section 02

OVERVIEW OF RELEVANT DATA

2.1

Relationship of the Guidance to previous studies

There have been a large number of studies carried out in the Norfolk Coast AONB, including the broad landscape character assessment which was included within the AONB Management Plan (2004-2009). This Guidance takes account of this earlier work, and provides a more detailed review of character and sensitivity.

Section 2.2 (Landscape character) sets out the hierarchy of landscape character assessment mapping for this part of the country. Information from these national and regional datasets has informed the AONB Guidance and has also provided the foundation for the relevant district landscape character assessments. It is these four landscape character assessments which are the key references for the current AONB Guidance. All provide a baseline inventory of variations in landscape character across the local planning authority areas and outline guidance for conserving, enhancing and/or restoring locally distinctive landscape character. They are:

- King's Lynn & West Norfolk Borough Landscape Character Assessment, March 2007 (Chris Blandford Associates)
- Landscape Character of North Norfolk – Draft Version IV, February 2008, North Norfolk District Council
- Great Yarmouth Borough Council Landscape Character Assessment – Draft, January 2008, Land Use Consultants (for Great Yarmouth Borough Council)
- Landscape Guidance for selected locations within the Broads, May 2008, (Land Use Consultants for the Broads Executive Authority

This Guidance for the Integrated Landscape Character of the Norfolk Coast AONB does not seek to override the detailed information contained in each of the district-based landscape character assessment reports; instead it summarises and presents information from the detailed reports in a consistent, user-friendly format which relates to the landscapes of the AONB. Detailed information on the methodologies used for developing the landscape character assessments, and the way they have informed policies in Local Development Frameworks, may be found in the district based landscape character assessments.

Also of relevance is a study commissioned by the Norfolk Coast Partnership which recommends a consistent approach to the development and use of landscape character assessment in the AONB[6]. This study demonstrates how historic landscape characterisation and biodiversity information can be integrated with landscape character data (an integrated landscape character assessment process) and explores the use of landscape character assessment to inform policy in the emerging Local Development Frameworks for the planning authorities within the AONB.

6 *Chris Blandford Associates in association with Alison Farmer Associates, December 2006,Towards a Co-ordinated Approach to Integrated Landscape Planning in Norfolk*

2.2

Geology & coastal geomorphology

2.2.1 Geology overview

The Norfolk Coast AONB is underlain by a concealed platform of ancient rocks, with layers of Mesozoic and Cenozoic sediments. One of the Mesozoic layers, the soft Kimmeridge Clay formation which covered the Fen basin, was excavated by Ice Age glaciers, mixed and transported southwards and eastwards to cover much of central Norfolk. Overlying the Kimmeridge Clays, a series of sands and clays form the Lower Cretaceous strata of West Norfolk and these are in turn overlain with chalk.

The chalk strata dip gently from west to east and form rolling hills just inland from the coast, rising to approximately 70m AOD. The low chalk escarpment is masked by glacial till, but the west facing dip slope forms a rolling plateau with a few shallow river valleys running westwards into the Wash. The Lower Cretacaeous bedrock outcrops on the lower slopes of the chalk in the form of the Sandringham Sands and Carstone, a type of sandstone which has been cemented by iron oxides to form an orangey-brown sandstone which is a characteristic building stone throughout the Sandringham area. The stratigraphy is exposed within the coastal cliffs at Hunstanton, where near-vertical cliffs about 25m in height are cut in Carstone, red Chalk and Lower Chalk. The Carstone forms a shore platform with rectangular jointing patterns. The Lower Chalk collapses as the cliff is undermined and topples as large tabular blocks.

Chalk bedrock is made from the remains of microscopic marine organisms that lived in a warm shallow sea that covered this area during the Cretaceous period. Chalk is a soft rock, but is relatively more resistant to erosion than the other deposits found on the North Norfolk Coast. The chalk is visible in the base of the cliffs at Weybourne, while between Sheringham and West Runton it is exposed as a wave-cut platform at low water. Associated with the chalk

The section is based on the following sources:

British Regional Geology, 1961, East Anglia & adjoining areas (4th Edition) by C. P. Chatwin, HMSO

North Norfolk District Council, 1996, The North Norfolk Coastal Environment

Geological Conservation Review, 2003, Volume 28, Chapter 11 Coastal Geomorphology of Great Britain, V.J. May & J.D. Hansom, Geological Conservation Review Volume: 28,

are bands of flints made of silica, which also originates from marine organisms that lived during the Cretaceous period. Immense pressures in the earth forced the silica to be concentrated in pores in the chalk and formed the bands of flint that can be seen in the chalk exposures. As the chalk is eroded the flints are released and, because of their hardness, they remain and accumulate on the beaches.

But the underlying geology is everywhere masked by glacial deposits, laid down during the Quaternary - the most recent of the periods on the geological time scale, which has been characterised by a number of glacial and inter-glacial stages. The Anglian glaciation was the 3rd from last glacial stage and occurred between 400,000 and 500,000 years ago. This stage was the last time that the ice sheets reached East Anglia and the glaciers left a complex mix of glacial, proglacial and periglacial deposits layered over the underlying chalk bedrock. In some places the deposits (known as 'till') are jumbled into an undifferentiated layer, but in others the action of glacial meltwaters sorted the material into recognisable layers of sand, gravel and till. The 'Cromer Ridge' between Holt and Overstrand, is a distinctive terminal moraine which marks the final extent of a major Scandanavian ice sheet. It was formed when the deposits of two glacial lobes were superimposed on one another and piled up to form a contorted ridge. The resulting Cromer Ridge is the highest land in Norfolk and the lumpy, undulating surface and diverse mix of soils results from the mix of till, sands, gravels and erratic lumps of rock.

Large fans of glacial outwash gravels formed the Salthouse and Kelling Heaths, eskers (formed by subglacial meltwater streams) in Old Hunstanton Park and near Blakeney and other outwash features in the Glaven Valley. The resulting soils are variable in quality, with outcrops of poor quality brown sands and sandy gley soils contrasting with the rich alluvial soils of the river valleys. This variation in soil quality creates conditions for different types of vegetation cover from plantation and more natural woodland to intensive arable land.

Erosion and deposition are extensive features of this coast as the coastal cliffs are eroded and the material transported along the shores as soft or loosely-aggregated glacial sands, gravel and clays. There are tracts of saltmarsh and mud flats defined by an intricate network of creeks, drains and lagoons behind the shingle bars that characterise the coast.

Detailed information on sites of geodiversity value is available via the Norfolk Coast Partnership website, with notes on their significance.

2.2.2 Coastal geomorphology

The assemblage of coastal forms along the North Norfolk Coast is an outstanding example which is internationally famous and extensively researched. Much of the area is a low upland fronted by gently sloping abandoned cliffs (from a former period of higher sea level) separated from sand and shingle beaches by extensive saltmarshes and intertidal flats. The marshes exhibit a progression of age and development from east to west, manifested through changes in marsh height and an assemblage of geomorphological features. They have been a prime research site for investigating rates of saltmarsh accretion and tidal processes.

The key geomorphological features are:

- Hunstanton to Holme-next-the-Sea – eroding Chalk and Carstone cliffs that are fronted by a wide sand and shingle beach which extends northwards beyond the cliffs to Holme-next-the-Sea
- Holme-next-the-Sea to Brancaster – an area of dunes and beach ridges behind which lie both claimed marsh and natural saltmarsh
- Scolt Head Island – the best example of a barrier island on the British coast

- Gun Hill to Wells-next-the-Sea – dominated by a line of dunes known as ‘Holkham Meals’
- Wells Channel to Blakeney Spit – a large number of small bars of sand, shingle and shells, and an unusual, recurved cuspate beach
- Blakeney Point to Sheringham – an excellent example of a recurved spit formed mainly of a single shingle ridge (over 9km in length) extending from shingle ridge at the foot of retreating till cliffs between Weybourne and Sheringham.

2.3

Landscape character

2.3.1 Key principles

The standard practical guide to landscape character assessment is Landscape Character Assessment – Guidance for England and Scotland[7]. This core reference sets out the rationale for landscape character assessment and describes the key principles underpinning the process. In particular it explains the important distinction between the objective process of landscape characterisation and the subsequent (often more subjective) process of making judgements based on knowledge of landscape character.

This Guidance, together with the detailed landscape character assessments on which it is based, provides an objective characterisation (a description, classification and map which shows variations in landscape character) and separate guidance for managing landscape change.

Landscape character assessment aims to explain what makes one area different or distinctive from another. It is typically described by reference to landscape types and landscape character areas:

- Landscape character types are generic landscape units which may be found in several different parts of the country; but wherever they occur, they share broadly the same combinations of geology, topography, soil, drainage patterns, vegetation type, historical land use and settlement pattern eg chalk river valleys or open coastal marshes are recognisable and distinctive landscape types.
- Landscape character areas are single unique geographically discrete areas of a particular landscape type eg the Itchen Valley, the Test Valley and the Avon Valley are all separate landscape character areas within the chalk river valleys landscape type.

This distinction is reflected in the naming of types and areas: landscape character types have generic names such as moorland plateau and river valley, but landscape character areas take on the names of specific places.

7 *Scottish Natural Heritage & The Countryside Agency, 2002, Landscape Character Assessment – Guidance for England & Scotland*

Towards a Co-ordinated Approach to Integrated Landscape Planning in Norfolk

2.3.2 Landscape character context

Landscape character can be described and mapped at any scale and it is always helpful to consider a site or a landscape character unit within its wider context. There is a hierarchy of landscape character units – from assessments at the national scale, down to detailed local landscape character areas within a parish or on an estate. The assessments 'nest' together like a series of Russian Dolls and each assessment at each level adds more detail to the one above. The key landscape classifications which are of particular relevance in the context of the Norfolk Coast AONB are:

- **Countryside Character Areas – Norfolk (Map 2)**. Countryside Character Areas from the Character Map of England[8]. Descriptions of these broad character areas are provided in Countryside Character Volume 6, published by the former Countryside Agency (now Natural England)[9].
- **County Landscape Typology (Map 3)**. The current landscape character framework for Norfolk County is provided by the Landscape Description Units (Level 2) prepared by the Living Landscapes Project for the County Council.

2.3.3 Landscape characterisation for the Norfolk Coast AONB

Each of the detailed landscape character assessments for the (four) planning authorities within the AONB has used the National Countryside Character areas and the County Landscape Types (Maps 2 & 3) as a basis for their landscape characterisation but they have often modified the county landscape types slightly so the final landscape type maps presented in the detailed landscape character assessment reports may differ slightly from the Level 2 landscape type mapping at County Level.

