estuarine marshland

Integrated landscape character

MAP 26a - Estuarine Marshland Key Plan

The low-lying Estuarine Marshland landscape type indicates the extent of the former Romano-British estuary within The Broads. This, like the majority of the Broads, originated as large-scale (hand dug) peat workings which became flooded in medieval times. There was enormous demand for peat, which was the principal source of fuel for what was then one of the most densely populated parts of England. Once the pits had flooded, the marshmen living in this lowlying area tended cattle on the marshes, cut reed, sedge, marsh hay and litter and maintained dykes and drainage mills. Fishing and wildfowl also provided a source of income.

The area has an open, exposed character. The River Thurne is thought to have previously flowed out to sea along the line of the Hundred Stream between Horsey and Winterton and the old course of the river is still visible as a wide, rush-filled depression. Rather than natural tributaries flowing towards the Thurne, this is an area of New Cuts and Commissioner's Drains, with drainage 'levels' subdivided by a rectilinear grid of drainage dykes. The only sinuous element is the natural edge of the floodplain. Each of the planned, straight dykes has a derelict drainage windmill and/or later pumping equipment positioned in association with embanked water courses. The Brograve family was responsible for drainage here during the 18th century and the Brograve Mill dates from 1771. The Waxham New Cut which borders the area was developed in the 1820s, partly to extend navigation and partly as a main drain. In the second half of the 20th century the adjacent Brograve and Somerton Levels have been reorganised and deep drained to the extent that the land is now notably lower than surrounding areas.

The straight dykes subdivide small pastures and some arable fields into a rectilinear pattern of enclosure. This is relatively wet land, underlain by alluvial deposits and with silty clay soils. The grass is often tussocky, with areas of transitional scrub and reed and sedge beds. Marsh gates mark crossing points between individual marshes. There is a transition to open fen on the fringes of the coastal sand dunes. Saline influences mean the soils in this area are more mixed than in peat fen areas elsewhere on the Broads and this contributes to the open character of the marshy grassland. There is a gradual transition to the scrub – woodland mosaic which buffers the Winterton dunes to the south.

The area includes distinctive 'holmes' or islands of higher land formed by glacial sand and gravel deposits. There is also a transition to higher land on the gently sloping valley sides to the south of the line of the Hundred Stream (from Martham towards Winterton). The land rises quite steeply in places to around 20m OD, allowing views across the area. Small blocks of carr woodland are commonly found along the break of slope which marks the transition

Integrated
landscape character (continued)

to higher land. This is a relatively tranquil, remote area. It is very open and proximity to the coastline brings strong winds and an added sense of exposure. There is a complete absence of any significant built development. Land-based access is quite limited and boat traffic is restricted (further downstream) by the low arch of the medieval Potter Heigham Bridge.

Landscape sensitivity and change

Part of the Estuarine Marshland landscape is within the eastern outlier of the Norfolk Coast AONB. This landscape type is an amalgamation of several of the very detailed landscape types classified in the Broads Executive Authority Landscape Character Assessment – a map showing the component detailed landscape types and the way they have been amalgamated is included in Section 2 of this Integrated Landscape Guidance. Key environmental assets which are sensitive to change are:

- The natural sinuous old course of the river, which is a wide rush-filled depression. It is a strong visual feature in an otherwise rectilinear landscape pattern and a valuable part of the wetland ecological network.
- Landmark drainage windmills – eg Horsey drainage mill.
- Rush pastures, fen, reed beds, sedge beds and natural scrub-grassland mosaics, all of which are valuable wetland habitats. Rush pastures, fens, purple moor grass, reed-beds, carr woodlands and grazing marsh are all BAP priority habitats.
- The distinctive landscape setting of Horsey – a 'holme' of relatively elevated land, with a small-scale network of hedged pastures surrounding a prominent settlement (a landmark and a viewpoint).
- Views from elevated valley side slopes near West Somerton.
- Tranquil, remote character, which becomes increasingly more exposed towards the coastal sand dunes.

