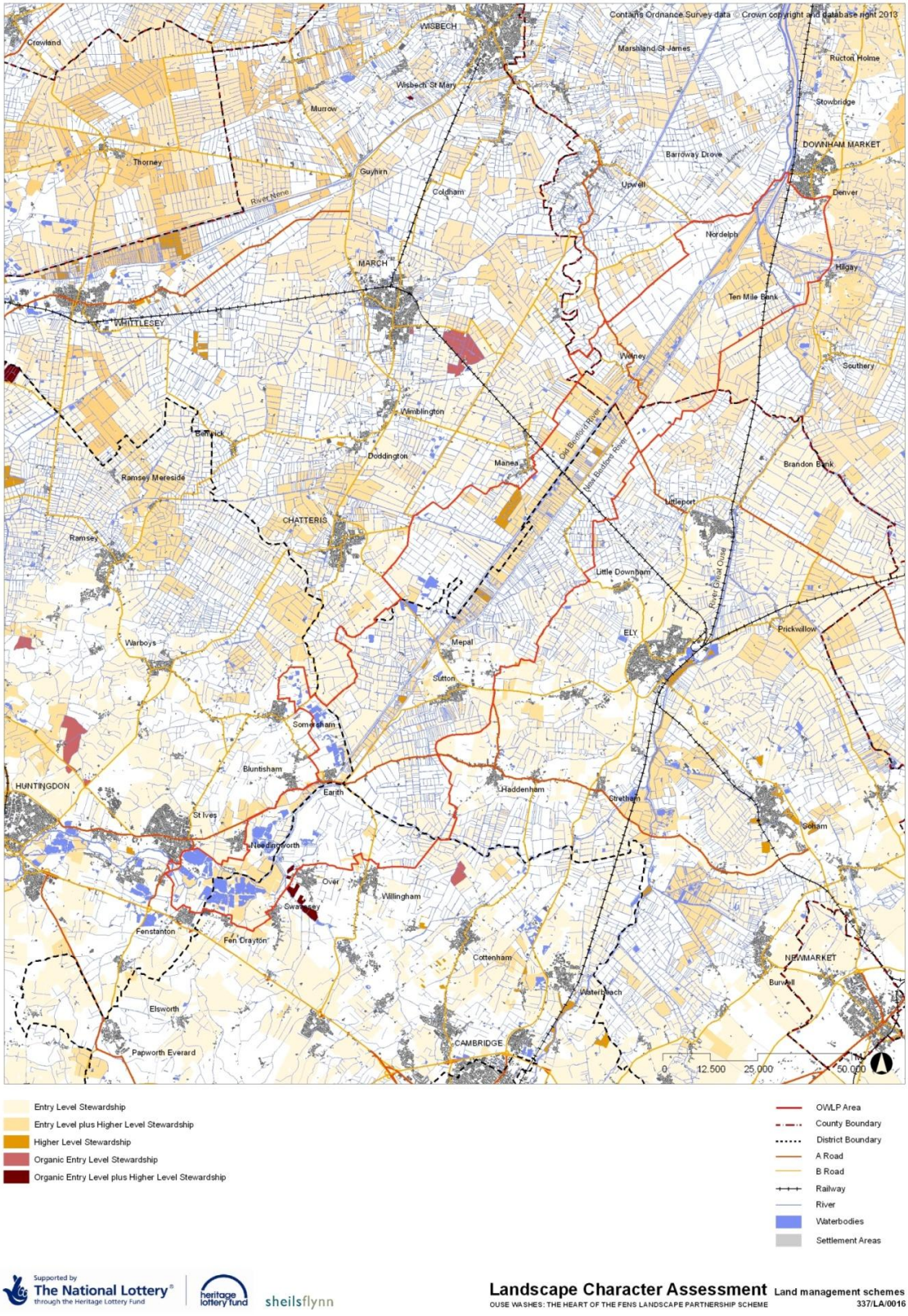
The RSPB, Wildfowl and Wetlands Trust (WWT), Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire (WTBCN), the Environment Agency and the Middle Level Commissioners are involved in biodiversity conservation work within the OWLP area. Over three quarters of the Ouse Washes are owned and managed by the RSPB, WWT and WTBCN together.

Ownership of land within the OWLP area by conservation organisations.

Ownership	**Area**
RSPB • Ouse Washes • Fen Drayton Lakes • Ouse Fen	 1143 hectares (978 ha owned, 154 ha leased, 11 ha sporting rights) 398 hectares (396 ha owned, 2 ha leased) 120 hectares (owned)
WWT • Welney reserve	467 ha
WTBCN • Ouse Washes	187.1 ha (owned, managed by RSPB)

Conservation ownership within the OWLP area. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

There is a relative high uptake of stewardship schemes in the area, showing that many farmers and landowners are very willing to provide for wildlife habitats:



Uptake of Environmental stewardship schemes in the OWLP area. Image created by Sheils Flynn for OWLP; © Crown Copyright and database rights 2013 Cambridgeshire County Council Ordnance Survey Licence 100023205.

1.5.2 Relevant Policies and Management Strategies – Biodiversity

Policy/Strategy/Management Mechanism	Description	Links with OWLP
European & National		
EU Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora), 1992 ➢ http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1992:206:0007:0050:EN:PDF	The EU Habitats Directive addresses the maintenance, improvement and conservation of biodiversity, the environment and natural habitats (Listed in Annex 1, 2 and 4). Listed habitats are designated as Special Areas of Conservation (SACs) to compliment Special Protection Areas (SPAs) to create Natura 2000 sites.	Part of the OWLP's washlands are designated as a Special Area of Conservation (SAC) - comprises 311ha -, particularly important for *Cobitis taenia* (Spined Loach), as this is one of only four known outstanding localities in the United Kingdom.
EC Birds Directive (Directive 2009/147/EC on the conservation of wild birds), 2009 ➢ http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:020:0007:0025:EN:PDF	The European Birds Directive provides for the protection, management and control of all species of naturally occurring wild birds in the European territory of Member States. The directive requires the identification of SPAs to protect the listed species (Annex 1).	The Ouse Washes are home to many endangered birds and are designated as a Special Protection Area (SPA). The SPA comprises 2,447ha, with over 64,000 overwintering waterfowl annually and remains important for breeding Black Tailed Godwit.
Ramsar Convention, 1972 ➢ http://www.ramsar.org/cda/en/ramsar-documents-texts/main/ramsar/1-31-38_4000_0__	The RAMSAR Convention on Wetlands of International Importance is an international agreement that has led to sites that fulfil an agreed criteria being designated as RAMSAR sites. Once designated, the aim is to conserve wetlands by ensuring sustainable development.	Within the OWLP area 2,469 ha of washland habitat is designated as a Ramsar site as it is "one of the most extensive areas of seasonally flooded washland of its type in Britain", important for its large waterfowl populations, neutral grasslands and rich aquatic flora and fauna associated with its watercourses.
Wildlife and Countryside Act, 1981 ➢ http://www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga_19810069_en.pdf 1985 amendment ➢ http://www.legislation.gov.uk/ukpga/1985/31/pdfs/ukpga_19850031_en.pdf	This Act 1981 is concerned with the protection of wild birds, animals and plants making it an offence to destroy or kill them. It also addresses conservation, especially through establishing Sites of Special Scientific Interest (SSSIs), Countryside and National Parks and Public Rights of Way.	The Ouse Washes Site of Special Scientific Interest (SSSI) seeks to protect the area between the New Bedford River to the south-east and the Old Bedford River/Counter Drain to the north-west. These rivers fall within the boundary of the SSSI and the total area forms approximately 50% of the OWLP scheme. It is of particular importance due to the large numbers of wildfowl and waders which it supports, the large area of unimproved neutral grassland communities which it holds and for the richness of the aquatic fauna and flora within the associated watercourses.
Countryside and Rights of Way (CRoW) Act 2000	Both Acts amend public rights of way as well as wildlife and	The OWLP encourages the creation of new routes,