This Guidance for the Integrated Landscape Character Assessment of the Norfolk Coast AONB uses the landscape characterisation provided in the four detailed reports, but some further modification has been required to avoid repetition (in areas where landscape types reoccur in different local planning authority areas within the AONB eg Open Coastal Marshes and to provide coverage at a consistent scale. The latter point is relevant only in relation to the detailed landscape character assessment for the Broads Executive Area, where the very detailed description and mapping of local landscape types has been amalgamated to form broader landscape types which are comparable in scale to those elsewhere in the AONB.

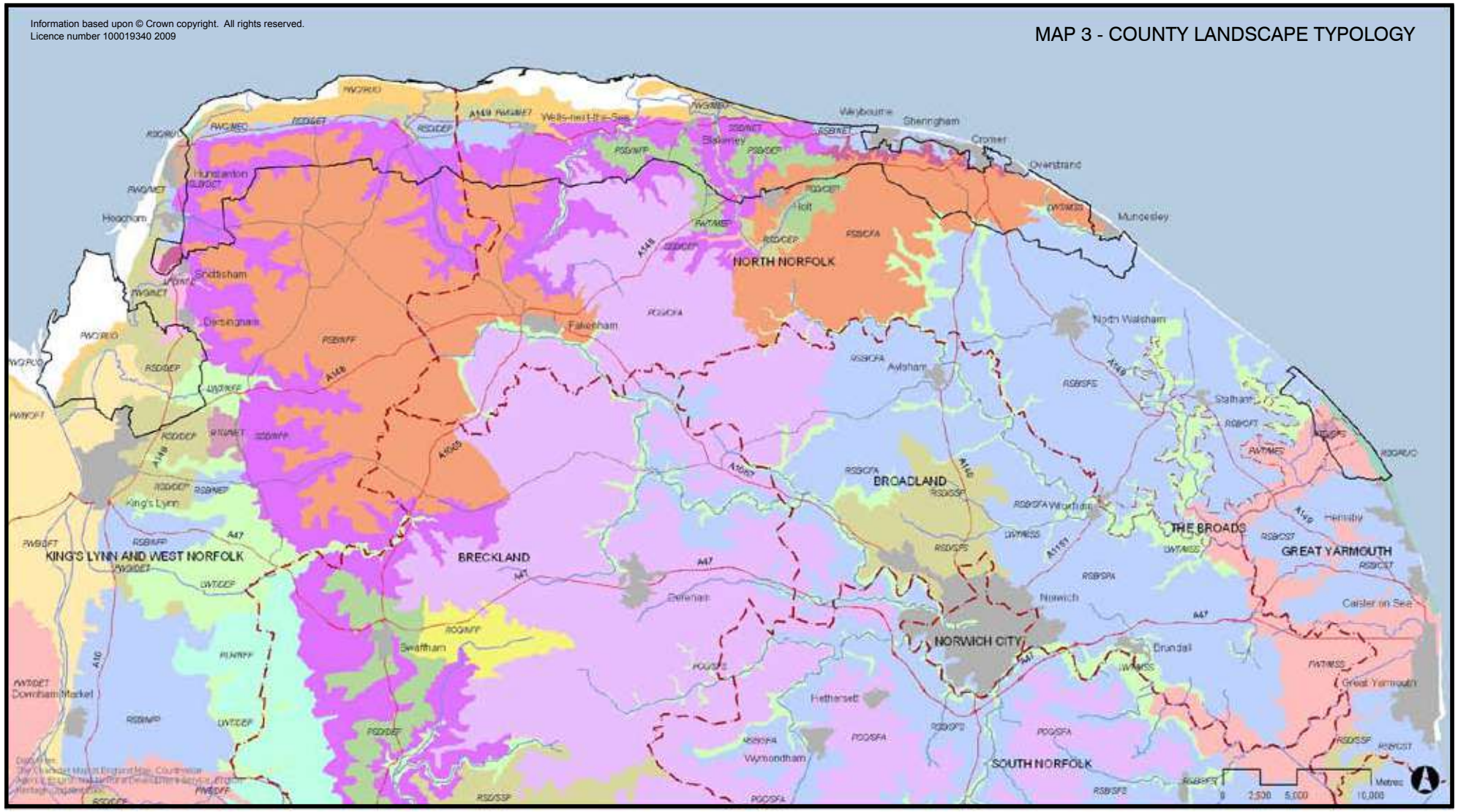
[8] *Countryside Agency, English Nature Rural Development Service, English Heritage, updated 2006, Character of England Map*
[9] *Countryside Agency, 1999, Countryside Character Volume 6 – East of England (CA 14)*

MAP 2 - COUNTRYSIDE CHARACTER AREAS - NORFOLK

- 46 The Fens
- 76 North West Norfolk
- 77 North Norfolk Coast
- 78 Central North Norflok
- 79 North East Norfolk and Flegg
- 80 The Broads
- 82 South Norfolk and High Suffolk Claylands
- 83 Suffolk Coast and Heaths
- 84 Mid Norfolk
- 85 Breckland

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

MAP 3 - COUNTY LANDSCAPE TYPOLOGY



NATURAL

Geology/Physiography (1st letter)
- F - Fluvial Drift
- L - Vales & Valleys
- P - Hard (Palaeozoic) Rocks
- R - Rolling Lowland
- S - Sloping

Rock Type (2nd letter)
- T - Other Till / Plateau Drift
- F - Other Fluvial Drift
- C - Clay and Chalky Till
- S - Soft Sst / Sandy Drift
- L - Chalk and Limestone
- W - Alluvium / Fen Peat

Soils (3rd letter)
- R - Shallow Soils
- C - Clay and Chalky Till
- B - Deep Soils
- G - Gleyed Soils
- D - Impoverished Soils
- T - Bog / Fen Peat

CULTURAL

Settlement (1st letter)
- D - Dispersed
- M - Unsettled Meadow
- N - Nucleated
- R - Unsettled - Wild Land
- S - Mod-high Dispersal with Farms

Farm Type (2nd letter)
- F - Large Farms
- E - Large Estates
- S - Small Farms
- U - Unenclosed / Common Land

Farm Type (2nd letter)
- A - Ancient Woods
- O - Open / Unwooded
- P - Estate Plantations
- S - Secondary / Recent
- T - Other Trees

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District council Boundaries

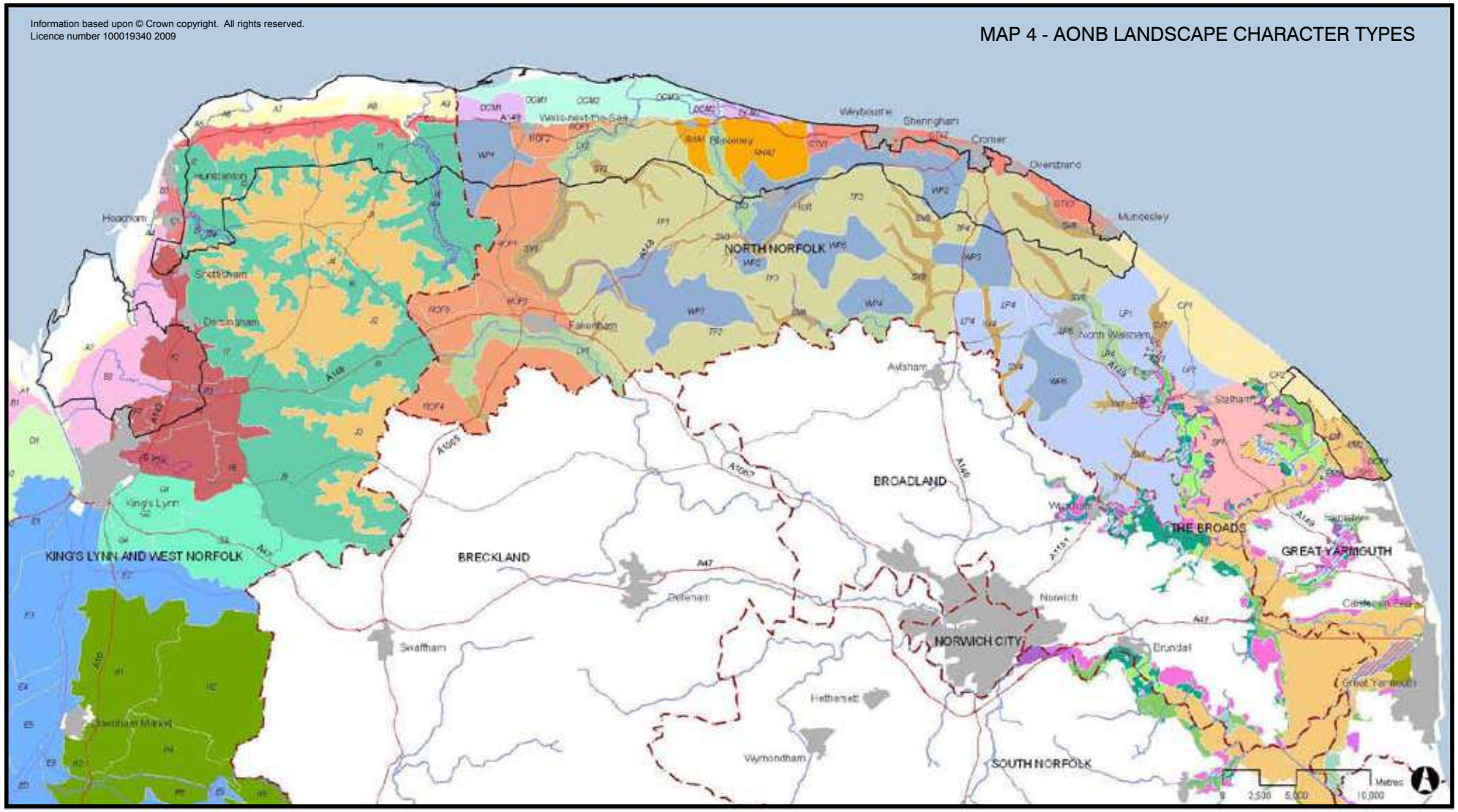
- **AONB Landscape Character Types (Map 4)** - as presented in the four detailed District Landscape Character Assessments (for King's Lynn & West Norfolk Borough, North Norfolk District, Great Yarmouth Borough and the Broads Executive Authority)
- **AONB Landscape Character Types - Modified (Map 5)** - This is the definitive map showing the landscape characterisation which has been used as the basis for this Guidance. The names and boundaries of the landscape character types and areas presented in Map 4 have been retained as far as possible, with minor modifications to the coastal landscape types (where the same type recurs in different local authority areas) and in the Broads Executive Authority area (where some of the detailed types have been amalgamated, as explained above).