Variations in character

Variations in character and inherent landscape sensitivities are highlighted in the following distinctive landscape character areas within the Estuarine Marshland landscape type (AONB area)

Landscape character area	Distinctive character	Inherent sensitivity
Horsey & Somerton - EM1	Horsey village is sited on a 'holme' and the fields surrounding the settlement have a traditional small-scale hedged pattern of enclosure. Horsey drainage mill is a National Trust property and local landmark. The farm of Somerton Holmes is on a relatively elevated area of open farmland, with a more simple large scale drainage pattern. This gently sloping ridge of farmland extends southwards and marks the southern edge of the Thurne Valley. The Waxham New Cut was developed in the 1820s between Horsey and Lound Bridge, partly extending navigation and partly as a main drain. In the second half of the 20th century, the Somerton levels were reorganised and deep drained and topographical data shows this area of land has become notably lower than surrounding areas.	• Landscape setting of Horsey – small-scale hedged pastures on holme • Views to and landscape setting of Horsey Mill • Extensive mosaic of valuable wetland habitats.

Landscape character area	Distinctive character	Inherent sensitivity
Coastal Fen - EM2	Open, windswept marshy grassland and scrub with an exceptionally exposed character on the fringes of the coastal dunes.	• Acidic and neutral marshy grassland • Reedbeds • Exposed, natural open character
West Somerton Farmland - EM3	Distinctive, gently sloping valley sides marking the southern side of the Thurne River Valley. Views over the Broads to the north. Transition to 'settled farmland' in Great Yarmouth Borough to the south. Village of West Somerton with a small-scale pattern of fields, hedges and woodland contrasts wide flat, open 'levels' within Broads area to the north.	• Northward views from valley slopes to the south of the Thurne River • Landscape setting of West Somerton

Key forces for change

ARABLE FARMLAND HAS SOMETIMES REPLACED THE NATURAL MOSAIC OF WETLAND HABITAT

EXISTING

- Loss of historic drainage patterns due to water level management changes – as a result of farming or conservation.
- Land shrinkage due to drought, water abstraction and drainage.
- Sea level rise and coastal defence realignment, leadisng to inundation of freshwater marshes.
- Lack of freshwater in summer months.
- Changes to water quality – brackish water intrusion.

reintroduce ditch and pastures as part of wider flood attenuation and management strategies