Policy/Strategy/Management Mechanism	Description	Links with OWLP
➢ http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf Natural Environment and Rural Communities Act 2006 ➢ http://www.legislation.gov.uk/ukpga/2006/16/pdfs/ukpga_20060016_en.pdf	conservation established in previous acts (e.g. the Wildlife and Countryside Act 1981). It provides public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for SSSIs and strengthens wildlife enforcement legislation. Additionally, it determines map criteria and rights and liabilities of landowners.	while avoiding damage to wildlife. The local definitive ROW map, managed by Cambridgeshire and Norfolk County Councils, will be consulted when promoting existing rights of way and enhancing access as part of the OWLP scheme. This will enable people to experience nature whilst causing minimal harm to the environment.
The Conservation of Habitats and Species Regulations 2010 ➢ http://www.legislation.gov.uk/uksi/2010/490/pdfs/uksi_20100490_en.pdf	The Conservation (Natural Habitats &c.) Regulations 1994 transposed the EU Habitats Directive into National legislation. The act requires the secretary of state to make a list of sites that are important for habitats or species. Once agreed with the European Commission and EU member States, the site will become a Site of Community Importance (SCI) which must then become a SAC within six years. The Conservation of Habitats and Species Regulations 2010 makes it an offence to deliberately capture, disturb, kill or trade animals listed in Schedule 2 of the Act. It is also an offence to collect, cut, destroys, pick or uproot plants listed in Schedule 4.	As this legislation it the transposition of the EU Habitats Directive into national legislation, its relevance to the project is that same as discussed with the EU legislation.
EU Biodiversity Strategy 2020 ➢ http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/2020/1_EN_ACT_part1_v7%5b1%5d.pdf Biodiversity 2020: A strategy for England's wildlife and ecosystem services ➢ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf	The EU Biodiversity Strategy 2020 aims to reverse biodiversity loss and move the EU towards a more resource efficient and green economy. The 2020 headline target looks to halt the loss of biodiversity and ecosystem service degradation within the EU by 2020. Furthermore, biodiversity and ecosystem services are to be restored where feasible. It also aims to increase awareness of the economic value of biodiversity. Biodiversity 2020 is England's response to how to implement the EU Biodiversity Strategy 2020 as well as building upon the Natural Environment White Paper. It utilises information reported in the UK National Ecosystem Assessment to set out targets. It focuses on stopping biodiversity loss whilst supporting ecosystem functioning to benefit both people and wildlife.	As the LP is concerned with improving the management of the Ouse Washes landscape, it helps to reduce biodiversity loss. Additionally, the overarching goals of the LP also incorporate the values of becoming a more resource efficient economy through utilising the environment for socioeconomic benefits with minimal compromise to the environments integrity. Through the implementation of a LP, awareness of the market value of biodiversity will also be translated.

Policy/Strategy/Management Mechanism	Description	Links with OWLP
UK Post-2010 Biodiversity Framework, 2012, JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) ➢ http://jncc.defra.gov.uk/page-6189	Due to the UK failing to reach targets for reducing biodiversity loss by 2010, the UK Post-2010 Biodiversity Framework was produced to replace the UK level Biodiversity Action Plan (1994-2010). This new document sets out 5 internationally agreed goals to be achieved by 2020 in the UK: - A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; - **B: R**educe the direct pressures on biodiversity and promote sustainable use; - C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity" - D: Enhance the benefits to all from biodiversity and ecosystem services; - E: Enhance implementation through participatory planning, knowledge management and capacity building.	The OWLP will contribute to Strategic Goals B through to E. This will occur through working with farmers to reduce the pressures on the environment, improving biodiversity through protecting wetland sites, enhancing the benefits to all through working to ensure community involvement and the nature of the OWLP partnership itself fits into Strategic Goal E.
Lawton report 'Making Space for Nature', 2010 ➢ http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf	Lawton found that England's habitats are highly fragmented and unable to respond effectively to new pressures such as climate and demographic change. Consequently, 24 recommendations were suggested for the government, local authorities, the private and voluntary sectors and people to work towards a more ecologically integrated England. A summary of the recommendations is to increase the status of SSSI from recovering to favourable; improve corridors, buffers and islands to join conservation sites and decrease habitat fragmentation; and establish ecological restoration zones.	The OWLP scheme looks to improve habitats by creating corridors, buffers and islands and working closely with the Fens for the Future Partnership for joint outcomes. Additionally, the OWLP scheme aims to connect people with local heritage through volunteering schemes. This will also encourage people to engage with their environment.
Natural Environment White Paper. The Natural Choice: securing the value of nature. Defra, 2011 ➢ http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf	The Natural Choice is the Government's response to the 2010 Lawton report. To improve environmental integrity, man and environment must be connected. This integration is encouraged through focusing on the value of ecosystem services and both the social and economic benefits they provide for people.	As above.
State of Nature report, 2013 ➢ http://www.rspb.org.uk/Images/stateofnature	The state of nature is a comprehensive report produced by 25 conservation and research non-government organisations on the	The OWLP will work in areas where fresh water species that have experienced decline nationally,

Policy/Strategy/Management Mechanism	Description	Links with OWLP
_tcm9-345839.pdf	condition of the UK's wildlife. It is the first of its kind and found that 60% of the species surveyed have declined in the past 50 years with specialist species suffering the most. More needs to be done to improve the state of nature in the UK. Through doing so, nature's intrinsic value will be maintained as well as enhancing our well-being and economic status Fresh water habitats are the most impacted habitat in the UK: 57% of recorded freshwater species have decline in the past 50 year, with an additional 29% of freshwater and wetland species having declined strongly. Wetland species are prone to decline for several reasons: 1) Water pollution 2) Modification of waterbodies 3) Drainage 4) Water abstraction 5) Climate Change 6) Alien species 7) Diseases 8) Lack of active habitat management	such as the Water vole inhabit. Through managing the landscape the OWLP will be able to move towards improving the state of nature within wetland environments.
Wetland Vision for England, 2008 ➢ http://www.wetlandvision.org.uk/userfiles/File/Wetland%20Vision%20Document%20Website%20Version.pdf	A Wetland Vision for England is a partnership between English Heritage, The Environment Agency, Natural England, The RSPB and The Wildlife Trust. The Vision aims to make wetlands a significant landscape feature by linking new and existing wetlands. This is to be achieved through restoring degraded wetlands and extending lowland habitats such as grazing marshes, ponds and reed beds. It highlights the importance of preserving wetland for ensuring the provision of ecosystem services such as heritage, flood defences and pollution control. Furthermore, the vision aims to increase the relevance of wetlands to people so that they better understand the benefits they provide.	The OWLP scheme has been developed to align its objectives to support the outcomes of the Wetland Vision for England. This will be achieved through restoration of wetland, community involvement and the engagement of landowners.
RSPB Futurescapes programme	RSPB Futurescapes Programme is working in partnership with	In the OWLP area (Fen Drayton Lakes and Ouse Fen)

Policy/Strategy/Management Mechanism	Description	Links with OWLP
➢ http://www.rspb.org.uk/Images/futurescapes uk_tcm9-253866.pdf	other environmental organisations, local communities, businesses and government bodies across the UK to enhance the ability of landscapes to support wildlife and ecosystem services.	the RSPB is working closely with minerals companies to provide the increase in space required for the recreation of wetland habitats. It also links this to farmland through agri-environment schemes, which reward farmers who are wildlife-friendly. The LP will support this approach by recognising and developing the critical role of farmers in conserving farmland wildlife.
Wildlife Trust's Living Landscapes programme ➢ http://www.wildlifetrusts.org/sites/wt-main.live.drupal.precedenthost.co.uk/files/files/TWT%20A%20Living%20Landscape%20vision%20FINAL.pdf	The Wildlife Trust looks to improve people's connection with nature, increase wildlife and improve ecosystem functioning. Through activities such as increasing the size of existing habitats and educating people more about their environment, wildlife can be safeguarded for the future.	The Ouse Valley has its own living landscape scheme; this includes the OWLP area between St Ives and the Ouse Washes.
Regional & Local		
East of England's Biodiversity Delivery Plan ➢ http://www.eoebiodiversity.org/index.html	East of England's Biodiversity Delivery Plan 2008-15 covers 6 broad challenges as follows: 1) Networking nature; 2) Realising biodiversity's true value; 3) Ensuring there is water; 4) Responding to a changing coast; 5) Safeguarding the seas; 6) Enhancing the evidence base. In order to achieve the above, three core goals are set: 1) Secure a resilient environment; 2) Demonstrate that people in the region benefit from its biodiversity; 3) Ensure that biodiversity is perceived to be at the heart of regional policy making.	The LP will work towards three of these - 'networking nature', 'realising biodiversity's true value' and 'ensuring there is water'.
Fens Biodiversity Audit ➢ http://www.nbis.org.uk/sites/default/files/documents/Fens%20Biodiversity%20Audit_FINAL%20report%2024.10.2012_small.pdf	The Fens Biodiversity Audit details the biodiversity of the region and the methods used to collect the data. The region is home to numerous animals and plants that are listed in legislation as protected species.	The Biodiversity Audit highlights the Ouse Washes SSSI as a biodiversity hotspot. The Ouse Washes are highlighted as containing species for all management guilds.