Map 5 presents the 16 Landscape Character Types within the Norfolk Coast AONB. Each is subdivided into more detailed Landscape Character Areas. The detailed subdivision into landscape character areas is shown on the larger scale maps which accompany the descriptions and guidance for each of the landscape character types.

	AONB Landscape Character Type	AONB Local Landscape Character Areas	
OCM	Open Coastal Marshes	OCM1	North Wootton
		OCM2	Shepherd's Port
		OCM3	Holme-Next-The-Sea
		OCM4	Thornham & Titchwell
		OCM5	Scolt Head Island
		OCM6	Wells/Holkham
		OCM7	Overy Creek
		OCM8	Stiffkey
		OCM9	Morston to Blakeney
DCM	Drained Coastal Marshes	DCM1	North Wootton
		DCM2	Old Hunstanton to Holme
		DCM3	Holme to Thornham
		DCM4	Thornham and Titchwell
		DCM5	Overy Creek
		DCM6	Holkham
		DCM7	Cley/Salthouse
CS	Coastal Slopes	CS1	Heacham
		CS2	Holme to Brancaster
		CS3	Burnham Overy
WSE	Wooded Slopes with Estate Land	WSE1	Snettisham & Dersingham
		WSE2	Sandringham
		WSE3	Hillington & Congham
		WSE4	North & South Wootton & Castle Rising

ROF	Rolling Open Farmland	ROF1 ROF2 ROF3 ROF4 ROF5 ROF6 ROF7	Burnham Market Ringstead Downs Ringstead Burnham Thorpe & The Creakes Sedgeford Egmere & East Wells Wells
PF	Plateau Farmland	PF1 PF2	Docking Bircham
RHA	Rolling Heath & Arable	RHA1 RHA2	Blakeney Salthouse & Kelling
SV	Small Valleys	SV1 SV2 SV3 SV4 SV5	Babingley Valley Heacham Valley Burn Valley Binham & Langham Mun Valley
TF	Tributary Farmland	TF1 TF2 TF3	Morston & Hindringham Hempstead, Bodham, Aylmerton & Wickmere Roughton, Southrepps, Trunch & Knapton
WP	Wooded with Parkland	WP1 WP2 WP3	Holkham Park Holt to Cromer Gunthorpe & Hanworth
CP	Coastal Plain	CP1 CP2	Bacton to Sea Palling Sea Palling to Waxham
CTV	Coastal Towns & Villages	CVT1 CVT2 CVT3	Weybourne to Sheringham Sheringham to Overstrand Sidestrand to Mundesley
LV	Large Valleys	LV1 LV2	Stiffkey to Warham Wiveton to Letheringsett
EM	Estuarine Marshland	EM1 EM2 EM3	Horsey & Somerton Coastal Fen West Somerton Farmland
SF	Settled Farmland	SF1	East Somerton Woodlands
DCR	Dunes, Coastal Levels & Resorts	DCR1	Winterton Dunes

MAP 4 - AONB LANDSCAPE CHARACTER TYPES



King's Lynn and West Norfolk Landscape Character Type

- A Open Coastal Marshes
- B Drained Coastal Marshes
- C Coastal Slopes
- D The fen – Settled Inland Marshes
- E The Fen – Open Inland Marshes
- F Wooded Slopes with Estate Land
- G Farmland with Woodland and Wetland
- H Settled Farmland with Plantation
- I Rolling Open Farmland
- J Plateau Farmland
- K The Brecks –Plantations

North Norfolk Landscape Character type

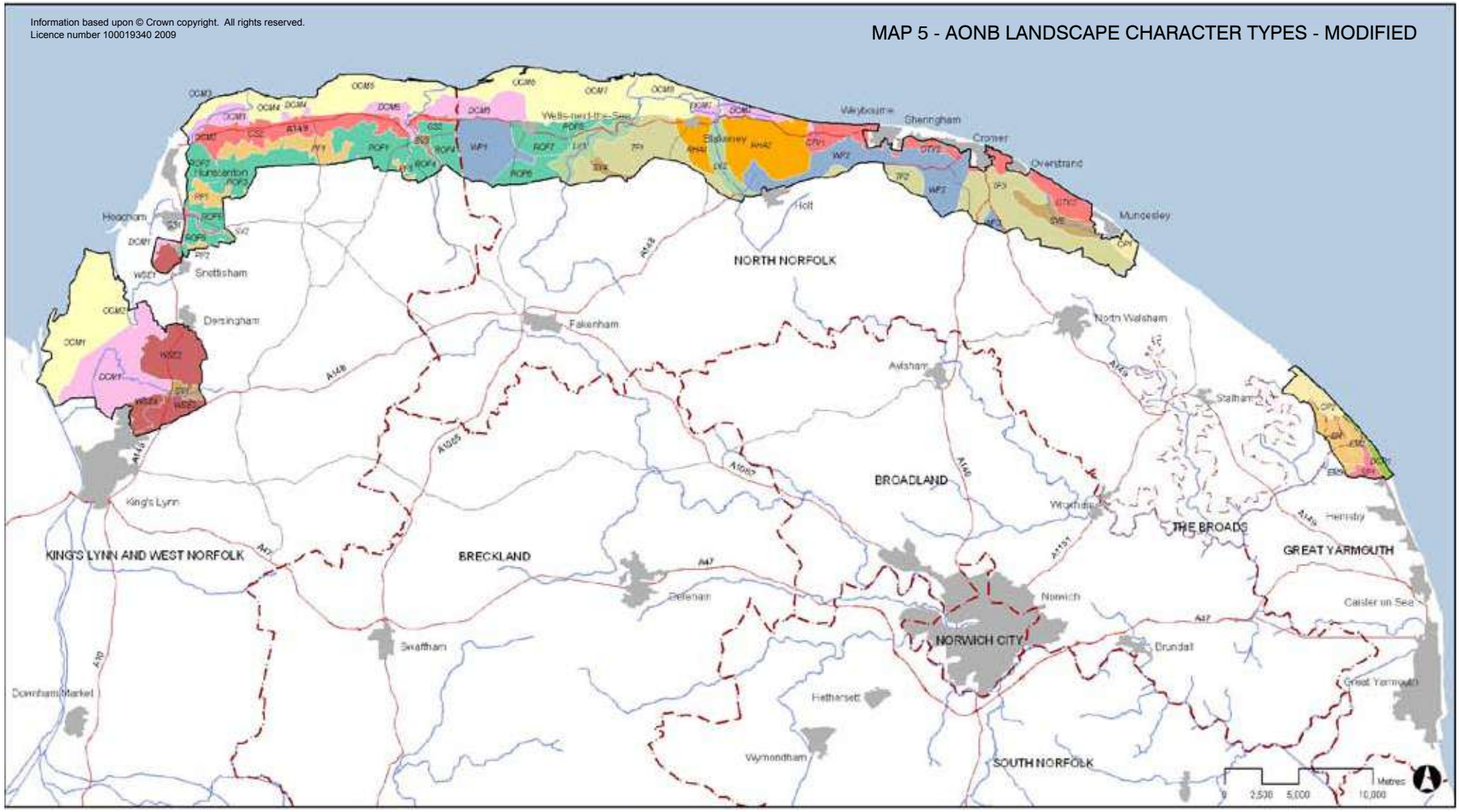
- LP Low Plains
- OCM Open Coastal Marshes
- RH-A Rolling Heath and Arable
- ROF Rolling Open Farmland
- SF Settled Fen
- SV Small Valleys
- TF Tributary Farmland
- WP Wooded with Parkland
- CP Coastal Plain
- CTV Coastal Towns and Villages
- DCM Drained Coastal Marshes
- LV Large Valley

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

The Broads Landscape Character Type

- Upland
- Industrial / Early Post Industrial
- Carr Woodland
- Estuarine Marshland
- Unknown
- Heathland
- Estuary
- Drained Peat or Clay / Peat Mix
- Fen
- Broads & Other Permanent Water Bodies
- Settlement Fringe
- Coastal Strip
- Rivers & Broads
- Settled Farmland
- Dunes, Coastal Levels & Resorts

MAP 5 - AONB LANDSCAPE CHARACTER TYPES - MODIFIED



- OCM Open Coastal Marshes
- DCM Drained Coastal Marshes
- CS Coastal Slopes
- WSE Wooded Slopes with Estate Land
- ROF Rolling Open Farmland
- PF Plateau Farmland
- RHA Rolling Heath and Arable
- SV Small Valleys
- TF Tributary Farmland
- WP Wooded with Parkland
- CP Coastal Plain
- CTV Coastal Towns and Villages
- LV Large Valley
- EM Estuarine Marshland
- SF Settled Farmland
- DCR Dunes, Coastal Levels & Resorts

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

2.4

Biodiversity

2.4.1 Norfolk County – Ecological Network Mapping project

This section is based on the report of the Norfolk Ecological Network Mapping Project[10], which sets out the rationale and methodology for the development of an ecological network in Norfolk.

The majority of Norfolk is dominated by intensive agriculture, leaving only remnant isolated pockets of semi-natural habitat, such as heathland, grassland and woodland. This ongoing process of habitat fragmentation has significant consequences for the long-term survival of biodiversity:

- small & isolated sites may become too small to support viable populations of a particular species or may be adversely impacted by surrounding land uses;
- many ecological processes are now largely human controlled, with the result that small, fragmented habitats are often unable to function naturally; and
- there is increasing concern as to how our wildlife and habitats will respond to climate change.

The Norfolk Biodiversity Partnership has developed an Ecological Network Map for Norfolk. Its overarching aim is to increase and re-connect the area of wildlife habitat so that it can be conserved in a human-dominated landscape and can adapt to climate change.

The Ecological Network Map identifies core areas for a wide range of habitats (including BAP Habitats) which need to be protected, as well as areas where new habitats can be created and where these can be connected. There are two levels of ecological network mapping in Norfolk:

- an indicative County Ecological Network Map (Map 6); and
- more detailed District Ecological Network Maps (Maps 7a-7b) containing more specific habitat information.

The county map is useful at a broad level and in providing the context for the more detailed district maps[11]. Maps 6 & 7a-7b show the county and district level ecological mapping project for the areas within the AONB.

2.4.2 Components of the Indicative County Ecological Network Map

The Norfolk Ecological Network Map shows:

- Core areas, which are priorities for habitat creation & linking sites. These core areas are significant concentrations of high quality remnant BAP habitat. They include SSSIs and European protected sites. The core areas encompass groups of dispersed sites and so also include areas of land of relatively lower conservation value. Within the Norfolk Coast AONB, the core areas are:
    - *The Greensand (sandy soils with extensive heathland habitat)*
    - *North Norfolk Coast*
    - *Cromer Ridge*
    - *The Broads*
- Enhancement (habitat creation) areas – three levels of opportunity for habitat creation and enhancement are identified, from small, through medium to large scale. Enhancement areas were identified on the basis of soil suitability, water supply or the presence of a relatively high concentration of similar habitats. For some habitats (eg heathland) there is data available on potential areas for habitat creation; for many others (eg chalk grassland) there is not and only broad areas of search can be identified.

All land is capable of being enhanced for biodiversity, but the overall sustainability of the ecological network will be dependent on the management of land. Three broad types of habitat enhancement areas are identified. Each extends the core areas:

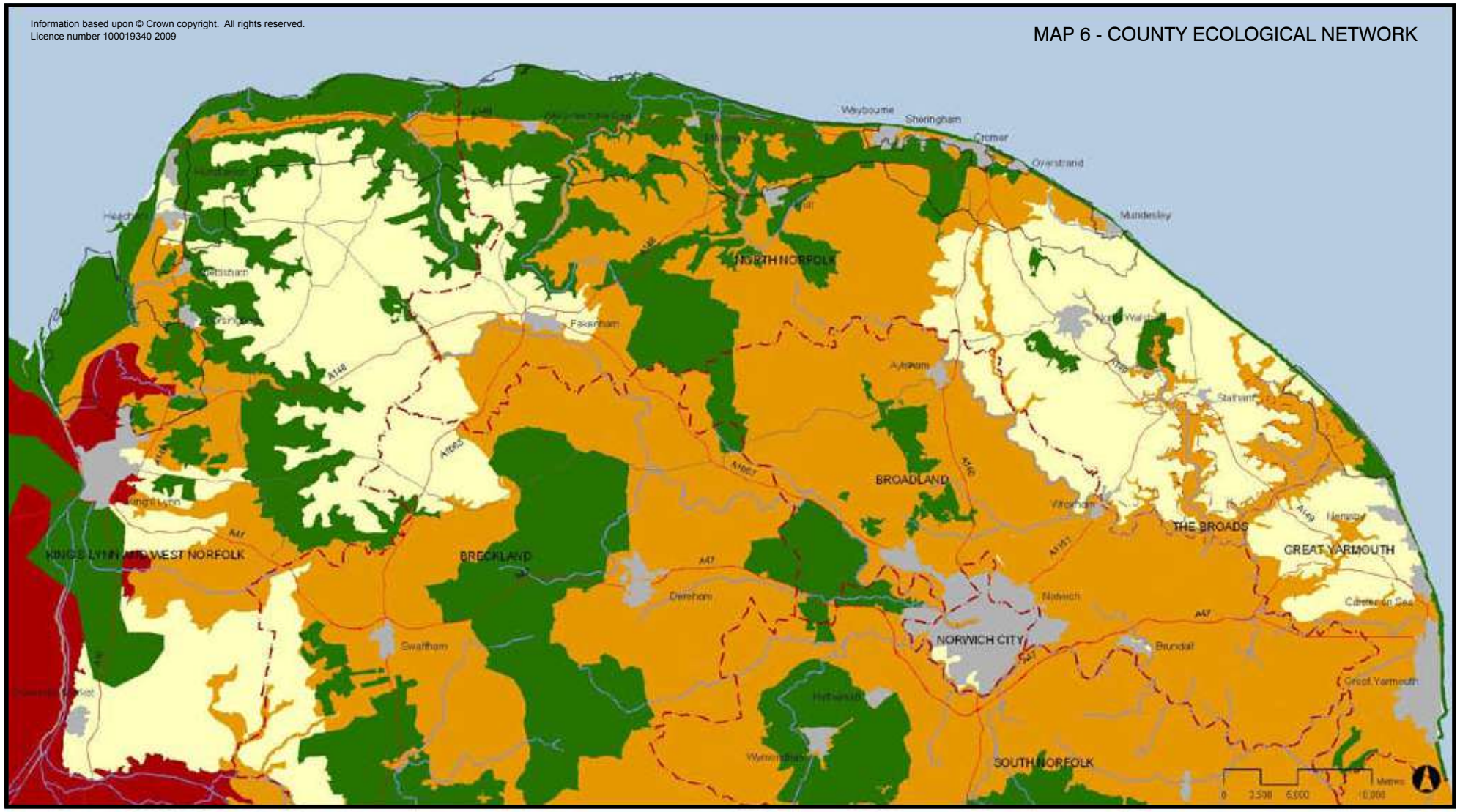
- Zone for creation & enhancement (for wet grassland, reedbed, fen, aquifer-fed waterbodies, mesotrophic lakes, chalk rivers & calcareous grassland
- Zone of woodland, heathland & grassland creation
- Zone of large-scale wetland enhancement & creation – the Fens
- Zone of general habitat enhancement - other areas not identified as 'core or enhancement'
- Corridors – the main rivers were identified as important strategic corridors for species movement through intensively farmed areas.

2.4.3 Components of the District Ecological Network Maps

The District Ecological Network Maps refine and expand on the information on the county maps. There are (so far) no maps to show the spatial distribution of BAP habitats (priorities for conservation, creation and enhancement at national level), but the District Ecological Network Maps group areas with of potential for the creation and enhancement of a range of BAP habitats. The District Ecological Network Maps typically show:

- Core areas for biodiversity (from the county level Ecological Network Map)
- Zone of grassland-heathland-woodland enhancement (from the county level Ecological Network Map)
- Zone of general habitat enhancement (from the county level Ecological Network Map)
- Sites of Special Scientific Interest (SSSIs) & County Wildlife Sites (CWS)
- Rivers and Chalk Rivers
- Ancient Woodland (from the Ancient Woodland Register)
- Historic Parks (from the Norfolk County Register) – includes Wood-Pasture & Parkland BAP habitat
- A wetland habitat zone – based on county landscape types which are classified as 'wetland' and the 1:100 year flood risk area from the Environment Agency – which includes areas suitable for creation and enhancement of the following BAP habitats:
    - Wet Woodland, Reedbeds, Lowland Fen, Chalk Rivers, Coastal & Floodplain Grazing Marsh, Mesotrophic Lakes and Eutrophic Standing Waters
- A coastal habitat zone – based on county landscape types which have a coastal frontage – which includes areas suitable for the creation and enhancement of the following BAP habitats:
    - Intertidal Boulder Communities, Intertidal Mudflats, Coastal Saltmarsh, Coastal San Dunes, Coastal Vegetated Shingle, Reedbeds, Saline Lagoons and Coastal & Floodplain Grazing Marsh
- Woodland core zone showing concentrations of primarily deciduous woodland
- Heathland core zone – priority areas for heathland and heathland creation – Lowland Heathland (BAP habitat)
- Grassland core area
- Calcareous grassland core area – based on areas with calcareous soils which are suitable for the creation and enhancement of Lowland Calcareous Grassland (BAP Habitat)
- Wood Pasture – includes Wood-Pasture & Parkland BAP habitat
- Buffer zones (1km) – around the Broads and the North Coast to highlight the extreme importance of these areas and the need to consider the way land is managed in adjacent areas.

MAP 6 - COUNTY ECOLOGICAL NETWORK



- Core Area
- Zone of General Habitat Creation and Enhancement
- Zone of Heath, Grassland and Wood Enhancement
- Zone of Large Scale Wetland Habitat Creation and Enhancement

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

2.4.4 Using the Ecological Network Maps

The Norfolk Coast AONB has a wide range of core priority BAP habitats. This is an exceptional concentration of core habitat within Norfolk and is therefore of critical importance in establishing the overall ecological network.

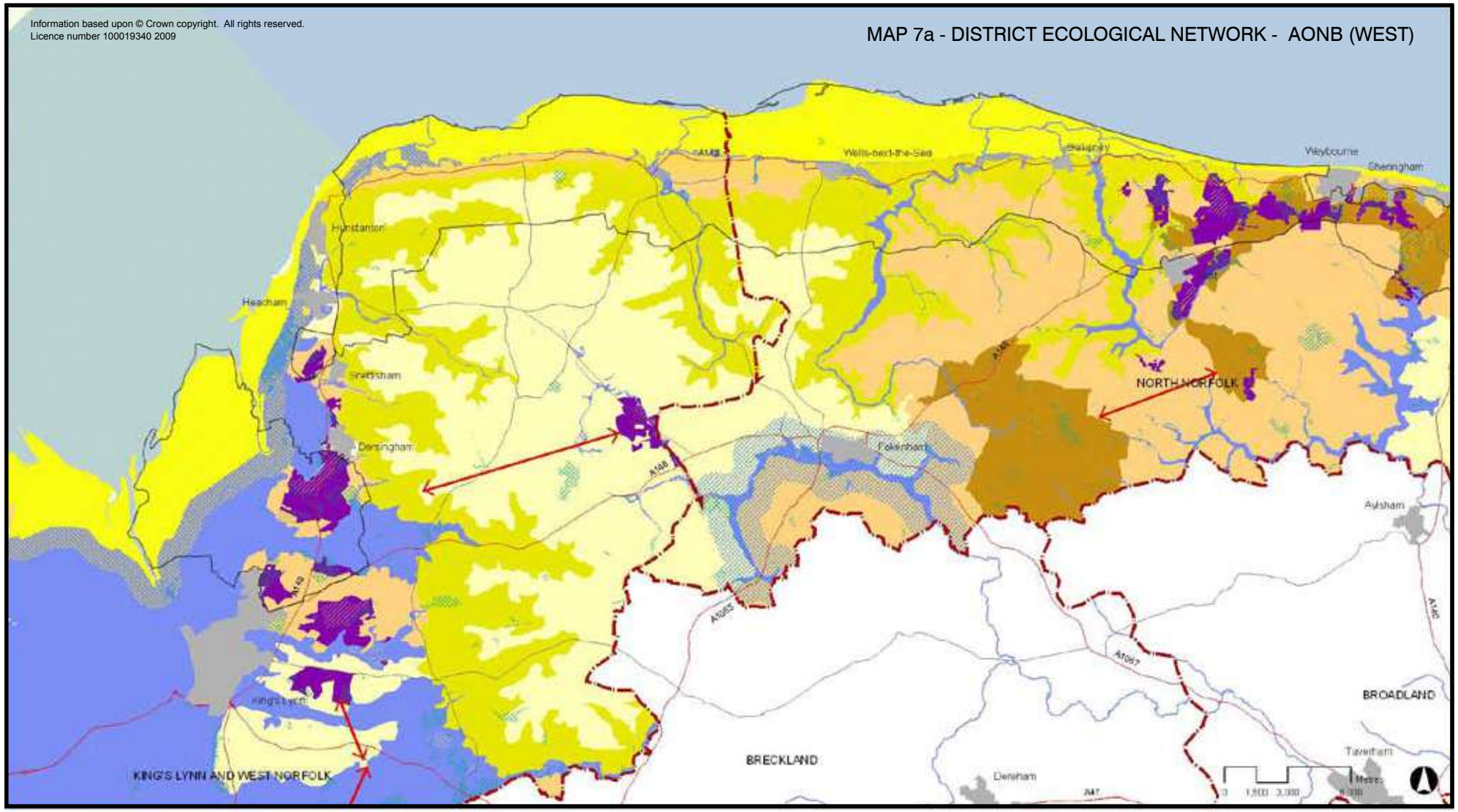
The Ecological Network Maps provide the most up date information available on the spatial distribution of priority habitats in Norfolk. They provide local authorities, developers and landowners with a clear vision of conservation priorities. The aim is to establish the network 'on the ground' by safeguarding areas of core and potential habitat and actively seeking links to adjacent semi-natural habitats. There is a need to increase connectivity (by creating corridors and linkages of new or enhanced habitat) between the habitats identified, along with opportunities for large scale habitat creation.

The maps are being updated and detailed mapping to show the distribution of BAP habitats will be available in due course

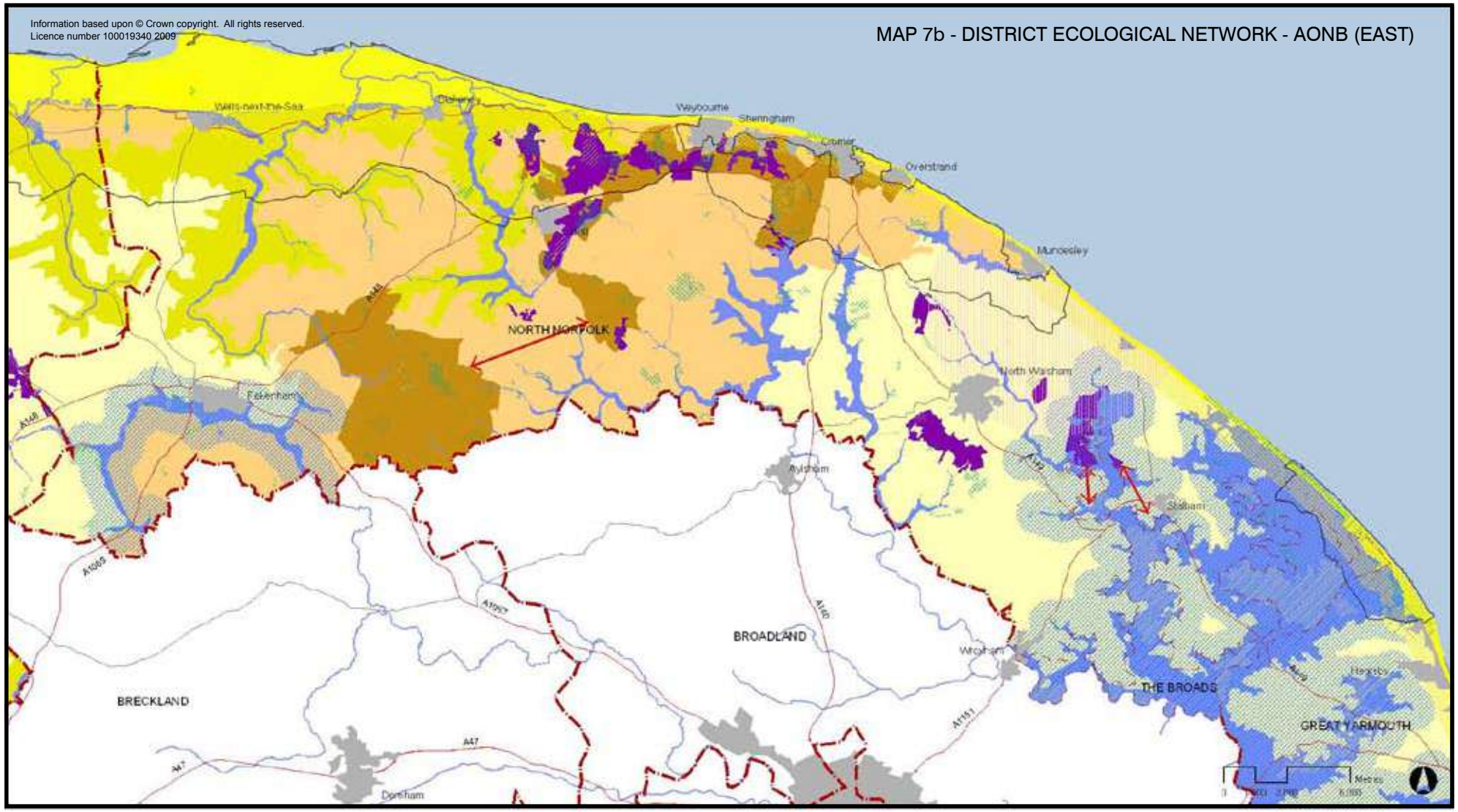
2.4.5 UK BAP Priority Habitats and Species

The UK Biodiversity Action Plan (UK BAP) establishes a legal framework and criteria for identifying species and habitats of conservation concern. It is a response to the 1992 Convention of Biological Diversity signed by 159 governments at the Rio Earth Summit which called for the creation and enforcement of national strategies and action plans to conserve, protect and enhance biological diversity.

MAP 7a - DISTRICT ECOLOGICAL NETWORK - AONB (WEST)



- Core Woodland Area
- Zone of General Habitat Enhancement
- Zone of Grassland – Heathland – Woodland Enhancement
- Wetland Habitat Enhancement Zone
- Heathland Core Area
- Coastal Habitat Enhancement Zone
- Calcareous Grassland Core Area
- Core Habitat Corridors
- Paston Barn Bat Site Management Area
- Coastal Buffer Zone
- Broads & River Buffer Zone
- Ancient Woodland
- Site of Special Scientific Interest
- County Wildlife Sites
- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries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MAP 7b - DISTRICT ECOLOGICAL NETWORK - AONB (EAST)
Wells-next-the-Sea
Cromer
Weybourne
Sheringham
Overstrand
Mundesley
NORTH NORFOLK
Fakenham
North Walsham
Aylsham
Stalham
BRECKLAND
BROADLAND
THE BROADS
GREAT YARMOUTH
Dereham
A148
A1065
A1067
A140
A47
A1151
Core Woodland Area
Zone of General Habitat Enhancement
Zone of Grassland – Heathland – Woodland Enhancement
Wetland Habitat Enhancement Zone
Heathland Core Area
Coastal Habitat Enhancement Zone
Calcareous Grassland Core Area
Core Habitat Corridors
Paston Barn Bat Site Management Area
Coastal Buffer Zone
Broads & River Buffer Zone
Ancient Woodland
Site of Special Scientific Interest
County Wildlife Sites
'A' Road
'B' Road
Main River
Area of Outstanding Natural Beauty
Settlement
District Council Boundaries

2.4.6 Heathland studies

Lowland heathland habitats are of national importance (BAP habitat) and their management, creation and connectivity is a priority for strategic biodiversity policy throughout the AONB. Map 8 is an extract from a report by ELP, [12] which sets out a strategy for the re-creation of heaths across North Norfolk. It shows areas of land which are likely to be strong candidates for heathland re-creation on the basis of soil type and historic use - the maps shows the boundary of soil types that should (theoretically) support heathland, along with all the heaths that are thought to have existed in 1797 (based on Faden's Map of the Distribution of Common Land in Norfolk). The report focuses on five selected 'core areas' where there are considered to be the best opportunities for delivering a vision for the re-establishment of extensive tracts of heathland. These five core areas are shown on Map 9; two are within the Norfolk Coast AONB, where they are associated with the West Norfolk Greensand (the strip of acidic Greensand soils along the western fringes of the chalk plateau near Snettisham) and the sandy glacial moraine deposits of the Holt-Cromer Ridge. More detailed maps in Section 4 (for each of the landscape types) include a basic scoring system which shows a fine-grain breakdown of areas which are most suitable for heathland creation (within each of the core areas).

A further report [13] examines the historical evidence for the past management and appearance of heathland in Norfolk, focusing on areas of managed wood pasture. The report provides a fascinating history of heathland in Norfolk, with detailed explanation of the various types of heathland use and management. Heathlands, especially those that were common land, were complex multi-use environments, grazed by a variety of stock, cut and dug over for a variety of produce. Many heaths were bare, open environments in historic times, but others had tree cover and were managed as wood-pastures, in medieval times and sometimes through into the 17th and 18th centuries. There is more evidence for the existence (and survival) of wood pasture on areas with Greensand soils or on the glacial moraines of North Norfolk (as opposed to the thin soils of the Brecks or the chalkland plateaux). Here there is scope for including a wood-pasture component within heathland restoration or re-creation schemes.

2.4.7 Vision for Nature Conservation in the Norfolk Coast AONB

The Vision for Nature Conservation in the Norfolk Coast AONB [14] was prepared by English Nature on behalf of the Norfolk Coast Partnership in 1998 to provide the nature conservation input to the then AONB Management Strategy. It represents the joint view of (the former) English Nature, Norfolk Wildlife Trust, the National Trust and the Royal Society for the Protection of Birds and sets out the broad actions required to ensure that the wildlife of the area is thriving in the year 2022. The document remains highly relevant today as it provides recommendations for the long term planning of the AONB's habitats and landscapes. It is structured in terms of the key habitat types within the AONB and for each of these it presents:

12 *ELP (Ecology, Land & People), May 2002, Norfolk Heaths Re-Creation Strategy (on behalf of the English Nature Norfolk team)*

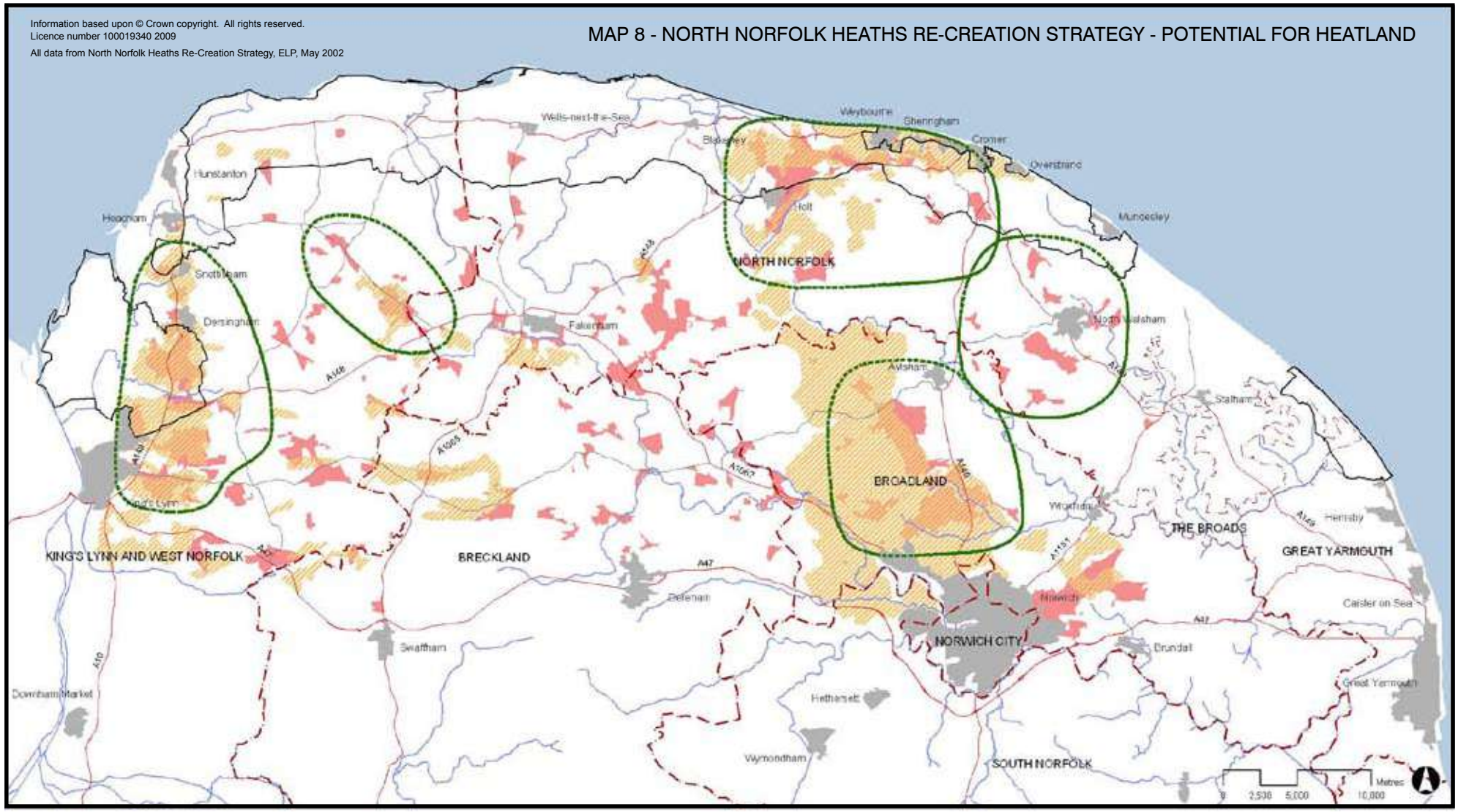
13 *Tom Williamson (Landscape Group, School of History, University of East Anglia), February 2006, Heaths and Wood Pastures: aspects of the landscape history of Norfolk Heathland*

14 *Norfolk Coast Partnership, February 1998, A Vision for Nature Conservation in the Norfolk Coast AONB*

- an unconstrained vision of the agreed ideal state for each habitat
- the threats and issues that need to be addressed to achieve the vision by 2022
- 25 year nature conseravtion objectives, linked to the issues and threats identified above
- maps identifying present habitat distributions and where appropriate, areas which have the potential for future habitat creation.

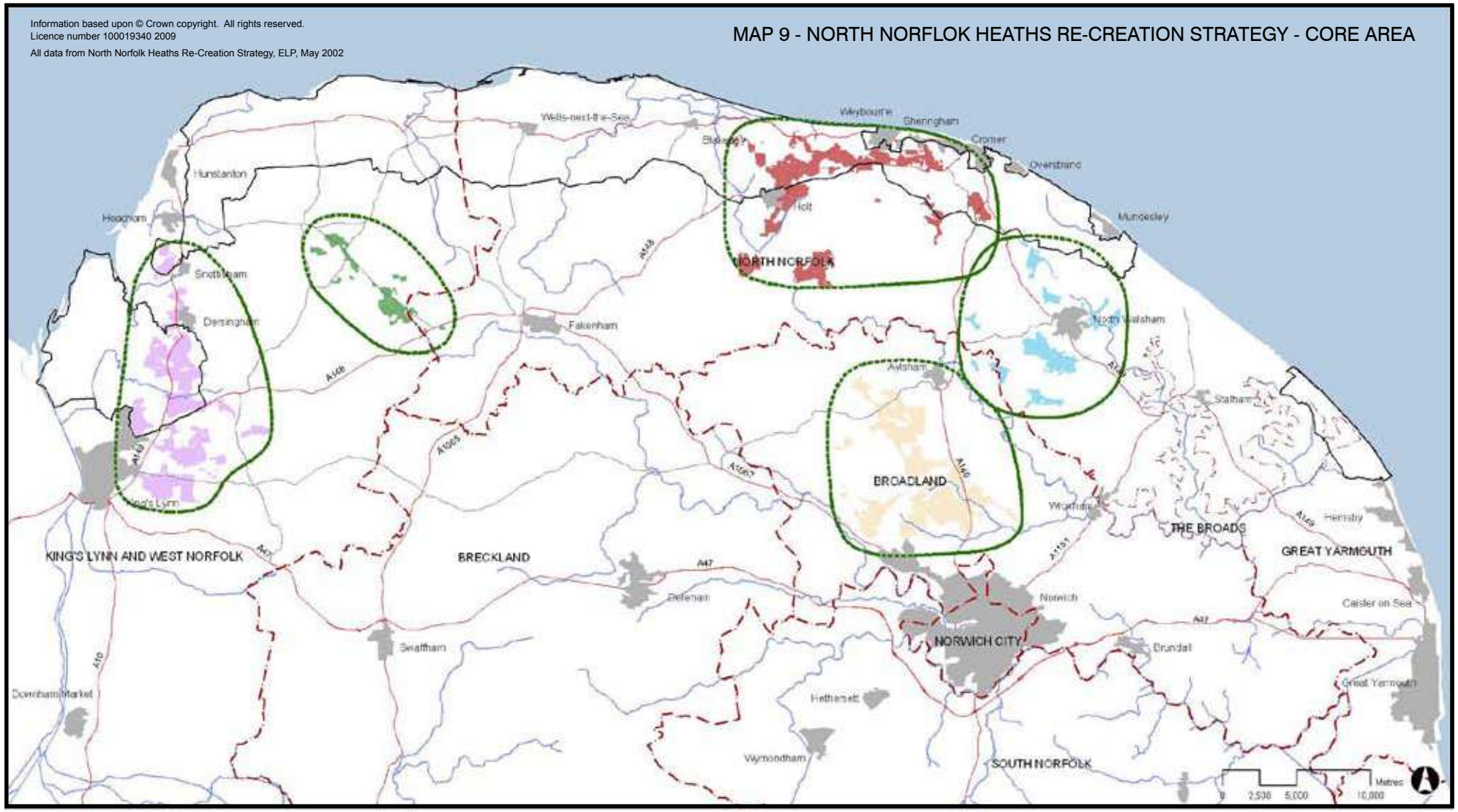
All data from North Norfolk Heaths Re-Creation Strategy, ELP, May 2002

MAP 8 - NORTH NORFOLK HEATHS RE-CREATION STRATEGY - POTENTIAL FOR HEATLAND



- Soils Potentially Supporting Heath
- Areas Recorded as Heath, Common or Warren in 1797 (from Faden's map)
- Core Areas from North Norfolk Heaths Re-creation Strategy

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries



- West Norfolk Greensand
- Tat Valley
- Marsham and Horsford
- Holt-Cromer Ridge
- Bryant's Heath
- Core Areas from Norfolk Heaths Re-Creation Strategy

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

2.5

Historic Landscape Characterisation

2.5.1 Principles & use of historic landscape characterisation

Historic landscape characterisation (HLC) is the process of describing, classifying and mapping 'historic landscape types' in order to highlight the landscape features which make an important contribution to landscape character. HLC provides an overview of the historic character of a landscape and an insight into how the present day landscape character and pattern has evolved. It assumes that the entire current landscape is 'historic' although it also recognises that it is variable in its age of origin and degree of survival.

The definition and aims of HLC is provided in one of the Topic Papers associated with Natural England's Landscape Character Assessment Guidance[15] and is also set out in the recent report promoting integrated landscape planning in Norfolk[16]. HLC is used to determine the 'time-depth' of the landscape – ie the visible evidence in the landscape for change and continuity over periods of time. The classification into different historic landscape types takes account of age, origin and land use eg patterns of field enclosure or designed parkland. It also classifies previous 'relic landscapes' ie land uses or habitats which have been masked by more recent land uses – this information not only helps to show how a landscape has evolved, but can be used to help determine the scope for re-creation. The HLC data can supplemented by data from the Historic Environment Record - www.heritage.norfolk.gov.uk, which provides a computerised, searchable database (with integrated digital mapping) of all areas of known archaeological activity, sites, finds, cropmarks, earthworks, industrial remains, defensive structures and historic buildings in the county. Alongside this are further, more detailed, paper records for many of the sites which are open to all by appointment.

15 *The Countryside Agency, Scottish Natural Heritage, Historic Scotland and English Heritage, Landscape Character Assessment Guidance Topic Paper 5 – Understanding Historic Landscape Character*

16 *Chris Blandford Associates & Alison Farmer Associates, Dec 2006, Towards a Co-ordinated Approach to Integrated Landscape Planning in Norfolk*

2.5.2 Historic Landscape Characterisation in Norfolk

The Norfolk Historic Landscape Characterisation Project [17] was completed in 2008 and the overall mapped classification of broad historic landscape types is shown on Map 10. The project formed part of a national initiative and was a direct continuation of similar work in Suffolk, Hertfordshire, Essex, Bedfordshire and Cambridgeshire.

Map 9 provides an overview. The HLC data was compiled as a series of layers, with many detailed HLC types grouped together into broad groups. this means that there is a wealth of 'hidden data' which cannot be depicted on a single map. The data-sets can be used to create themed maps which interpret specific historic periods of change or which give an in-depth understanding of a specific landscape type, such as woodlands or industry.

HLC in Norfolk has resulted in 22 major Broad Groups and over 60 detailed HLC Types. The most important of these in terms of area and impact on the landscape are:

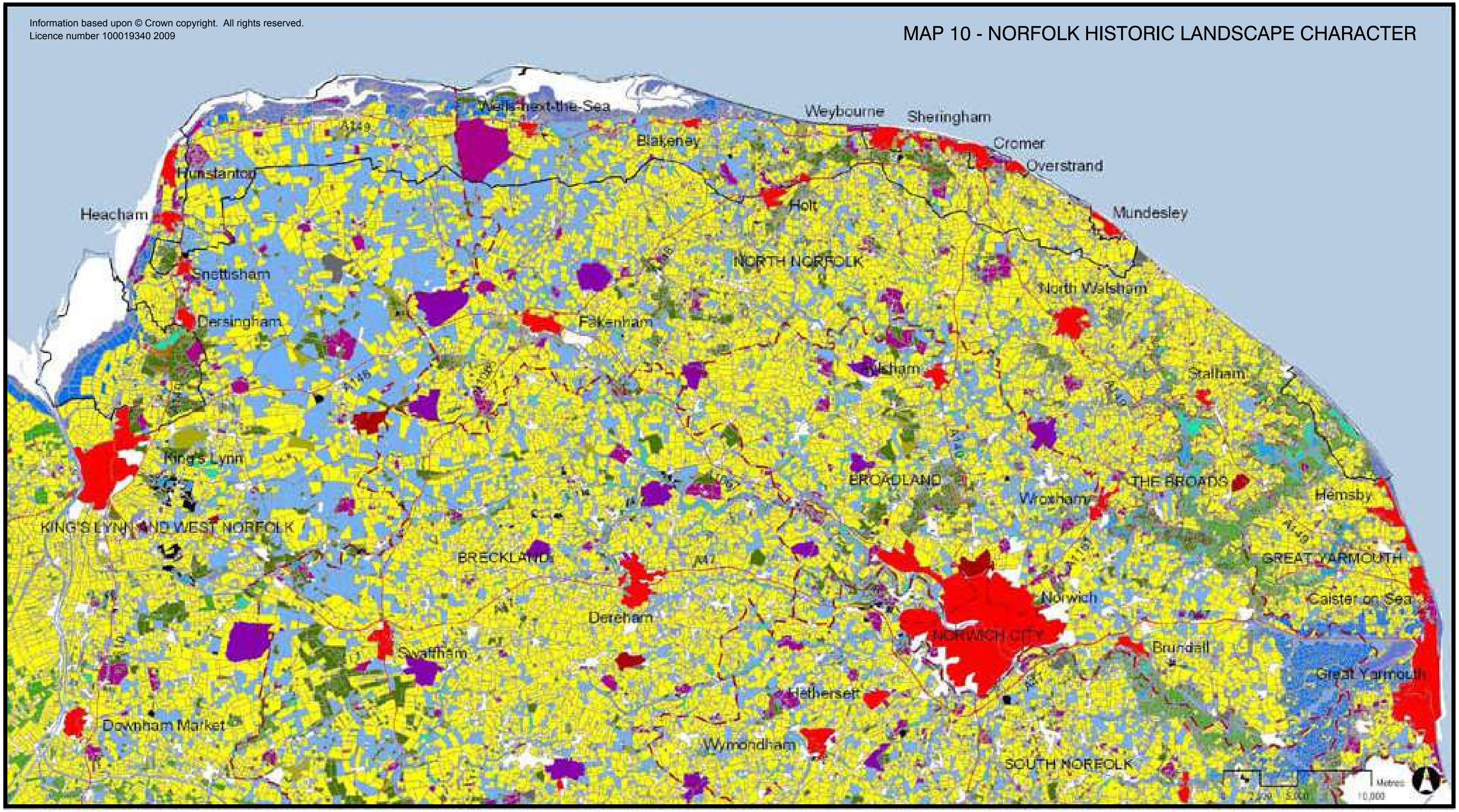
- Field enclosure (generically referred to as 'Ancient', 'Parliamentary' or 'Modern')
- Wetlands (Fens, Water Meadows etc)
- Forestry (Modern and Ancient)
- Commons, Wastes and Heaths

This reflects the rural nature of the county. There are many other HLC Broad Groups and Types which cover small areas and which are important in their own right, but have had minimal impact in landscape terms within the county. The HLC report presents two types of maps:

- Maps which reflect time slices - the three major periods of change in Norfolk:
  - modern change, reflecting 20th century impacts on the landscape
  - the Georgian landscape, reflecting the impacts of enclosure as a result of the 18th and 19th centuries 'improvement' landscapes
  - the medieval landscape composed of the surviving pre-18th century landscapes of complex fields and woodlands

- Maps illustrating the HLC Broad Groups with their HLC types, indicating their distribution. Examples are:
  - field enclosure (20th to 21st century fields, 18th - 19th century enclosure and pre 18th century enc;losure)
  - wetlands - inland drained enclosure, coastal drained enclosure, inland managed wetlands, coastal managed wetlands
  - commons, wastes and heaths
  - parks and gardens
  - industry

[17] *Norfolk Landscape Archaeology, January 2009, Norfolk Historic Landscape Character - a Report on the Norfolk Historic Landscape Characterisation Project*



18th – 19th Century Enclosure	Commons, Wastes, Heaths	Inland – Managed Wetland	Woodland
20th Century Agriculture	Communications	Marginal	Military
Built Up Areas - Historic	Historic Earthwork	Miscellaneous	Mineral
Built Up Areas – Modern	Horticulture	Parks. Gardens, Recreation	
Coastal – Drained Enclosure	Industry	Pre - 18th Century Enclosure	
Coastal – Managed Wetland	Inland – Drained Enclosure	Water Feature	

'A' Road
'B' Road
Main River
Area of Outstanding Natural Beauty
Settlement
District Council Boundaries

2.5

Statutory Designations

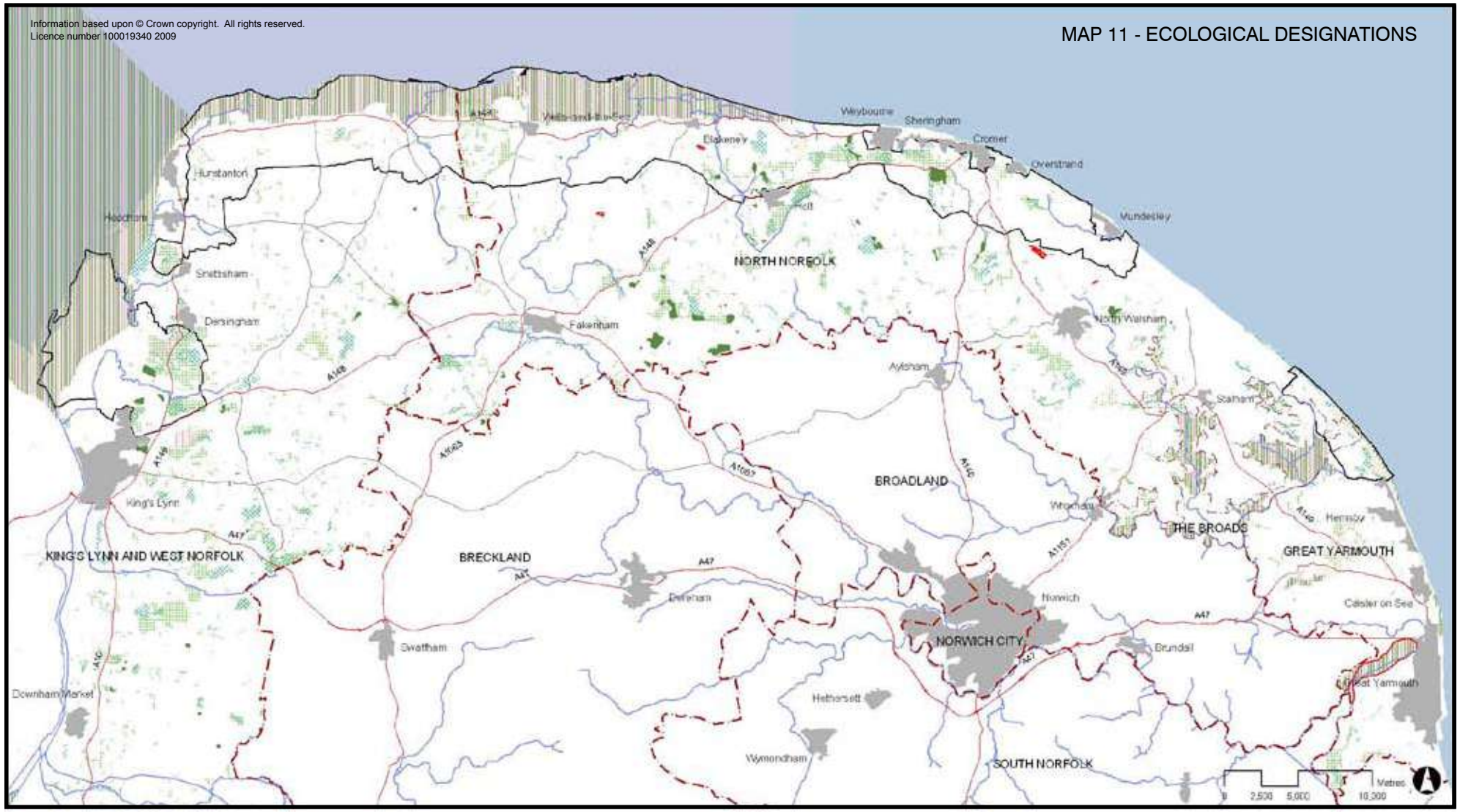
The statutory designations are sites or (in the case of some ecological designations – large areas) which are protected (within the planning system) to varying degrees because of their importance for nature conservation and or heritage. These areas are a constraint on development and provide a range of background data which assists the development of appropriate management guidance.

2.5.1 Ecological designations

Map 11 shows the ecological designations across the AONB. These include international designations (Ramsar sites, Special Protection Areas and Special Areas of Conservation) and national designations (SSSIs, National Nature Reserves) and county level designations (County Wildlife Sites and Local Nature Reserves).

Details of the criteria used to determine these designations and the protection afforded to these sites is available on the Nature on the Map part of Natural England's website, www.natureonthemap.org.uk.

The North Norfolk Coast UK Biosphere Reserve includes the coast and marshes between Scolt Head Island and Cley next the Sea. It is part of an international network of sites designated by UNESCO for their international nature conservation importance.



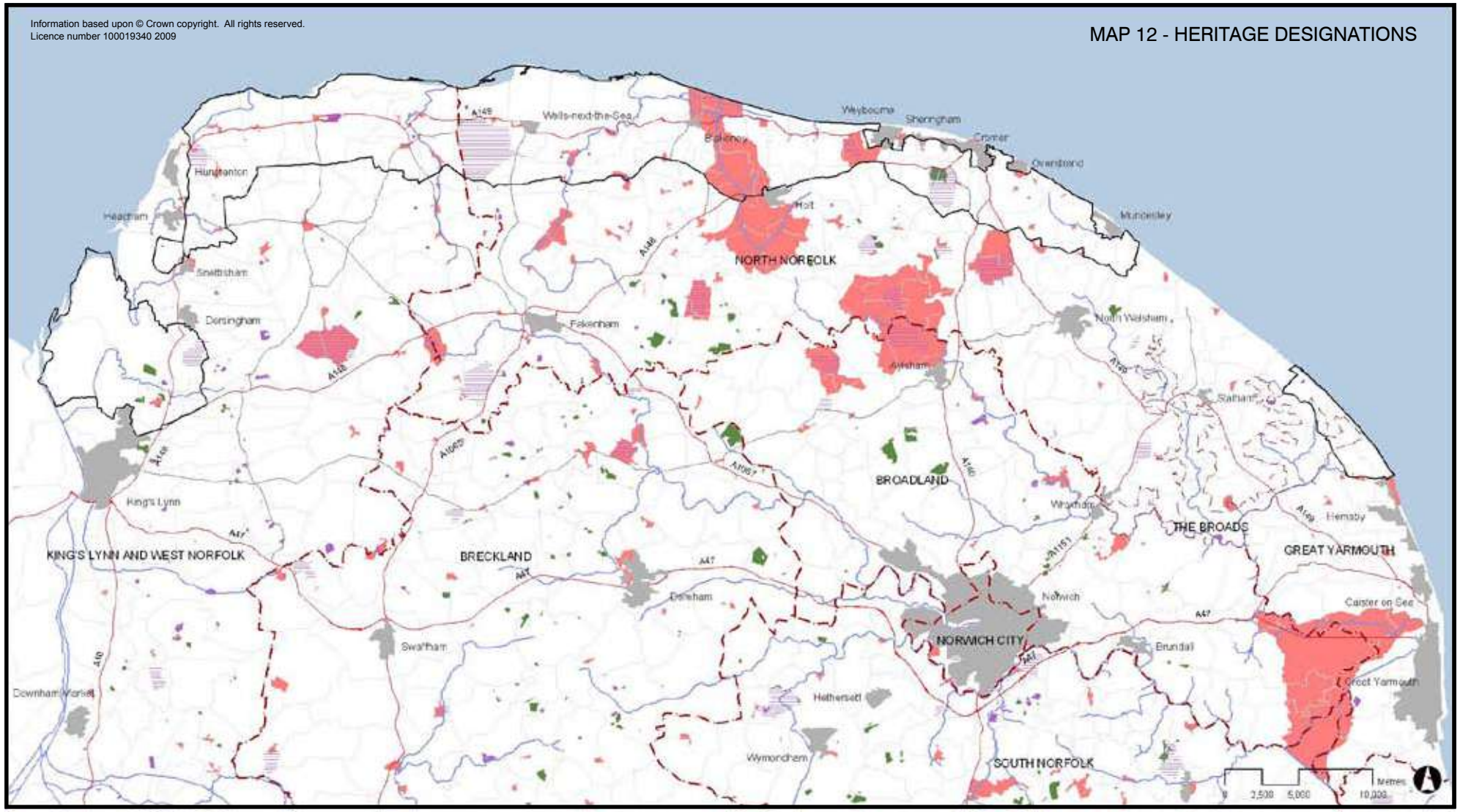
- Ramsar site
- Special Protection Area
- Special Area of Conservation
- Ancient Woodland
- Site of Special Scientific Interest
- County Wildlife Sites
- Local Nature Reserve
- Forestry Commission Woodland
- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

2.5.2 Heritage designations

Map 12 shows heritage designations across the AONB. These are Scheduled Ancient Monuments and Conservation Areas.

The Conservation Area appraisals which have been carried out for many of the Conservation Areas and schedules of Listed Buildings and Scheduled Ancient Monument are available on the websites for each of the local planning authorities in the AONB.

MAP 12 - HERITAGE DESIGNATIONS



- Scheduled Ancient Monuments
- Conservation Areas
- Historic Parks and Gardens
- Parish Boundaries
- Ancient Woodland

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries

2.6

Tranquillity mapping

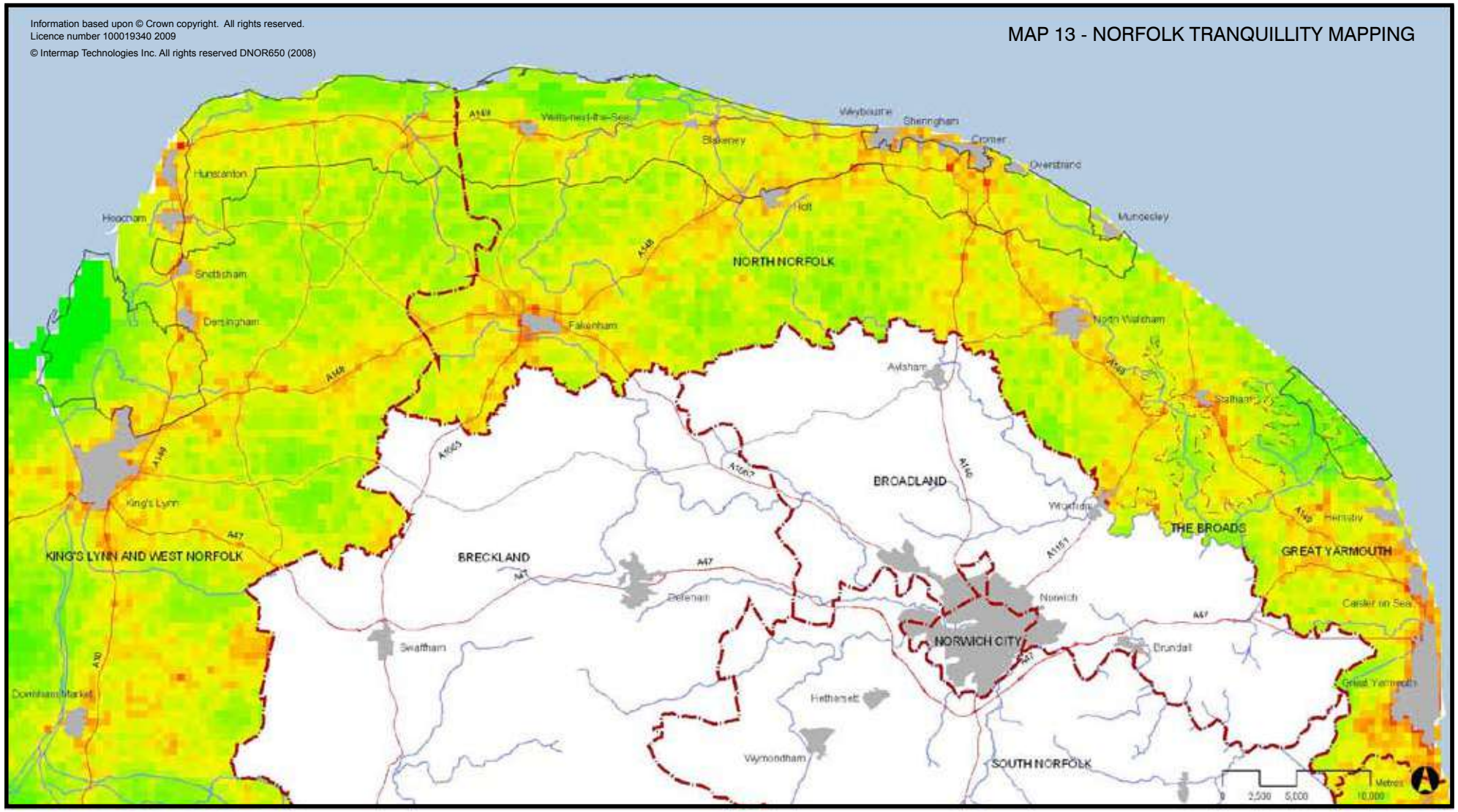
Map 13 shows *Tranquillity Mapping for North Norfolk* as provided by the Council for the Protection of Rural England (CPRE).

A two step process was used to develop the map:

- Firstly, the researchers used a nationwide survey to test what tranquillity means to people and their perceptions of what factors were most likely to add to and to detract from their sense of experiencing tranquillity when they visited the countryside.
- Secondly, using a Geographical Information Systems (GIS) model, they associated the survey information with a range of national datasets and took account of topography to create a map showing how likely each locality was to make people feel tranquil.

The resulting map gives an overall impression of changes in perceptions of tranquillity across North Norfolk and indicates the relative remoteness of the coastal landscapes, versus those inland and along the roads. However, it does highlight the settlements and roads just inland from the coast and it is clear that only a relatively thin band of coastline is truly tranquil along the North Norfolk Coast. The map shows that the western outlier of the AONB, which includes the vast mudflats bordering The Wash, is exceptionally tranquil because the roads and settlements in this area are further inland.

MAP 13 - NORFOLK TRANQUILLITY MAPPING



Tranquality 2006 Value

High : 148.699

Low : -140.517

- 'A' Road
- 'B' Road
- Main River
- Area of Outstanding Natural Beauty
- Settlement
- District Council Boundaries