buffer zones of semi natural habitat reduce the impact of eutrophication

GUIDANCE

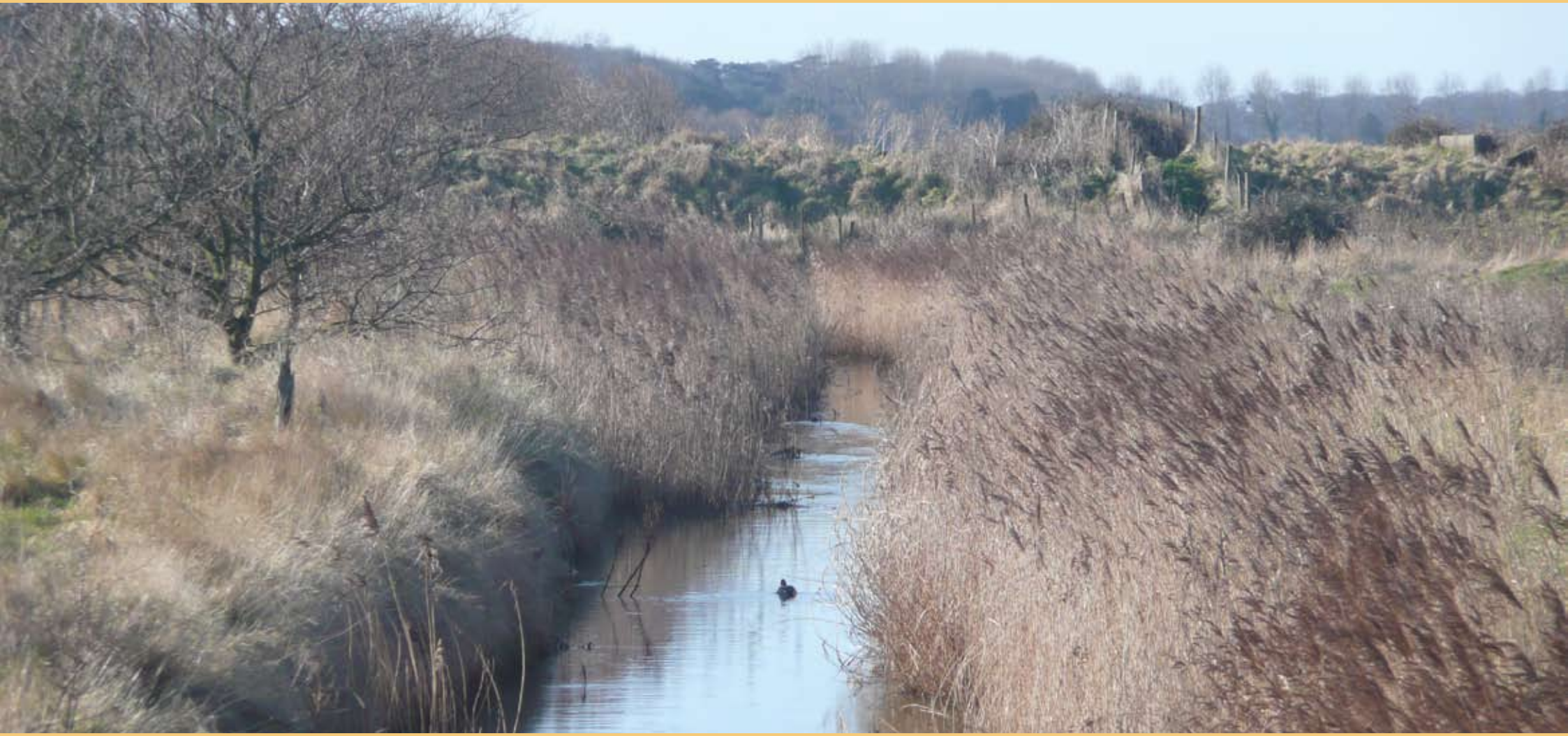
Key forces for change (continued)

- Changes to the agricultural economy and particularly the introduction of agri-environmental grants, have led to positive changes in landscape character – reinstatement or conservation of drainage ditches, hedgerows, carr woodlands and arable reversion to pasture.
- Decline of historic built features.
- Development pressures eg for fishing lakes and other leisure related uses.
- Decline of traditional land management practices – depends on the future of the reed and sedge industry.
- Potential impact of biofuel production.
- Wetland creation and enhancement projects - for instance managed change from arable farmlandto freshwater marshes as compensation for the loss of designated habitats elsewhere.
- Land drainage, infrastructure and management – Broadland Flood Alleviation Project.
- Possible sand and gravel extraction – on holmes and valley side slopes.

20 year vision

managed change

A grid of small damp pastures bordered by drainage ditches with a transition to tussocky grass, scrub, reed-beds and pools of open water. Small blocks of carr woodland mark the break of slope to island ‘holmes’ of higher land from which there are long views across a remote, tranquil open marshland. If necessary, the extent of freshwater grazing marsh and reedbeds will increase as a managed response to coastal squeeze.



Integrated landscape guidance

1 Conserve and enhance the mosaic of wetland habitats – fen, neutral and acidic marshy grassland, carr woodland, reed-beds, sedge beds, ditches and grazing marsh, which is of exceptional biodiversity value.

- Where possible, landcover changes should seek to reflect and enhance the existing distinctive and historic transitions in landform and landcover, particularly the break between the valley floor and valley sides.
- Give priority to the conservation and enhancement of rush pastures, fens, purple moor grass, reed-beds, carr woodlands and grazing marsh, all of which are BAP priority habitats.
- Seek opportunities to introduce a greater variety of wetland habitats within the grazing marshes eg ponds, wetland scrapes with reed-beds etc. The impact of coastal squeeze may provide opportunities for managed conversionof arable farmland to freshwater grazing marshes and reedbeds in compensation for the loss of designated habitats elsewhere.
- Seek opportunities to extend the small ditch bordered floodplain pastures and associated habitats via arable reversion and/or new planting
- Seek opportunities to create a more naturally functioning river profile in places, through set back (partial/complete) of floodwalls, allowing controlled flooding and a more natural transition to wetland habitats.
- Create buffer zones of semi-natural habitat along the margins of floodplain pastures and encourage low input agricultural systems to reduce the possible impacts of eutrophication.
- Conserve, enhance and where possible extend wetland habitats, including drainage ditches, broads and wetland scrapes as landscape features and wildlife corridors, aiming to create inter-linked networks of ecological wetland habitats.