Policy/Strategy/Management Mechanism	Description	Links with OWLP
Fens For The Future Partnership. A Strategic Plan For Fenland: A Proposal For An Enhanced Ecological Network, 2012 ➢ http://www.lincsfenlands.org.uk/index.php?page=BiodiversityFensFuture Fenland Ditches Working Group (a subgroup of the Fens for the Future Partnership)	The work of The Fens for the Future Partnership integrates the work of conservationists, farmers, drainage engineers, archaeologists, businessmen and women and concerned locals to build a better environment for future wildlife. It aims to make the Fens one of the UK's main wetland complexes by 2020 and this document sets out the Partnership's aims for achieving this overarching goal in the context of the Lawton review, White Paper, Wetlands Vision and previous Wider Fens Group Integrated Biodiversity Delivery Area (IBDA) partnership work. The Fens for the Future aims to reconnect people with the Fens natural and historic heritage as well as the rural economy, through: 1) Restore sustainable wetlands 2) Re-create wetlands 3) Reconnect wetlands	It was from the Fens IBDA partnership that the idea to consider the Ouse Washes area for a LP was first considered, working together at a landscape level through a more concentrated approach and with the LP developing and strengthening partnerships with local communities and landowners. The Ouse Washes is a critical project within this Plan and we will work with the group to ensure that the overall aims of the OWLP are adopted. The OWLP scheme will also increase conservation work through partner organisations and volunteering opportunities to increase habitat connectivity. The OWLP also aims to increase tourism leading to greater awareness of the region's cultural heritage as well as benefiting the rural economy. The OWLP has been closely involved in preliminary ditch biodiversity studies within the Ouse Washes area to assess their biodiversity value.
The Great Ouse Wetland Vision, 2010 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/CFFD71DE-6B71-4617-9B5A-FAF4D5FA241C/0/E152.pdf	This is a joint vision between three conservation organisations, RSPB, WWT and WTBCN. They aim to improve the Ouse Wash wetlands due to their ecological and social importance, incorporating plans to restore mineral sites whilst allowing extraction to enhance economic growth. Community involvement in the region will be bettered through increasing and improving signage, promotion and access.	The OWLP is contributing to the aims of the 'Great Ouse Wetland Vision' and will act as a catalyst to encourage further partnership development between RSPB, WWT and WTBCN, all of whom own and manage land within the OWLP area. They see this as the starting point of linking the restored Fenland habitats with the washlands. This is also important in continuing the strategy for promoting and managing public access.
Greater Cambridgeshire Local Nature Partnership – draft Action Plan ➢ http://www.cambridgeshire.gov.uk/community/localnature/Greater+Cambridgeshirelocalnat	LNPs aim to ensure the natural environment is valued throughout local decision-making, sustainable land use and management and greener economic growth. They advise on strategic planning matters and enhancement of the quality of life, health and well-	The OWLP scheme aims to improve the natural environment and community engagement with their landscape through projects enhancing volunteering, tourism and conservation. In so doing, the OWLP

Policy/Strategy/Management Mechanism	Description	Links with OWLP
urepartnership.htm LNP– Wild Anglia (Norfolk & Suffolk) – Manifesto ➢ http://www.newanglia.co.uk/Page.aspx?id=295	being of people. The Greater Cambridgeshire Local Nature Partnership is yet to produce any definitive aims and objectives that fit into the principles of Local Nature Partnerships. Wild Anglia, the LNP for Norfolk and Suffolk, is more established and has set aims to fulfil all of the above criteria.	helps achieve the aims of the LNPs.
Biodiversity Action Plans – IDBs. Each Internal Drainage Board in the area has its own Biodiversity Action Plan Biodiversity Action Plan – Hundred Foot Washes Internal Drainage Board ➢ http://www.middlelevel.gov.uk/biodiversity-action-plans.aspx	Biodiversity Action Plans (BAPs), set nationally, form a framework of action for habitats and species that live in the Fen rivers, reedbeds and on the washlands. The Hundred Foot Washes IDB Biodiversity Action Plan was produced as a part of the Middle Level Biodiversity Action Plan. It highlights drainage ditches, floodplain grazing marsh and open water as key habitats within the Hundred Foot Washes and outlines targets to monitor and enhance these habitats. It also highlights water vole, otter, bats and the kingfisher as key species and outlines activities to monitor and manage these species.	The recreation of Fenland habitats and nature reserves such as Fen Drayton Lakes and Ouse Fen are seen as contributing to the UK target for reedbed creation. The local BAP for habitats and species will be instrumental in guiding the management of the washlands and the fenland habitat restoration. Local Habitat BAPs relevant to the Ouse Washes include: field margins; arable land; fenland drainage ditches, fens floodplain and grazing marsh; reed beds and Species Action Plans including for the Bittern.
The Anglian Region Habitat Creation Programme: its role in the Suffolk SMP2 and compliance with the Habitats Regulations. ➢ http://www.suffolksmp2.org.uk/publicdocuments/finalsmp/Regional%20Habitats%20Creation%20Programme.doc	The Anglian Region Habitat Creation Programme outlines the need for creating new freshwater habitats to compensate for the potential loss of habitats along the Suffolk coast.	The OWLP scheme involves projects, which will lead to the creation of fresh water habitats. Two projects carried out as part of this programme are the Norfolk Wildlife Trust project at Hilgay and Lady Fen development at WWT Welney Reserve.
Nature After Minerals programme ➢ http://afterminerals.com/programme.aspx ➢ http://www.rspb.org.uk/Images/natureaftermineralsreport2_tcm9-135675.pdf Block Fen/Langwood Fen – Masterplan - adopted July 2011 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/483D328C-8CF8-4248-BD87-3FA51E36EA32/0/BlockFenLangwoodFenSPDJ	Natural England and the RSPB are working together with guidance from the Mineral Products Association and the British Aggregates Association to work with mineral planners and industry to assist with the preservation and restoration of nature before, during and after mineral extraction. This programme also aims to address issues raised in the England Biodiversity 2020 targets by improving the status of SSSIs.	Within the OWLP scheme area, mineral extraction has occurred or is occurring at Block Fen/Langwood Fen, Fen Drayton Lakes and Ouse Fen, with wetland habitat creation following extraction. Block Fen/Langwood Fen: After extraction, there will be a wildlife habitat restoration scheme implemented, leading to 480ha of wet grassland habitat. Furthermore, there will be the capacity for water storage which will alleviate flooding on the

Policy/Strategy/Management Mechanism	Description	Links with OWLP
uly2011Web1.pdf		Ouse Washes. Consequently, conserving the wetland habitat of the region.

1.5.3 Relevant Policies and Management Strategies - Water Management, Flood Prevention and Climate Change Mitigation

Policy/Strategy/Management Mechanism	Description	Links with OWLP
European & National		
Climate Change Act, 2008 ➢ http://www.legislation.gov.uk/ukpga/2008/27/contents	Establishes a framework to develop an economically credible emissions reduction path, with a 2050 target of 80% reduction in carbon emissions from the 1990 baseline.	Climate change poses a significant threat to the Fens. Rising sea levels could cause river banks to be overtopped, resulting in serious flooding and salinisation of the wetland ecosystems.
EU Water Framework Directive (WFD), 2000 (Directive 2000/60/EC) ➢ http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0060:EN:NOT	Addresses the need for reducing water pollution in rivers and lakes. The Directive stresses the importance of getting citizens involved in water management and balancing the interests of various groups. The Water Framework Directive sets an objective of achieving at least 'good status' in all water bodies by 2015 or, provided that certain conditions are satisfied, seek to achieve the objective by 2021 or 2027.	Pollution caused by nitrates from intensive agriculture is a concern in the OWLP area, potentially causing algal blooms, which are a threat to aquatic ecosystems. The OWLP will support the WFD through strengthening partnership working and increasing community engagement in water management issues.
Flood and Water Management Act 2010 ➢ http://www.legislation.gov.uk/ukpga/2010/29/contents	Addresses the threat of flooding and water scarcity, both of which are predicted to increase with climate change. It requires the Environment Agency to create a National Flood and Coastal Erosion Risk Management Strategy and Lead Local Flood Authorities to create local flood risk management strategies.	Water management is a key part of the functioning of the OWLP landscape.
National Flood and Coastal Erosion Risk Management Strategy for England, 2011 ➢ http://www.official-documents.gov.uk/document/other/9780108510366/9780108510366.pdf	Sets a framework for communities to develop local partnerships in order to create solutions for a more comprehensive management of flood risk for people, homes and businesses. Underpinning the approach is partnership working and helping communities understand the risks and sustainability.	Through its projects the OWLP will support community involvement and help communities understand the flooding and climate change issues facing the Ouse Washes.
Regional & Local		
Tomorrow's Norfolk, Today's Challenge, 2008 ➢ http://www.norwich.gov.uk/Environment/EcoI	Recognises that climate change presents challenges relating to flooding and water shortages with impacts to homes, livelihoods	Potential impacts of climate change on the OWLP area:

Policy/Strategy/Management Mechanism	Description	Links with OWLP
ssues/Documents/NorfolkClimateChangeStrategy.pdf	and landscapes in the OWLP area. There are threats from sea-level rises on the coast impacting the washlands, which could result in loss of species and the historic environment. A particular challenge is the higher than average car ownership in the rural areas impacting on the environment.	• By 2080 sea levels could rise by up to 0.88m, increasing flood risk; • Changes in climate may affect the viability of different types of agriculture and affect biodiversity.
Cambridgeshire Climate Change and Environment Strategy, 2008 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/EBB4D62C-DB6A-43E0-BBB0-BA9E0A288722/0/080826CCESProof.pdf	Supports working to protect and enhance the natural and built surroundings and landscape character and diversity. It also recognises the need to enhance green/open space due to population growth.	• Threats to the County include pressure on water resources, increased risk of flooding, severe weather such as heat waves and drought and the increasing need to irrigate crops. Longer-term threats to biodiversity may arise from intensifying agriculture and the fragmentation of isolated habitats. • Cambridgeshire's rivers and streams generally support a rich variety of wildlife, but water quality and wildlife may decline where there is low water flow and where concentrations of chemicals e.g. from agriculture are high. Will work to improve water quality. • Promotes sustainable transport such as walking and cycling. • Will work to protect and enhance Cambridgeshire's landscape character and diversity.
Anglian River Basin Management Plan Environment Agency, 2009 ➢ http://www.environment-agency.gov.uk/research/planning/124725.aspx	This plan is about the pressures facing the water environment in the Anglian River Basin District and the actions that will address them. It has been prepared under the WFD. The aim for the Anglian region is that 20% of all water bodies will be at good status by 2015, an increase of 1% from 2009. Many improvements would be technically unfeasible or may be disproportionately costly. Out of the ten river basin districts in England and Wales, the Anglian area scores the second lowest after Humber (19%), with Northumbria setting the highest target	• Old Bedford and Middle Level watercourses are pumped drains and low-lying. This results in very low dissolved oxygen levels. Nutrient enrichment arising from agricultural run-off and sewage treatment works can encourage excessive weed and algal growth that can also affect water quality. • Cam and Ely Ouse (including South Level) – loss of marshland at the coast, to be compensated for by

Policy/Strategy/Management Mechanism	Description	Links with OWLP
	of 48% 'good' status by 2015.	65ha of created wetland at Hilgay. • Community participation: suggests ways for people to help such as joining a river group to spot pollution • Links with perceived outcomes of several OWLP projects including 'Giving Nature a Home at Fen Drayton Lakes' and 'Wildlife Friendly Farming & Community Engagement'.
Great Ouse Catchment Flood Management Plan, 2011, Environment Agency ➢ http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/gean0111btjl-e-e.pdf	The CFMP gives an overview of flood risk in the Great Ouse catchment and sets out the preferred plan for sustainable flood risk management over the next 50 to 100 years. The catchment area is about 8,596km^2, extending from Buckingham to Bury St Edmunds and up to The Wash. In the future climate change and urbanisation could increase the risk of flooding. The catchment is divided into sub-areas. The OWLP area is in sub-area 10 (The Fens), which comes under flood risk management policy 4, whereby flood risk is already managed, but further action may be needed to keep pace with climate change.	The Ouse Washes is the most important flood storage area in the catchment. Overall there are around 37,500 people at risk from the 1% annual probability river flood. However, due to flood risk management around the Ouse Washes few properties are at risk, although there could be serious flooding if embankments were breached or failed. Within the Fens sub-area: • Over 41km^2 of grade one and two agricultural land is at risk of flooding (1% annual probability). • Environmental enhancement projects must be incorporated into any flood risk management solutions to ensure that existing wetlands are maintained and enhanced and new wetlands created.
Ouse Washes Water Level Management Plan, 2002; Halcroft Group Ltd for Environment Agency	Water Level Management Plans aim to balance the water level requirements of different activities including nature conservation, flood defence, agriculture and recreation. This Water Level Management Plan gives target water levels that dictate how the sluices are operated. The WLMP includes ditches as well as main watercourses. The recommendation is that WLMPs are updated every 5 years; it is felt that a new WLMP is needed, however there are currently no funds in place. Current water levels:	The international importance of the Ouse Washes for nature conservation makes sensitive management of water levels essential. The overall water level management objective is: To maintain the traditional water management regime which accommodates flooding in winter and produces moist soil conditions in spring and drier soil conditions in the summer, so that the Washes may fully realise their function as a flood storage reservoir and value as a wildlife habitat

Policy/Strategy/Management Mechanism	Description	Links with OWLP
	• Earith sluice starts to open when water levels in the Bedford Ouse are at 3.17 m OD between Nov and Mar, and 3.77m OD between Apr and Oct. • The washes start to flood at about 0.7m OD, and are mostly flooded by 1.7m OD. Levels above 2.40m OD flood the Welney Road (the A1101) and above 2.75m OD flood the Sutton Gault causeway, causing significant disruption to local traffic. • The desired summer level is 0.5m OD.	whilst also fulfilling agricultural and recreational requirements.
The Great Ouse Tidal River Strategy, Consultation draft, 2009, Environment Agency ➢ http://www.eastcambs.gov.uk/sites/default/files/agendas/sd101109ag_J217Appendix.pdf	Aim of the strategy is to identify how flood risk can be managed over a 100-year period, taking into account sustainability, environmental benefit, health and safety and value for money. Its purpose is also to publicise the proposals to allow people to comment. The document describes some of the issues in the area, such as siltation and summer flooding. It suggests possible flood risk management options, the suitability of each, and which the preferred strategy is.	Preferred flood risk management strategies for the OWLP area: • Maximise flows through Denver Sluice to flush out silt in the Tidal River; • New erosion protection as well as repair and replacement of existing erosion protection; • Change the operation of Earith Sluice; • Replacement of crest walls on top of embankments expected in 2035; • The standard of protection of the South Level Barrier Bank is predicted to fall to 1 in 20 years in around 2080. When this happens we will carry out bank raising work to ensure that the standard does not fall below 1 in 20; • Raise the West Bank defences of the Tidal River between Old Bedford Sluice and St Germans pumping station when the standard of protection falls to 1 in 100 years in around 2080; • Raise the East Bank defences of the Tidal River between Wiggenhall St Peter and Saddlebow when the standard of protection falls to 1 in 75 years in around 2100.
Cranbrook/Counterdrain Flood Risk Management	The Cranbrook Drain/Counter Drain/Old Bedford River System	Key parts of the preferred strategy include:

Policy/Strategy/Management Mechanism	Description	Links with OWLP
Strategy – Detailed Strategy Report, 2008 ➢ http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=5&sqi=2&ved=0CFAQFjAE&url=http%3A%2F%2Fconsult.peterborough.gov.uk%2Ffile%2F1387066&ei=JWL6UZbQJqjA0QXc7oH4Cg&usg=AFQjCNGaAJYNgXPHgVfRihj2MVdKtoku4A&sig2=9_1_SO5NSTv-oY_wEXl7hw	drains part of the 'Middle Level' fenlands in Cambridgeshire and Norfolk. The strategy looks at flood risk management options for this area.	• Refurbishment of the Welches Dam pumping station within 5 years; • Phasing in flood storage within 15 to 25 years to replace Welches Dam pumping station.
Cranbrook/Counterdrain Flood Risk Management Strategy – Flood Risk Management Principles and Specification, 2009 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/5EAD1538-2FA5-4391-ABF1-6D2F85389350/0/PrinciplesoftheFSA_Final.pdf	This document presents the vision and key principles for flood storage at Block Fen. The Environment Agency's aim is to be able to deliver their primary objective of providing sustainable flood risk management to the Cranbrook Drain catchment in the face of a changing climate whilst also contributing recreational, amenity and biodiversity gains and maximising efficient use of natural resources.	There is an opportunity to provide flood storage as one of a range of after-uses following minerals extraction in the Earith/Mepal area at Block Fen. This will also create recreational, amenity and biodiversity opportunities.
Cambridgeshire's Local Flood Risk Management Strategy, Final Report, 2013-2015 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/38A828C4-EDD1-46CA-AC38-92207B4E36A9/0/FinalFloodRiskManagementStrategy.pdf	Under the Flood and Water Management Act 2010, Cambridgeshire County Council is designated as a 'Lead Local Flood Authority'. It has the responsibility for developing, maintaining and applying a local flood risk strategy in Cambridgeshire. The strategy contains 5 key objectives: • Understanding flood risk in Cambridgeshire; • Managing the likelihood and impact of flooding; • Helping Cambridgeshire's citizens to understand and manage their own risk; • Ensuring appropriate development in Cambridgeshire; • Improving flood prediction, warning and post flood recovery.	The strategy notes the role of the Ouse Washes for flood protection and nature conservation. The strategy identifies the following aspirations for the Cambridgeshire Fens: • Continue to ensure that appropriate flood risk and water management measures are taken to protect the nationally important food production areas and to protect life and property, in accordance with the principals of sustainable drainage; • Contribute to the protection and enhancement of the heritage and environmental significance and unique landscape of the fens and its biodiversity; • Support promotion and use of the waterways and other areas in the Fens for tourism and recreation. • Develop effective dialogue with local