2 Enhance the distinctive visual and perceptual character of the landscape

- Where possible, landcover changes should seek to reflect and enhance the existing distinctive and historic transitions in landform and landcover, particularly the winding historic course of the River Thurne and the break between the floodplain and valley sides, both of which provide a sinuous natural form which contrasts with the otherwise rectilinear landscape pattern.
- Conserve and enhance all hedgerows, hedged tracks and hedgerow trees on the holmes and valley side slopes, which contrast with the wetlands and drained ‘levels’ and link the wetland habitats to those of the surrounding farmland (an important part of the inter-connected ecological network.
- New hedgerow or tree planting should aim to increase connectivity between networks of hedgerows generally and particularly with hedgerows and woodlands in adjacent landscape types.
- Encourage wide field margins within arable fields to enhance the ecological value of the hedgerows as corridors for the movement of wildlife through intensively farmed areas.

Integrated
landscape guidance (continued)

3 Conserve the character and landscape setting of the distinctive Estuarine Marshland settlements and historic built landmarks

- Avoid large-scale development on the fringes of settlements which will erode the intimate small-scale character of the rural landscape and risk being prominent in views across the low-lying, open drainage 'levels'.
- Conserve the landscape setting of historic landmarks (eg drainage mills), with careful consideration of the design of widened access roads, exterior lighting, car parks, signage etc, which can cumulatively erode the rural character of the landscape setting.
- Give priority to the conservation and enhancement of trees, hedgerows and rural features on the fringes of settlements, at the gateways to settlements (along principal roads) and in key views.
- Conserve the character of rural roads, avoiding improvements (kerbs, signage, access roads with wide sight-lines, standard road widths etc) which will erode the rural character of the landscape.
- Avoid development of agricultural buildings for urban fringe uses or conversion to residential uses in order to retain the rural character of the countryside.
- Avoid the development of major, prominent elements such as telecom masts which will detract from the remote, unspoilt character of the landscape.
- Encourage carefully designed small-scale new tree planting on the fringes of settlements which is designed to replace existing trees, screen locally intrusive structures and frame views to the surrounding countryside.
- Avoid new built development or farm structures in prominent locations.