Policy/Strategy/Management Mechanism	Description	Links with OWLP
		communities to facilitate their involvement in flood risk management in the Fens; • Work with local planning authorities to help them grow the economy in the Fens, through the early consideration of flood and water management needs.
Old Bedford including the Middle Level Water Catchment Management Plan. Working Together for a Better Water Environment for the Old Bedford including the Middle Level. Cambridgeshire ACRE on behalf of the Water Care Partnership, draft February 2013 (draft, unpublished). In October 2013 Cambridgeshire SCRE received a further grant from DEFRA for another year's work on leading the catchment partnership.	The Catchment Based Approach will encourage local communities and environmental groups to take on more responsibility for improving the health of their local rivers, as well as the surrounding natural environment and wildlife. The partnership formed in August 2012 and has brought together a range of partners (e.g. Cambridgeshire ACRE, Environment Agency, Natural England, RSPB) so that they might work together, engaging with other people and organisations in the area. Vision – water bodies will: • be cleaner and healthier; • support more fish, birds, and other wildlife; • provide a more attractive amenity for people to enjoy; • be sensitively managed by everyone whose activities affect it; • continue to provide drainage and manage flood risk.	The plan contains details of current projects and the issues addressed. Projects come under the following headings: • Understanding reasons for failure; • Unseasonal flooding of the Ouse Washes; • Pollution; • Invasive non-native species; • Illegal fishing activity; • Water abstraction. The Water Care Partnership's Action Plan includes the following point: • Develop the Ouse Washes LP and make links with the Future Heritage theme.

1.5.4 Relevant Policies and Management Strategies – Landscape Character, Historic Environment and Farming

Policy/Strategy/Management Mechanism	Description	Links with OWLP
The East of England Landscape Typology, produced by Landscape East, 2010 ➢ http://landscape-east.org.uk/east-england-landscape-typology	A comprehensive landscape typology for the region	East of England Integrated Landscape Character priority objectives and landscape sensitivity assessment guidelines are particularly useful for the OWLP area.
NCA 46, 2012 ➢ http://www.naturalengland.org.uk/publications/nca/the_fens.aspx	Existing landscape character assessments covering the geographical area of the OWLP landscape.	A detailed and area-specific Landscape Character Assessment, with landscape management recommendations was commissioned by the OWLP.

Policy/Strategy/Management Mechanism	Description	Links with OWLP
NCA 88, 2011 ➢ http://www.naturalengland.org.uk/publications/nca/bedfordshire_claylands.aspx The Cambridgeshire Landscape Guidelines, 1991 ➢ http://www.cambridgeshire.gov.uk/environment/natureconservation/policy/guidelines.htm Huntingdonshire Landscape and Townscape Assessment, 2007 ➢ http://www.huntingdonshire.gov.uk/Planning/Urban%20Design/Pages/2Huntingdonshire%20Landscape%20and%20Townscape%20Assessment.aspx Kings Lynn and West Norfolk LCA, 2007 ➢ http://www.west-norfolk.gov.uk/default.aspx?page=24625		Although building on all existing landscape character assessments for the area, this provides a much more detailed study for the OWLP area.
English Heritage's National Heritage Protection Plan (NHPP), 2010-2015. ➢ http://www.english-heritage.org.uk/professional/protection/national-heritage-protection-plan/	The NHPP's Framework and Action Plan set out how English Heritage together with partners in the heritage sector will prioritise and deliver heritage protection from 2011 to 2015. Its objective is to make best use of our resources so that England's vulnerable historic environment is safeguarded in the most cost-effective way at a time of massive social, environmental, economic and technological change.	The focus on the protection of heritage assets at threat is particularly relevant to the scheduled monuments in the OWLP area.
English Heritage's Heritage at Risk National Strategy 2011-2015 ➢ http://www.english-heritage.org.uk/publications/eh-har-strategy-2011-15/har-strategy-11-15.pdf	Key objectives of the strategy are to understand why assets are at risk and aims to help the removal of heritage assets from the Risk Register. This will be about finding solutions for heritage at risk through partnerships, stimulating economic regeneration and growth, and maximising the benefit of expertise and resources.	Of the 14 Scheduled Monuments (SAMs) in the OWLP area, 1o of which are classified as at 'High' risk and 2 at 'Medium' Risk. These are bowl barrows, round barrows, oval barrows and long barrows at risk from agricultural cultivation/deep ploughing, as well as the Civil War Bulwark at Earith, at threat from flooding and scrub encroachment.
Common Agricultural Policy (CAP)	CAP is concerned with ensuring that farmers are economically secure and produce enough food to enable prices to be affordable for consumers. Recently there has been a move	The Fen's landscape is renowned for its farming due to its fertile soils. However, the environment has degraded due to agricultural intensification. The

Policy/Strategy/Management Mechanism	Description	Links with OWLP
	towards securing the role of farmers managing the environment especially as Natura 2000 sites can comprise of agricultural land. In 2013 changes have been proposed for the new policy, to start in 2014, which will transform the way that funding is distributed, looking to "green" farming and ensuring that farmers are secure in their position in food production.	OWLP aims to work with farmers to try and manage the landscape which will aid the implementation of the CAP and promote sustainable farming practices. Through the Fens Adventurers Rural Development Programme for England (RDPE), held in-house at Cambridgeshire ACRE, the partnership has an additional route for close working relationship with local farmers and landowners.
Environmental Stewardship schemes: Entry Level ➢ http://publications.naturalengland.org.uk/publication/2798159?category=45001 Higher ➢ http://publications.naturalengland.org.uk/publication/2827091 Organic ➢ http://publications.naturalengland.org.uk/publication/2810267	Environmental Stewardship Schemes provide funding for farmers or land owners throughout England who practice agri-environment farming. Both the Entry Level and Organic Entry Level schemes last for five years and focus on the conservation of wildlife; maintenance and enhancement of landscape quality and character; protection of the historic environment; protection of natural resources and; response to climate change by protecting existing carbon stocks and encouraging carbon sequestration and environmental adaptation. The Higher Entry Level Scheme is for 10 years and involves a higher level of management where direct advice and support is offered to managers and agreements are tailored to the local circumstances. It focuses on maintenance, restoration and creation of habitats.	There is already a large uptake of environmental stewardship within the OWLP area. Therefore, as with the CAP, the OWLP will work with farmers to help them practice greener farming. Additionally, the LP will encourage farmer who are not already practicing green farming to move in that direction.
Fenland Farmland Bird Recovery Project (RSPB) ➢ http://www.rspb.org.uk/ourwork/projects/details/218989-fenland-farmland-bird-recovery-project	The Fenland Farmland Bird Recovery Project provides free help and advice for farmers, their agents and advisors, to create and manage habitat for farmland birds and other wildlife via Environmental Stewardship.	The Landscape Partnership (LP) area is located in one of the top 'farmland bird hotspots' in England, supporting all six declining species of the 'arable assemblage'. The RSPB has been delivering on-farm advice and securing Environmental Stewardship schemes through the Fenland Farmland Bird Recovery Project since 2008. As a result, a high proportion of farmers whose land falls in the footprint of the OWLP area already deliver and practice high-quality wildlife-friendly farming techniques.