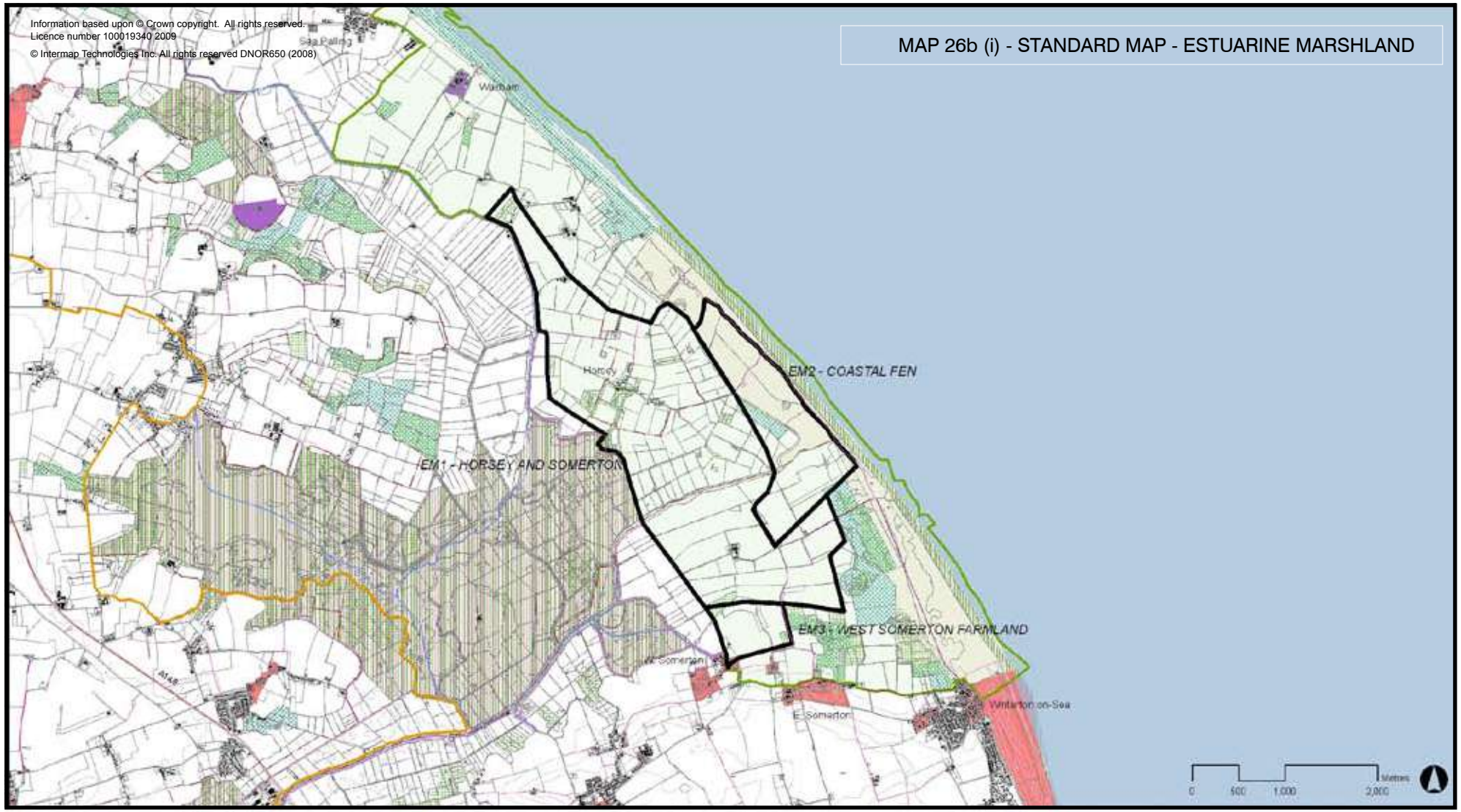
Detailed maps

- **Standard** - landform, drainage, rights of way and statutory designations
- **Biodiversity** - ecological networks [1]
- **Historic landscapes** - broad historic landscape character types [2] and data from the Historic Environment Record [3]

[1] *Norfolk Wildlife Trust on behalf of the Norfolk Biodiversity Partnership, July 2006, Ecological Network Mapping Project for Norfolk*

[2] *Norfolk Landscape Archaeology, january 2009, Norfolk Historic Landscape Character - a report on the Norfolk Landscape Characterisation (HLC) Project*

[3] *www.heritage.norfolk.gov.uk - provides a computerised, searchable database (with integrated digital mapping) of all areas of known archaeological activity, sites, finds, cropmarks, earthworks, industrial remains, structures and historic buildings in the county*



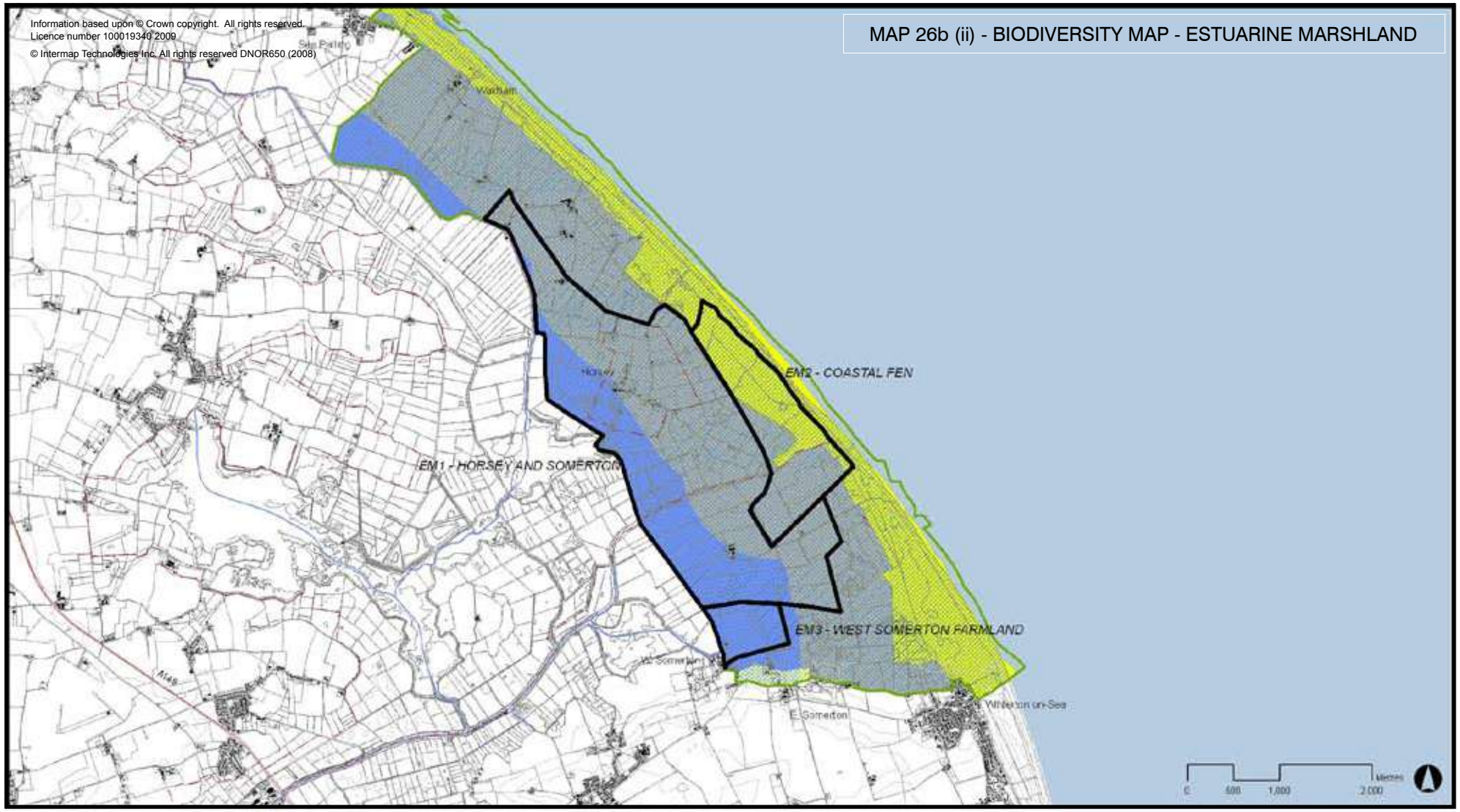
Statutory Designations
- Ramsar Site
- Special Protection Area
- Ancient Woodland
- Site of Special Scientific Interest
- County Wildlife Sites
- Local Nature Reserve
- Forestry Commission Woodland
- Special Area of Conservation

Heritage
- Scheduled Ancient Monuments
- Conservation Areas
- Historic Parks and Gardens