1.5.5 Relevant Management Strategies – Green Infrastructure, Transport and Tourism

Policy/Strategy/Management Mechanism	Description	Links with OWLP
Cambridgeshire Green Infrastructure Strategy, 2011, ➢ http://www.cambridgeshirehorizons.co.uk/our_challenge/GIS.aspx	20-year masterplan to enhance the natural environment for both residents and wildlife. The Strategy is designed to assist in shaping and co-ordinating the delivery of Green Infrastructure in the county and forms part of the evidence base for local planning authorities to help with preparing local planning policy to support Green Infrastructure delivery. The strategy demonstrates how Green Infrastructure can be used to help achieve four objectives: 1. To reverse the decline in biodiversity; 2. To mitigate and adapt to climate change; 3. To promote sustainable growth and economic development; 4. To support healthy living and well-being. The Green Infrastructure Strategy for the Cambridge Sub-Region divides the area in 6 distinct strategic areas. The strategy gives the development of more green space in the southern part of the OWLP area a high priority. This is particularly linked to population growth and people accessing the countryside for recreation and wellbeing.	Both the Ouse Washes and Fen Drayton Lakes/Ouse Fen are considered key target areas for biodiversity and public access enhancement and creation, with the following opportunities identified for the target areas: *Ouse Washes*: • Biodiversity: opportunities to safeguard existing habitat and to create new habitat either side of the Washes to mitigate against an increased frequency of flooding impacting on existing habitats; • Climate Change: opportunities to seek solutions to maintain the different functions of the area in the face of climate change; • Green Infrastructure Gateways: good links via existing footpaths to the Ouse Valley Way and Great Ouse Wetland sites, including Hanson RSPB wetland project at Needingworth and Fen Drayton, accessible from the villages of Earith, Sutton and Mepal and via the navigable waterway. There are opportunities to enhance the navigable waterway; • Heritage: opportunities exist to promote the history of the drainage of the fens as the Washes are an important part of this history; • Landscape: can be maintained by management to retain the long wide unimpeded open views typical of traditional fenland landscape; • Publicly Accessible Open Space: access is

Policy/Strategy/Management Mechanism	Description	Links with OWLP
		restricted to banks with opportunities to develop signage and facilities at key points in Earith, Sutton and Mepal; • Rights of Way: linkages with the Ouse Valley Way exist at Earith and there are opportunities to develop linkages to Chatteris and March. *Fen Drayton:* • Biodiversity: improving habitats to increase biodiversity benefits across disused mineral site and flood meadows; • Climate Change: enhancing the awareness of climate change and the importance of the site for flood risk management; • Green Infrastructure Gateways: providing easy access to nature from Cambridge and St Ives (including along navigable waterways) as well as the proposed new development at Northstowe via The Busway; • Heritage: linking local people and visitors to the wildlife and history of the Fens through this easily accessible site; • Landscape: enhancement of the landscape around the extensive series of man-made lakes from former mineral workings and safeguarding of typical flood meadows along River Great Ouse; • Publicly Accessible Open Space: enhancement of a network of paths and bridleways around the man-made lakes and along the River Ouse with easy access and facilities; • Rights of Way: development of strong links with The Busway and the river navigations in the area.
King's Lynn & West Norfolk's Green Infrastructure	King's Lynn and West Norfolk Green Infrastructure Strategy	A number of objectives link to the aims of the OWLP

Policy/Strategy/Management Mechanism	Description	Links with OWLP
Strategy, 2010 ➢ http://www.west-norfolk.gov.uk/default.aspx?page=25781	covers the Denver Sluice area of the OWLP area and has the vision to "safeguard our justly famous natural and historic environment". "We want to build connections with other local and regional economies, reduce reliance on the car, and prepare ourselves for the challenges of climate change."	including: extending publicly accessible routes supporting the development of a Fens Waterways link for recreation, tourism and the environment and enhancing the recreational value of areas of accessible natural green space, whilst conserving and, where appropriate enhancing their landscape, wildlife and historic value. The 'Fens Waterways Link – Ouse to Nene' project, to create a new circular waterway link to support recreation, tourism and biodiversity through the Fens, is seen as a high priority. Medium priority projects include the Denver Waterways project, which would focus on recreation, biodiversity and tourism in the Denver Sluice and Lock area.
Norfolk's 3rd Local Transport Plan, 'Connecting Norfolk', 2011 – 2026 ➢ http://www.norfolk.gov.uk/Travel_and_transport/Transport_future_for_norfolk/Local_Transport_Plan/index.htm	This strategy identifies six priorities for transport in the county: • Maintaining and managing the highway network • Delivering sustainable growth • Enhancing strategic connections • Reducing emissions • Improving road safety • Improving accessibility	The OWLP is keen to address the poor rural public transport facilities in the area. The rural nature of much of Norfolk means that many people are reliant on the car as their primary means of transport. A significant number of people do, however, not own a car and are thus reliant on local service provision, walking, cycling or public transport availability. Priorities for accessibility include: • Achieving a shift towards more demand responsive transport in rural areas; • Broadening acceptance of shared travel options like car sharing, car clubs and demand responsive travel; • Facilitating walking and cycling access to key services and employment opportunities; • A greater proportion of tourists arriving and travelling in Norfolk by public transport, walking or cycling; • Enhancing the community's role in tackling poor

Policy/Strategy/Management Mechanism	Description	Links with OWLP
		accessibility.
Cambridgeshire Local Transport Plan 3, 2011 – 2026 ➢ http://www.cambridgeshire.gov.uk/transport/strategies/transport-plans/local+transport+plan.htm	This strategy focuses on: • Improving the reliability of journey times; • Reducing the length of the commute and the need to travel by private car; • Making sustainable modes of transport a viable and attractive alternative to the private car; • Future-proofing our maintenance strategy and new transport infrastructure to cope with the effects of climate change; • Ensuring people – especially those at risk of social exclusion – can access the services they need within reasonable time, cost and effort wherever they live in the county; • Addressing the main causes of road accidents in Cambridgeshire; • Protecting and enhancing the natural environment by minimising the environmental impact of transport; • Influencing national and local decisions on land-use and transport planning that impact on routes through Cambridgeshire.	The OWLP is keen to address the poor rural public transport facilities in the area. Relevant objectives are: • Particularly in rural areas, access to services is an issue that needs to be addressed; • Develop sustainable networks for walking and cycling to create health and environmental benefits; • Committed to enhancing the natural environment to ensure Cambridgeshire is a pleasant place for people to live and work and offers opportunities for recreation while protecting and creating habitats for flora and fauna. • Ensure that people and communities can access and gain benefit from the built and buried historic environment.
Transport Strategy for South Cambridgeshire and Cambridge, 2013 – 2031 (draft, in consultation) ➢ http://www.cambridgeshire.gov.uk/transport/strategies/transport-plans/Transport+Strategy+for+Cambridge+and+South+Cambridgeshire.htm	This strategy puts proposals in place to improve transport in Cambridge and South Cambridgeshire. For South Cambridgeshire this plan proposes: • Ensure that main transport routes into Cambridge have good, high-quality public transport. • Link villages with public transport along busy transport routes. • Enable more people to walk and cycle and ensure cycle networks are more joined up. • Encourage more people to car share. • Support more locally led transport solutions in remote areas where conventional bus services are not viable.	This strategy should help strengthen the case for improvements in the OWLP area which is, overall, poorly served by public transport. The strategy approach for rural areas includes: • Creating a cycling and walking network that connects major employment sites, transport interchanges, secondary schools and key visitor sites; • Identifying ways of working in partnership with local groups to identify new ways of funding network development; • Working with landowners to formally designate new routes;

Policy/Strategy/Management Mechanism	Description	Links with OWLP
		• Enabling effective provision of linear access for walking, riding, cycling and boating from where people live to the countryside and key destinations; • Promote walking in the countryside through publicity and joint projects, including guided walks and organised events.
Norfolk 'Rights of Way Improvement Plan 2007-2017'	This plan has the following objectives: • Develop a well signed, maintained and easily accessible network; • Develop and maintain an integrated network that provides for the requirements of all users; • Improve promotion, understanding and use of the network; • Encourage community involvement in improving and maintaining local rights of way; • Develop a safe network of local rights of way; • Prepare and make publicly available an up to date digitised Definitive Map; • Protect and enhance biodiversity associated with the network of public rights of way.	The OWLP is keen to encourage the use of the existing and help initiatives for the extension of the current Rights of Way network in and around the OWLP area.
Cambridgeshire Rights of Way Improvement Plan (ROWIP), 2006 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/0027C2F5-876C-4DF7-AD0A-EA24B476CFEB/0/FullwebsitePDFversion.pdf	"With no National Parks, no Areas of Outstanding Natural Beauty, no National Trails, no Mountain/Moor/Heath or Down in the sense of 'Open Country', no Forest Parks and no coastline, Cambridgeshire is often accused of being flat and boring...try to bring out what is distinctive about our county, and why in the absence of other access provision, improving the rights of way network is uniquely important to the people of Cambridgeshire as the county moves into the 21st century." Some key issues identified during consultation for this Plan: • Rights of way (RoW) routes are fragmented, particularly in the north of the county; • Lack of circular routes for walking and cycling is seen as an	Proposed network improvements: • Make the countryside more accessible to everyone; • Make the Rights of Way network safer to use; • Prevent new development from damaging the network; • Provide up to date, accurate and integrated information; • Join up the network by filling in the gaps; • Manage access with farming, conservation, heritage and crime in mind;

Policy/Strategy/Management Mechanism	Description	Links with OWLP
	issue; • Important to publish information about accessible routes for wheelchair users; • There is some conflict between those who use the RoW (e.g. walkers and cyclists) and farmers; • Farmers are taking increasing responsibility for the maintenance of RoW, but feel this work is not respected or acknowledged by the public; • Maps may be out of date and RoW unclear.	• Develop the Definitive Map so it is reliable, accurate and up to date; • Make using the Rights of Way Network straightforward, enjoyable and inspiring.
Fens Waterways Link, http://www.fenswaterways.com/ Fens Waterways Link, Implementation Plan, 2004 http://www.fenswaterways.com/portals/0/docs/implementation_plan.pdf	The Fens Waterways Link is a Fens-wide strategy, which will open up 240 km of waterways, 80 km of new waterway and increase access to 160 km. This link will connect cathedral cities and market tows across the Fens, create new circular waterway for recreation, tourism and the environment. Working with other waterway regeneration schemes, the Link will create a number of new circular routes for regional boating as well as wider opportunities for recreation, tourism, learning and the environment. The new waterway will be sympathetic to the character and history of the Fens and sensitively linked with the water environment, promoting a better quality of life. It will put the Fens on the map as a nationally recognised destination, as well known as the Norfolk Broads. Completion of the link is expected to take 15-20 years.	The OWLP will work closely with the Fens Waterways Link, to ensure that waterways tourism is improved in the area and important access hubs such as Denver Sluices Complex are strengthened.
River Great Ouse Waterway Plan; Environment Agency, 2006-2011 ➢ http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/gean1205bkbr-e-e.pdf	Aiming to maintain, improve and develop river navigation in a sustainable manner: • Increase the economic and social benefits offered by waterways, maximising regeneration; • Encourage people to make use of the inland waterways for leisure and recreation, tourism and sport; • Protect historic buildings and areas; • Maintain and enhance biodiversity and	• Link with OWLP objectives to improve access and attract inward investment. • "Working with the Fens Tourism Group and others, we will seek to enhance the leisure and tourism potential of the area." • The plan has specific heritage targets:- include heritage attractions in promotional material; manage Environment Agency land buildings and structures of historic interest; develop heritage

Policy/Strategy/Management Mechanism	Description	Links with OWLP
	landscape value; • Encourage freight and passenger transport by boat.	trails with key partners; provide interpretation boards at relevant sites.
West Norfolk Tourism Strategy, 2005-2010 ➢ http://www.west-norfolk.gov.uk/pdf/West_norfolk_tourism_strategy.pdf	The aims of the strategy are to sustain existing tourist markets already attracted to the area, and to create new markets where appropriate. Development should be sustainable and bring social, economic and environmental wellbeing.	Promoting the area as a tourist destination
Greater Cambridge and Peterborough Tourism Strategy and Action Plan, 2007	The strategy was written by 'The Tourism Company' and commissioned by the Greater Cambridge and Peterborough Sub-Regional Economic Partnerships as a vehicle for local authorities and the private sector to work together. The focus is on how the image of Cambridge, as a world leading centre for science and learning, could be used more creatively to benefit a wider area, generating and spreading tourism spending while also addressing the management challenges in and around the city. The strategy and action plan are mentioned in the Greater Cambridge Sub-Regional Economic Strategy (see below).	Of particular relevance is 'Bring the Fens to life', which aims to promote the unique landscape and distinctive heritage of the Fens through the following areas of action: • Support the Fens wetland restoration projects. (Great Fen Project, Wicken Vision, RSPB and others) • Develop a co-ordinated access and interpretation plan for the (southern) Fens, and support its implementation. • Support a sustainable rural tourism development programme for the Fens. (e.g. local events, markets, farm based accommodation, circular walks)
Fenland Tourism Strategy, 2007-2010 ➢ http://www.fenland.gov.uk/aksfenland/images/att2695.pdf A new Fenland Tourism Strategy is being drafted.	This strategy identified 6 strategic outcomes. • Improve on research, information and communications • Build on destination, branding and promotion • Improve accommodation, catering and venues • Develop themes, attractions and events • Increase enterprise support, training and visitor placement • Develop effective partnership working	Although this strategy is no longer in date, presumably the aims will be similar in the next one. The two areas that are of particular relevance to the OWLP are: • Build on destination, branding and promotion • Develop themes, attractions and events
Fenland Leisure Strategy, 2013-2018 ➢ http://www.fenland.gov.uk/leisure/CHttpHandler.ashx?id=7745&p=0	The strategy sets out the following Strategic Aims: • Continue to provide an efficient service • More people, more active, more often • Supporting community sport	• 'Linking with partners to encourage tourism and economic activity', is where the OWLP could most link with Fenland DC Leisure Strategy. The strategy explains that by improving provision for community events, leisure opportunities and

Policy/Strategy/Management Mechanism	Description	Links with OWLP
	• Linking with partners to encourage tourism and economic activity	access to countryside and parks, the image of Fenland as a great place to live, work and visit will be increased, thereby adding to economic activity. • Overall the strategy focuses more on providing opportunities for sport rather than leisure activities such as walking, and therefore a large part isn't relevant to the OWLP.

1.5.6 Relevant Management Strategies – Planning, Economy and Communities

Policy/Strategy/Management Mechanism	Description	Links with OWLP
National Planning Policy Framework (NPPF) ➢ https://www.gov.uk/government/policies/making-the-planning-system-work-more-efficiently-and-effectively/supporting-pages/national-planning-policy-framework	The National Planning Policy Framework focuses on ensuring sustainable development whilst achieving a strong economy and maintaining and improving well-being. The NPPF looks to achieve this through: 1) Building a strong and competitive economy; 2) Ensuring the vitality of town centres; 3) Supporting a prosperous rural economy; 4) Promoting sustainable transport; 5) Supporting high quality communications infrastructure; 6) Delivering a wide choice of high quality homes; 7) Requiring good design; 8) Promoting healthy communities; 9) Protecting Green Belt land; 10) Meeting the challenge of climate change, flooding and coastal change; 11) Conserving and enhancing the natural environment; 12) Conserving and enhancing the historic environment; 13) Facilitating the sustainable use of minerals.	The following points raised by the NPPF are relevant to the OWLP and are listed in order relevance: 11 – within the OWLP there are numerous designations that will be further protected through the LP scheme; 12 – Throughout the Fens there is lots of important build and buried heritage. The OWLP area contains important heritage features; 10 – The management and resultant future preservation of the OWLP area depends on flood management and climate change mitigation. Consequently, the LP scheme will address these issues; 3 – Farming is integral to the Fens landscape and farming in the Fens is integral to the UK economy. The LP scheme will work with farmers to support them in greener farming practices; 4 – The Ouse Washes needs more sustainable transport. Through increasing the profile of the region to tourism, transport will increase. Thus, the scheme

Policy/Strategy/Management Mechanism	Description	Links with OWLP
		will look to promote and where practicable, encourage the implementation of sustainable transport; 13 – The Fens is important for mineral extraction, especially sand and gravel. Within the OWLP area, mineral extraction will occur. These sites will be resorted through the Nature After Minerals Programme often leading to better biodiversity and water management within and area.
South Cambridgeshire Local Plan, 2011-2031; Proposed Submission, 2013: ➢ http://www.scambs.gov.uk/sites/www.scambs.gov.uk/files/documents/Proposed%20Submission%20Local%20Plan%20%28for%20website%29.pdf Fenland District Council Local Plan, Proposed submission, 2013: ➢ http://www.fenland.gov.uk/CHttpHandler.ashx?id=7781&p=0 Huntingdonshire Local Plan, 2013 – 2036; Draft Local Plan: ➢ http://www.huntingdonshire.gov.uk/Planning/Planning%20Policy/Pages/LocalPlanto2036.aspx East Cambridgeshire District Council; Draft Local Plan: ➢ http://www.eastcambs.gov.uk/local-development-framework/draft-local-plan West Norfolk & King's Lynn Borough Council; Local Development Framework, adopted 2011 ➢ http://www.west-norfolk.gov.uk/default.aspx?page=24520	All Four District Councils in Cambridgeshire are in the final stages of consultation on their draft Local Plans, with sets of policies that will guide planning and the future of each district. West Norfolk & King's Lynn Borough Council adopted its Core Strategy in 2011.	It is essential that the OWLP works together with all five Local authorities to ensure that recommendations for future management of the area are aligned with their policies and are taken forward by the LAs.

Policy/Strategy/Management Mechanism	Description	Links with OWLP
Cambridgeshire & Peterborough Minerals & Waste Plan, July 2011 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/76AE7877-5A20-44E9-97CF-34BCF0017FE2/0/CoreStrategyAdopted19July2011.pdf Norfolk Minerals & Waste Plan, adopted 2011 ➢ http://www.norfolk.gov.uk/Environment/Planning/Mineral_and_waste_planning/Minerals_and_waste_development_framework/index.htm	The Cambridgeshire and Peterborough Minerals and Waste Plan details how mineral extraction is going to be changed and managed throughout the region with a view to ensuring enough is extracted but also, that when extraction occurs, it is done through best practice. Additionally, the document outlines how waste will be managed throughout the region to ensure people have access and minimises the potential damage that could occur to the environment. Block Fen/Langwood Fen was recognised as an important site and a subsequent plan was produced just for the location (see below) The Norfolk Minerals & Waste Plan: Due to projected population increase within the region, Norfolk Country Council has highlighted that increasing mineral extraction and waste management will benefit the region through providing the materials needed to expand infrastructure and by creating jobs. The document outlines the management strategies for these activities and how to achieve them sustainably.	Sand and gravel extraction is proposed by the Cambridge and Peterborough within the OWLP area. The key site is the Block Fen/Langwood Fen extraction site, located in the central region of the LP area. The Block Fen/Langwood Fen Master Plan has been identified as a key area for sand and gravel extraction and a site for construction and demolition waste management. It is relevant to the OWLP because the plan wishes to improve the 'unfavourable' dual role of wetland and flood water storage condition that the Ouse Washes Ramsar site is currently in. This will be achieved through restoring sites of mineral extraction. An additional location suitable for gravel extraction has also been identified at Needingworth.
Greater Cambridge Sub-Regional Economic Strategy, 2009-2012 ➢ http://www.cambridgeshire.gov.uk/NR/rdonlyres/583EF36A-A106-43BF-9572-730578C02BDE/0/SRES200912.pdf	The strategy aims to drive sustainable economic development within Greater Cambridge, an area spanning from Bishop's Stortford in the South to Wisbech in the North.	
Greater Cambridgeshire Greater Peterborough Enterprise Partnership (LEP) ➢ Operational plan: http://www.yourlocalenterprisepartnership.co.uk/wp-content/uploads/2012/04/FINAL-GCGPEP-OPERATIONAL-PLAN-2012-13.pdf New Anglia (Norfolk and Suffolk) – Local Enterprise Partnership:	Local Enterprise Partnerships look to promote and assist sustainable economic growth within a region. The Greater Cambridgeshire and Greater Peterborough LEP aims to create economic growth through businesses with a local focus in order to benefit the immediate community. The New Anglia LEP is focused on increasing economic growth by investing in low carbon energies, natural capital and climate change adaptation services.	The OWLP scheme aims to implement programmes where individuals can volunteer and enhance their skills. The OWLP also looks to increase tourism and inward investment based on a green economy and tourism industry which fits into the New Anglia's Natural Capital aims.

Policy/Strategy/Management Mechanism	Description	Links with OWLP
➢ http://www.newanglia.co.uk/Assets/Files/Content/2012-06-01%20Final%20New_Anglia_Manifesto_2.pdf		
Huntingdonshire Local Economy Strategy, 2008-2015 ➢ http://www.huntingdonshire.gov.uk/SiteCollectionDocuments/HDCCMS/Documents/Business%20and%20Economic%20Development%20Documents/Local%20Economy%20Strategy%2009.pdf	The Local Economy Strategy is linked to the Huntingdonshire Sustainable Community Strategy. It aims to support the visions of the community strategy be maintaining a strong and sustainable local economy. One area of the plan is 'visitor development'. The objectives are: • Encourage local people to visit local attractions • Encourage business visitors • Market Huntingdonshire to prospective businesses • Improve the mix of attractions, facilities and leisure opportunities • Develop attractions and services for visitors, specifically overnight stay visitors	• Some parts of the Huntingdonshire are already highly visited, others are less so. The district has a wealth of natural and built heritage including the waterways, countryside, nature reserves, cycle ways and bridle paths, historical market towns and other visitor attractions. The way visitor development is promoted should seek to spread benefits over the district and throughout the year.
Localism Act, 2011	This Act contains measures that give new freedoms and flexibilities to local government and new rights and powers to communities and individuals. This particular links to the reform of the planning system and a number of new 'community rights', to encourage social action through local leadership and voluntary effort.	The OWLP supports the 'Big Society' ambitions by promoting and supporting community involvement which will be needed to encourage a better understanding of the issues facing the natural and built heritage.
West Norfolk Sustainable Community Strategy, 2007-2030 ➢ http://www.west-norfolk.gov.uk/pdf/Community%20Strategy%2017th%20Jan%202008.pdf	The vision has three interlocking strands; economic, environmental, social. Aims and objectives of the strategy come under the following headings. • Aspiring and Skilled • Competitive and Enterprising • Accessible and Connected • Cohesive and Equitable • Attractive and Sustainable • Collaboration and Leadership	• Increase participation in lifelong learning • Improve tourism offer by better use of the local environment • A sense of place, neighbourhoods with a local distinctiveness • A strong and inclusive community and voluntary sector • Opportunities to access cultural activities including leisure, sport, recreation, arts and other community activities • Recognising the area's important natural heritage

Policy/Strategy/Management Mechanism	Description	Links with OWLP
		• Protecting and improving local bio-diversity • Enhanced preservation, interpretation and access to our heritage • Reduced dependence on cars with facilities to encourage safe local walking and cycling
Rural Strategy for Cambridgeshire (2010-2015)	This strategy is supported by all local authorities in order to plan for the future viability of rural Cambridgeshire, focusing on: preventing rural deprivation; supporting and strengthen communities by empowering social action; improving rural skills and training opportunities; adapting and mitigating against the impact of climate change and making the most of Cambridgeshire's assets.	The challenges listed all relate to that which will be tacked by a landscape scale approach in the Ouse Washes.
East Cambridgeshire Sustainable Community Strategy, 2011-2031 ➢ http://www.eastcambs.gov.uk/sites/default/files/sustainablecommunitystrategy20112031.pdf	The strategy sets out what the District Council hopes to improve in the community, and how this might be achieved. The 3 themes are: • Well-served and well-connected communities • Active and inclusive communities • Greener communities	• Promoting the business and tourism opportunities by our riversides • Supporting and promoting tourism within the district • Promoting cycling and walking • Making sure the district's historical buildings and museums are protected and promoted as places of interest to visit • Making sure that under-used green space and natural habitats are used by more members of the community • Communities take pride in their local area and help to look after it • Promoting volunteering and supporting local voluntary and community groups • Supporting and running events that help people to take pride in where they live (e.g. fêtes and festivals) • Protecting conservation areas and supporting the creation of new habitats to encourage wildlife

Policy/Strategy/Management Mechanism	Description	Links with OWLP
		• Creating a network of green and open spaces that can be used by all
South Cambridgeshire Sustainable Community Strategy, 2008-2011 ➢ https://www.cambridge.gov.uk/sites/www.cambridge.gov.uk/files/docs/south-cambridgeshire-lsp-sustainable-community-strategy.pdf	The strategy sets out the following objectives: • Active, healthy and inclusive communities • Safe and clean communities • Building successful new communities • A sustainable infrastructure and environment The strategy explains these objectives can be met, and how it will be possible to measure outcomes.	• Protecting and enhancing the environment and cleanliness of our communities • Preserving and enhancing the countryside for the benefit of people and wildlife • Improving the provision for walking and cycling in and between villages including new settlements and Cambridge City
Huntingdonshire Sustainable Community Strategy, 2008-2028 ➢ http://www.huntingdonshire.gov.uk/SiteCollectionDocuments/HDCCMS/Documents/Business%20and%20Economic%20Development%20Documents/Huntingdonshire%20Strategic%20Partnership/hps1017_-_sustainable_community_strategy_booklet_web.pdf	The strategy covers strategic themes, outcomes and objectives in 6 areas. • Growth and infrastructure • Health and wellbeing • Environment • Children and young people • Inclusive, safe and cohesive communities • Economic prosperity and skills	• Increased Cycle and footway networks • Cultural, leisure and community infrastructure and opportunities • Improve access to the countryside and green space • Enhance access to heritage • Promote community based-run activities and community involvement • Promote opportunities for local people to improve or gain skills through cultural, leisure and volunteer activities • Encourage local people to visit local attractions • Increase overnight visitor numbers

Existing Management Strategies for the OWLP area: Summary

The OWLP scheme has been strongly influenced by such strategies as the Wetland Vision for England, Fens for the Future Partnership's Strategic Plan for Fenland and the Cambridgeshire Green Infrastructure Strategy. There are many other legislation and policy documents, management strategies and management mechanisms already in place for and relevant to the OWLP landscape, to safeguard sensitive management of the biodiversity; water; flood prevention; climate change mitigation; landscape character; historic environment; farming; green infrastructure; transport; tourism; planning; economy; and communities. The links between the OWLP's aims and objectives and those in all relevant, existing documents are set out in this section.

Environmental Stewardship scheme uptake is already high in the area. In addition, there are several conservation organisations that own, manage or operate in the scheme area. Within the partnership there is a wealth of skills and experience in conservation land management, heritage conservation and management, and community engagement, with a large proportion of the partners having long-term professional involvement in the area.