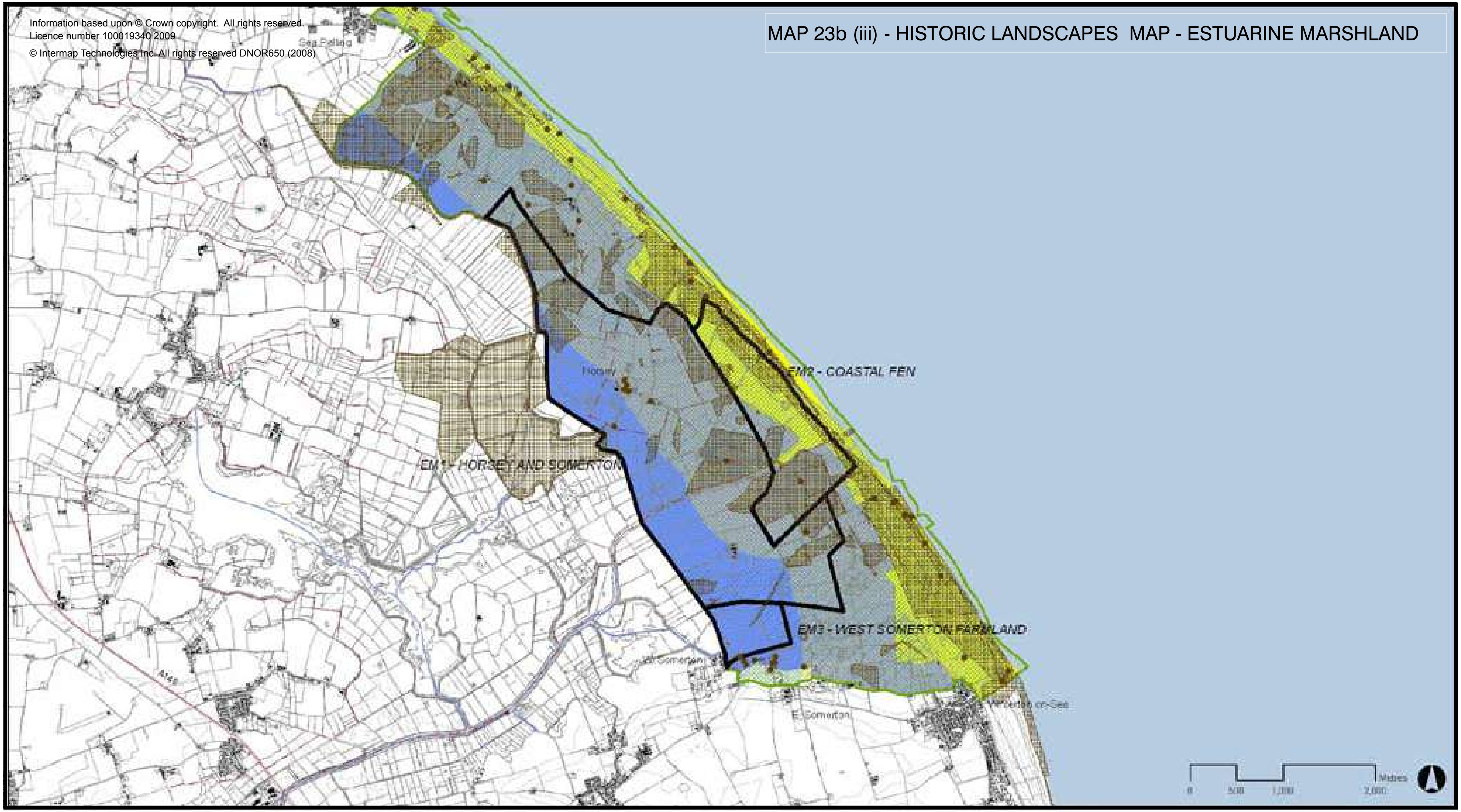
Connections
- National Cycle Route
- Cycleways
- Long Distance Path
- Footpath
- Bridleway
- Restricted Byway

Topography
- Contour Line (Interval 5 m)
- 30 m Contour Line
- 50 m Contour Line
- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

MAP 26b (ii) - BIODIVERSITY MAP - ESTUARINE MARSHLAND



- Core Woodland Area
- Zone of General Habitat Enhancement
- Zone of Grassland-Heathland -Woodland Enhancement
- Wetland Habitat Enhancement Zone
- Coastal Habitat Enhancement Zone
- Calcareous Grassland Core Area
- Core Habitat Corridors
- Paston Bam Bat Site Management Area
- Coastal Buffer Zone
- Broads & River Buffer Zone
- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries



- 18th-19th Century Enclosure
- 20th Century Agriculture
- Built up Areas - Historic
- Built up Areas - Modern
- Coastal - Drainage Enclosure
- Coastal - Managed Wetland
- Commons, Wastes, Heaths
- Historic Earthwork
- Horticulture
- Industry
- Inland - Managed Wetland
- Marginal
- Miscellaneous
- Parks, Garden, Recreation
- Water Features
- Woodland
- HER 'point'
- HER 'line'
- HER 'area'
- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries