
The Plain of Holderness Natural Area Profile

**The
Plain of Holderness**

**English Nature
North and East Yorkshire Team
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1. Introduction

1.1 The Natural Area Concept

Natural Areas are a new way of looking at the natural environment around us. Using our specialist knowledge of wildlife and natural features, English Nature has identified over 140 areas, covering the land surface and coast of England, each of which can be characterised by its unique combination of wildlife, landform, land use and human history. The boundaries of these Natural Areas often vary from existing administrative boundaries. They provide the framework for much of English Nature's work, and are key to our drive to achieve, enable and promote nature conservation in England. Natural Areas have been welcomed by many of our conservation partners, and by defining local needs in light of national priorities, also provide a focus for Local Biodiversity Action Plans.

Natural Areas are a sensible scale at which to view our wildlife resource, both locally and nationally. They help increase our knowledge, understanding and appreciation of the wildlife and natural features around us.

1.2 The Natural Area Profile

This profile is written for everyone with an interest in the nature conservation resource of Holderness. Its aim is to inform, promote debate, aid decision making, guide and stimulate local action. The profile briefly describes and evaluates the wildlife and geological features of Holderness, reflecting local, national and international perspectives on nature conservation. It sets out the main issues which English Nature recognises as affecting Holderness, and in light of these identifies long-term objectives which we believe will conserve and enrich its existing wealth of wildlife and geology.

1.3 Context: Natural Areas and the *UK Biodiversity Action Plan*

In June 1992 the Prime Minister and over 150 other Heads of State signed the *Convention on Biological Diversity* at Rio de Janeiro. They did so to express a shared belief that action must be taken to halt the worldwide loss of animal and plant species and genetic resources. At the same time they agreed to draw up national plans and programmes and to share resources to help implement them. In Britain this resulted in the first *UK Biodiversity Action Plan* published in 1994.

The Plan commits the Government to the objectives of the Convention. Its production required a wide ranging and vigorous contribution from people and organisations who care about our natural environment. The Government can take a lead and establish a framework but whether, in the end, we and our children enjoy a country which is richer or poorer in species and habitats depends on all of us (*Department of the Environment, 1994*).

There has been a massive reduction in the extent and quality of habitats in the countryside outside protected wildlife sites. Populations of animals and plant species have declined with the changes in their habitats. The Natural Area concept is a broad view of the nature conservation needs of ecologically distinct areas. From it will flow objectives and plans of action which will aim to maintain and sometimes restore the range of habitats and species which characterise the area.

The *UK Biodiversity Action Plan* envisages the production of *Local Biodiversity Action Plans*. These will be the means whereby the national strategy is translated into action at the local level. They will include targets which will contribute locally to the attainment of national targets for habitats and species. They will also include targets which reflect the values of local people and which are based on the range of local conditions.

The Natural Area Profiles will form a basis for *Local Biodiversity Action Plans*. They are intended to be visionary in their objectives, without timescales, and unconstrained by considerations of what can be achieved under present circumstances. By contrast, the *Local Biodiversity Action Plans* will contain more precise targets for habitats and species which can be realistically achieved within defined timescales. They will be produced and owned by a broad partnership of organisations with an interest in the countryside. Through this approach it is hoped that the efforts and resources of all organisations can be mobilised and coordinated. This could achieve results which would not be possible for any single nature conservation body working alone.

English Nature, as the Government's statutory advisors on nature conservation in England, has a key role to play in initiating action. We see the development of the Natural Areas concept as an important part of that role.

Goals, principles and objectives of the UK Biodiversity Action Plan

- **Overall goal**

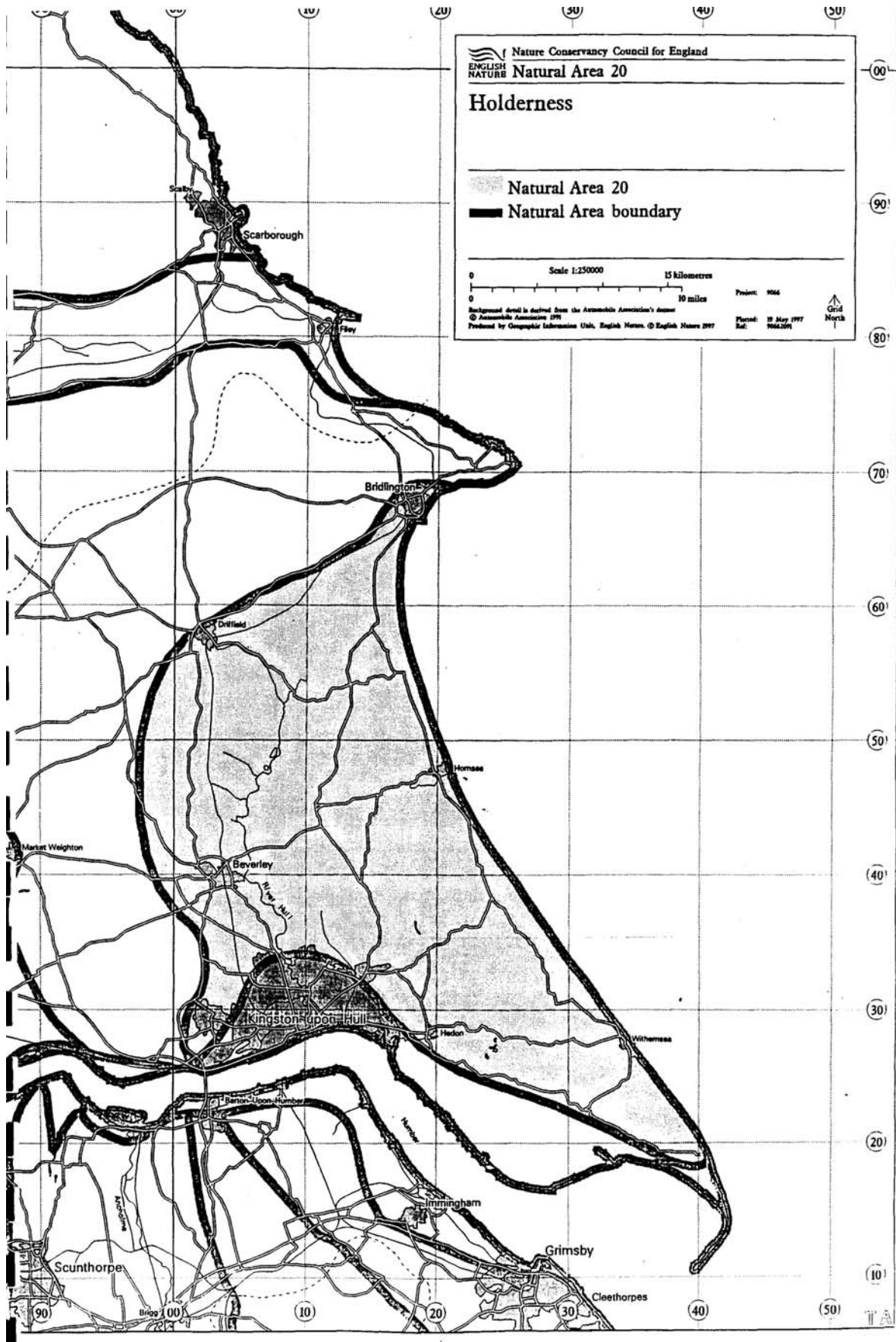
To conserve and enhance biological diversity (the variety of life) within the UK and to contribute to the conservation of global biodiversity through all appropriate mechanisms.

- **Underlying principles**

1. Where biological resources are used, their use should be sustainable.
2. Wise use should be ensured for non-renewable resources.
3. The conservation of biodiversity requires the care and involvement of individuals and communities as well as governmental processes.
4. Conservation of biodiversity should be an integral part of Government programmes, policy and action.
5. Conservation practice and policy should be based upon a sound knowledge base.
6. The precautionary principle should guide decisions.

- **Objectives for conserving biodiversity**

1. To conserve and, where practicable, enhance:
 - (a) The overall populations and natural ranges of native species and the quality and range of wildlife habitats and ecosystems.
 - (b) Internationally important and threatened species, habitats and ecosystems.
 - (c) Species, habitats and natural and managed ecosystems that are characteristic of local areas.
 - (d) The biodiversity of natural and semi-natural habitats where this has been diminished over recent past decades.
2. To increase public awareness of and involvement in, conserving biodiversity.
3. To contribute to the conservation of biodiversity in a European and global scale.



NA 20 Holderness

2. Holderness Natural Area

Holderness lies on the east coast of England. It is a low-lying plain of glacial hills, with areas of gravel and sand deposited in late glacial times. Landscape features such as drumlin mounds, hummocky terrain, ridges and kettle holes are present-day reminders of the deposits left by the glaciers and ice-sheets which once covered the area. The plain is bordered to the north and west by the rising land of the Yorkshire Wolds Natural Area, and to the south by the Humber Estuary Natural Area. To the east is the North Sea.

Holderness has a rural character of arable and pasture farmland. Fields are generally large and woodland cover is sparse, resulting in an open, exposed landscape. When drained, the glacial deposits provide fertile soils that can support intensive arable cultivation. As a result, a large proportion of land falls within the top grades of MAFF's Agricultural Land Classification System.

Human settlement is usually on 'islands' of higher ground and dispersed into many villages and hamlets with village churches which provide important landmarks in the generally flat landscape. Beverley, Driffield, Hornsea and Bridlington are the main population centres, with the outskirts of Hull providing the only major urban influence. The predominant building materials are red brick and pantiles, with some older buildings, especially churches, built of limestone imported from outside the region. Near the coast, flint and cobbles characterise building material.

Although much has been lost to competing land uses, the nature conservation resource of Holderness still includes wetlands, unimproved grasslands, woodlands and scrub which support a wide range of characteristic animal and plant species. Additionally, the eroding coastline, and commercial exploitation of sand and gravel deposits are a focus for geological study and conservation.

3. Habitats, species and natural features

3.1 Geology

Key geological features:

- Glacial clays forming a low-lying, slightly undulating plain
- Sites of former meres and links to palaeobotany and archaeology
- Sand and gravel deposits

Although the Holderness Natural Area is underlain by Cretaceous Chalk, in most places it is so deeply buried beneath later glacial deposits that it plays no part in fashioning the landscape. Instead the landscape is dominated by a series of glacial deposits consisting of tills, boulder clays and glacial lake clays. These were deposited during the Devensian glaciation, during a period of glacial advance known as the Dimlington Stadial which took place between 26,000 and 13,000 years before present. The glacial deposits form a more or less continuous lowland plain, characterised by poorly sorted and poorly consolidated stony material. In places, the boulder clay plain is capped by peat filled depressions (known as

meres) which mark the existence of former lake beds. Some of these depressions are kettle holes formed due to the differential melting of glacial ice and their peat and pollen remains provide important information about Quaternary environmental change and archaeological settlement patterns in the area over the last 13,000 years. The coastal section of the Natural Area is dominated by rapid marine erosion, with rates of cliff recession measured at up to 2 metres per year in places. The geological importance of certain sections of the cliff are described in the Bridlington to Skegness Maritime Natural Area

A number of Sites of Special Scientific Interest (SSSI) have been notified under the 1981 Wildlife and Countryside Act, to safeguard some of the most important geological features of Holderness. These sites demonstrate the effects of Quaternary glaciation on the area. For instance, Kelsey Hill Gravel Pits SSSI shows the composition of fluvio-glacial outwash gravels on top of the glacial clay plain, Withow Gap, Skipsea SSSI is the type locality for the Skipsea Till and pollen preserved in peat deposits at Roos Bog SSSI provides information about plant succession and re-establishment of vegetation communities in Holderness after the glaciers retreated.

Key issues:

- **Threats to former meres from inappropriate agricultural management and development**
- **Threats to inland geological exposures from mineral extraction and inappropriate site restoration.**

3.2 River Hull and riparian fringes

Key nature conservation features:

- chalk stream headwaters
- flood plain grassland and marsh
- remnant reedswamp
- alder and willow carr
- breeding birds

Rising from natural calcareous springs around Driffield, the River Hull runs its course southwards to join the River Humber at Hull. The River Hull valley dominates the western landscape of Holderness and both the river and its adjacent wetland habitats support a diverse range of plants and animals.

The upper tributaries of the River Hull originate on the edge of the Yorkshire Wolds and enter an alluvial flood plain with drift deposits of glacial till and occasional pockets of sand and gravel within a few miles of their source. This surface geology influences the character of the river with gravel, sand and silt sediments deposited on the riverbed in varying proportions. This variation in the riverbed sediments is reflected in the species composition of the aquatic vegetation which is abundant throughout the headwaters during the summer.

In recognition of its importance as the most northerly chalk stream system in Britain, the headwaters of the River Hull have been designated as a SSSI. Species characteristic of the upper reaches of the Hull are stream water crowfoot, lesser water parsnip, mare's-tail, spiked water-

milfoil, fennel pondweed and shining pondweed in the channel, whilst the marginal vegetation is often composed of branched bur-reed, common reed, reed canary-grass and reed sweet-grass. Opposite-leaved and flat-stalked pondweeds occur locally, with river water-dropwort occurring in the middle reaches. The latter is a scarce species at the northern limit of its British range here; it is endemic to Northern Western Europe and of highly restricted occurrence outside the Britain and Ireland. The aquatic and emergent marginal vegetation provides habitats suitable for a diverse invertebrate fauna including several uncommon species.

Otters have recently recolonised the upper reaches of the River Hull and its headwaters, with increasing evidence that this species is now well-established once again. The once-familiar Water Vole is, however, confined to a very few isolated populations. The invertebrate fauna of the river is also of interest with notable species including the uncommon mayflies *Heptagenia fuscogrisea* and *Caenis robusta*.

Associated with, and influenced by the river are riparian habitats that are of great value for wildlife. For instance species-rich wet grassland and marsh is still quite extensive in the upper reaches, particularly between Driffield and Wansford. Further consideration will be given to these habitats in the next section.

Reflecting this diversity of habitat, the river valley supports a diverse breeding bird community, including several waders such as lapwing, snipe and redshank, wildfowl, particularly mallard and mute swan, together with yellow wagtail, sedge warbler, reed warbler, reed bunting and many more widely occurring species.

As the River Hull runs further south towards Beverley and Hull, the river becomes tidal in nature with an associated increase in salinity. In these lower reaches the river is enclosed by floodbanks to protect adjoining farmland and settlements. Although still forming a focus for bird movement, the river has little associated natural habitat remaining. One notable exception is at Pulfin Bog SSSI, where a seasonally flooded and spring-fed reedswamp has formed in a major bend of the river channel.

Key issues:

- **maintenance of water quality**
- **nutrient-enrichment from adjacent land-uses, including agriculture, water-treatment works, fish farms**
- **river engineering and flood defence**
- **water abstraction from aquifer and surface - waters**
- **recreational pressure including navigation and angling**
- **overgrazing of banks and bankside habitats**
- **loss of riparian habitat to competing land uses**
- **channel maintenance including desilting and weed-cutting**

3.3 Meres and other wetlands

Key nature conservation features

- Hornsea Mere
- gravel pits
- opportunities for studying Quaternary stratigraphy

The retreating ice from Holderness left many pools and lakes in the impermeable boulder clay deposits. The largest remaining of these post-glacial features is Hornsea Mere. The majority of the rest eg Skipsea and Lambwath Meres, having silted up or been drained and reclaimed for agriculture. As well as the loss of the meres, the majority of the former extensive natural wetlands that developed over time on the water-logged plain have been subject to drainage schemes and agricultural improvement. As in the Cambridgeshire and Lincolnshire Fens, the original wetlands supported an important rural economy based on exploiting the natural resources such as reed for thatching, fish and wildfowl. The valley of the River Hull was especially important in this respect. However, by the late 18th Century the wetlands and the economy which depended upon them were rapidly diminishing, replaced by farming of the fertile soils left in their wake.

Nonetheless, despite their restricted nature, fens and reedswamps remain an important habitat in Holderness. The main concentrations of these habitats are along the River Hull between Driffield and Wansford and at Pulfin Bog; along the Leven Canal; and around the fringes of Hornsea Mere. Other important examples are found at Kellythorpe and the Keld near Driffield, and at Bryan Mills.

Typical fen plants include common reed, reed sweet-grass, purple small-reed, blunt-flowered rush, yellow flag, valerian, skullcap and meadowsweet. Large sedges are prominent in some types of fen, with greater tussock sedge and tufted sedge particularly important in this Natural Area. More localised fen species include great water dock, greater spearwort, marsh valerian, marsh cinquefoil and southern marsh orchid. Several national rarities also occur, albeit usually in small populations. These include lesser tussock sedge, marsh fern, marsh pea and a subspecies of the endemic marsh orchid *Dactylorhiza majalis*.

Hornsea Mere is now the largest natural lake in Yorkshire, some 120 hectares in size. Associated with the open water are marginal habitats of reedswamp, species-rich fen and carr woodland. With the loss of the once extensive wetlands of Holderness, the importance of the mere as a refuge for wildlife has increased accordingly. It now regularly supports populations of wintering wildfowl such as gadwall, goldeneye, pochard, shoveler and tufted duck, which make it of both national and international significance. In recognition of this the Mere has been designated an SSSI, and a Special Protection Area (SPA) under the EC Birds Directive. The fringing habitats add to the diversity of birdlife, and the reedbeds, for instance, provide breeding sites for hundreds of pairs of reed warblers, as well as roosting areas for large numbers of starlings and swallows. It is also a very important site for little gulls which congregate in large numbers in the autumn.

Reed swamps are also of entomological interest with a number of scarce crane-flies, dance-flies, snail-killing flies and wainscot moths recorded here. The fringing reedswamp at

Hornsea Mere has noticeable affinities with the East Anglian fens with such characteristic plants as milk parsley, greater water parsnip and lesser reedmace. A rare money spider recorded here, *Entelecara omissa*, is also a predominantly East Anglian species.

Although little remains of the original wetlands which covered large parts of Holderness, some habitats have been created by human activity. The Leven Canal constructed in 1802 and which stretches for five kilometres between Leven and the River Hull, now supports a remnant of the flora and associated fauna which would have been found in the surrounding marshland prior to its drainage for cultivation. This includes plants such as arrowhead, fan-leave water crowfoot, flowering rush, common club-rush and, very locally, greater water parsnip. The nationally-rare narrow small-reed, a relict sub-arctic species, grows along the canal where it also hybridises with purple small-reed. The Leven Canal supports interesting invertebrates including the regionally rare red-eyed damselfly and a number of uncommon reed-beetles.

More recently, extraction of sand and gravel deposits for the construction industry has created pits which, in time, have filled with water and revegetated to become valuable wildlife habitats. The series of linear pits at Brandesburton are one example. Borrow pits by the River Hull at Pulfin support what may be the only native population of water soldier in Yorkshire.

At Tophill Low pumping station, two artificial reservoirs built close to the River Hull south of Driffield have become a haven for wintering wildfowl. The site regularly supports nationally-important populations of gadwall, shoveler and tufted duck. This most unlikely of SSSIs shows that totally artificial water bodies, in this case storage reservoirs for public supply, can provide a habitat favoured by wildlife, even when this was not a factor taken into consideration in their design.

Key Issues:

- **water quality and quantity (abstraction, land drainage and water level management), including low flows in springs.**
- **recreation pressure on important wildlife sites including, boating, jet skiing and angling.**
- **eutrophication from adjacent land-uses which may be a factor in the reduction in species diversity.**
- **mineral extraction and gravel put restoration to uses of limited value to wildlife and preservation of important geological and geomorphological features.**

3.4 Neutral grassland

Key nature conservation features

- wet neutral grassland (MG4)
- dry neutral grassland (MG5)
- breeding and wintering birds

Unimproved species-rich grassland that occurs on soils with a neutral pH is a rare resource in Holderness. There are remnants around Hornsea and Lambwath Meres and small scattered

sites elsewhere but the most significant occurrence of this habitat is to be found along the minor valley of the Lambwath Stream near Withernwick. Here, the low-lying, seasonally flooded hay fields on either side of the stream are maintained by traditional farming practices of hay-cutting followed by aftermath grazing. Once widespread, grasslands of this type are now very restricted in their distribution both in Holderness and nationally, due principally to agricultural improvement. The total resource of unimproved neutral grassland in the Natural Area is estimated to be around 55ha, excluding scattered stands on roadside verges.

Grasslands at Lambwath Meadows, which lie within the seasonally flooded zone are characterised by meadow foxtail, common sorrel, meadow rue and a diverse range of other grasses, sedges, rushes and herbs. Where the land rises from the flood plain on the valley slopes a drier grassland is characterised by plants such as crested dog's tail, common bent, bird's-foot trefoil, cowslip, ox-eye daisy and lady's bedstraw. The uncommon green-winged orchid and early marsh orchid are associated with seepage lines in this higher ground.

Key issues:

- **habitat fragmentation**
- **drainage and lowering of water tables reducing flooding frequency of wet grassland**
- **lack of traditional management**
- **loss to competing land use, particularly conversion to arable/intensive farming**

3.5 Woodland, hedges and scrub

Key nature conservation features

- semi-natural ancient woodland (W8/W9)
- alder and willow carr
- scrub (W21)

Modern day Holderness is a very sparsely wooded landscape. However, by studying the fossil pollen record preserved in peat deposits, it is evident that Holderness was at one time cloaked in forests. From the initial colonisation of birch as the glaciers retreated, to a high forest of oak some five thousand years ago, early human settlers would have been faced with an extensive wildwood, the composition of trees and shrubs reflecting variation in underlying soil types and degree of waterlogging. Some areas, such as the tracts of fen which once were common in the river valleys and surrounding the numerous meres, would have been free of continuous tree cover, but otherwise woodland would have been the final stage in the succession of vegetation prior to human intervention in shaping the landscape.

The current landscape of Holderness with its long views, large arable fields and sparse woodland cover is a testament to the woodland clearance and drainage that began with the earliest settlers. Within the Natural Area, there are few woods remaining that may perhaps link back to the ancient forests that once covered much of Holderness. Low Wood with its extensive alder and willow carr characteristic of 'wet' areas at Hornsea Mere, Bail Wood near Aldbrough and Burton Bushes at Beverley give probably the best surviving clues of what the wildwood may have been like before its subsequent clearance. Burton Bushes, for

example, can be traced back at least two hundred years. With a canopy of primarily oak, with an understorey of field maple, wych elm and holly, the wood is a good indication of the type of woodland that would have once been common on the Holderness Till soils. As well as the tree and shrub species, Burton Bushes is still home to a number of woodland floor plants that are generally taken to be evidence that the site is of ancient origin, such as wood anemone, wood sorrel and yellow pimpernel.

The total area of ancient woodland in Holderness is just 83ha, 68ha of which is considered to be semi-natural. Ancient woodland covers just 0.1% of the Natural Area, the second lowest proportion of the 120 Natural Areas in England.

Key issues:

- **lack of traditional management which is sensitive to characteristic species**
- **planting and/or encouragement of non-native species.**
- **removal and conservation to other land uses.**

3.6 Farmland

Key nature conservation features

- open arable fields
- mosaic of arable, grassland, ditches and hedgerows/small copses

The gently undulating landscape of Holderness is predominantly arable and intensively managed grassland. Almost all of the farmland has lost many of the important features for wildlife such as, winter stubbles, uncropped field margins and boundary habitats including ditches and hedgerows.

Typical farmland species are probably surviving best where landscape diversity is high ie where there is a patchwork of arable, grassland, ditches, small copses and hedgerows. Indeed, there are strongholds in this NA for both barn owl and corn bunting. Other species of conservation concern associated with the arable areas include, grey partridge, skylark and hare. Another characteristic and important feature of the large open (apparently bare) arable fields in the autumn, shortly after a crop has been sown, is the important numbers of golden plover and lapwing which congregate to and/or roost.

Key issues:

- **severe fragmentation of natural habitats.**
- **loss of traditional arable habitats, such as, winter stubbles due to intensive management.**
- **limited assessment of wildlife features including arable weeds and specific importance of fields for roosting and/or feeding wading birds.**

3.7 Extinct species

Although the Natural Area remains an important stronghold for a number of scarce or threatened species, especially those associated with aquatic and fen habitats, numerous plants

and animals have disappeared during the past century. The burbot, the only freshwater fish to have become extinct in Britain, occurred in the River Hull system in the early years of the present century. Several aquatic plants which have been lost from Holderness are now scarce in Britain as a whole including star-fruit, grasswack pondweed and sharp-leave pondweed. A further group of locally-extinct species were associated with acidic heaths, grasslands and mires - habitats which have almost entirely disappeared from the Natural Area. Examples include plants such as bog myrtle, harte's tail cotton-grass, dyer's greenweed, pennyroyal and clubmosses. Several once-frequent arable weeds such as corn buttercup, shepherd's needle and cornflower are now either extinct in Holderness or occur only casually.

4. Nature conservation objectives

The following section lists objectives English Nature considers are needed to enable the maintenance, recovery and enhancement of key habitats and natural features within the Holderness Natural Area.

4.1 Geology

- Maintain and enhance important geological exposures and other earth science sites, encouraging owners/occupiers to positively manage sites and ensuring local planning authorities take earth science issues seriously when considering planning matters
- Maintain and encourage access to other science sites and ensure important features are not obscured by encroaching vegetation thereby allowing current and future study
- Encourage interpretation and educational of earth science sites highlighting links between earth science and other interests eg human history

4.2 Wetlands

- Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management
- Meet all the requirements of international treaties (ie the Birds Directive) relating to wetland conservation.
- Restore and enhance the hydrology, water quality and management of wetland sites that are currently in a sub-optimum condition
- Seek opportunities for habitat creation and restoration of wetland habitats and help reduce fragmentation
- Maintain and enhance important populations of wetland plants and animals, and carry out appropriate monitoring to determine their status
- Identify measures to minimise recreational disturbance, especially to bird population
- Liaise with the Environment Agency and other key partners over policy issues and

planning to maximise benefits to nature conservation

4.3 Neutral grassland

- Maintain and resist further fragmentation of the neutral grassland resource
- Maintain existing and restore degraded grasslands by encouraging sympathetic management where this is not already occurring
- Expand grassland resource with priority being given to linking fragments and extending existing sites

4.4 Woodland, hedges and scrub

- Encourage native species of tree and shrub, through selective felling of non-natives, promotion of natural regeneration and new planting of native species only
- Manage semi-natural woods and new plantations to benefit wildlife, particularly characteristic flora and breeding birds

4.5 Farmland

- Encourage the appropriate management of existing areas of wildlife importance and link habitats through restoration and creation
- Encourage creation of grass strips for hunting barn owls and provide nest boxes as appropriate. Particularly, along existing watercourses and hedges
- Farmland birds: the distribution of populations of grey partridge, turtle dove, skylark and corn bunting will be maintained and increased. In addition the importance of arable areas for roosting and feeding sites for wading birds eg golden plover and lapwing will be assessed. Agri-environment incentives will take account of the ecological requirements of these species within Natural Area

5. References

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Appendix I – Key features and species of the Holderness Natural Area

Natural Area: Holderness	Habitat/Feature: Geological features
<p>Characteristic Features:</p> <p>Glacial Clays forming a low lying, slightly undulating plain. Sites of former meres and links to paleobotany and archaeology. Sand and gravel deposits</p> <p>Examples of the following GCR blocks are found.</p>	

Natural Area: Holderness	Habitat/Feature: Rivers and riparian fringes																																			
<p>Characteristic Features:</p> <p>Chalk stream headwaters Flood plain grassland and marsh Remnant reedswamp</p>																																				
<p>Characteristic Species:</p> <table> <tr> <td>Marsh marigold</td> <td>Snipe</td> <td>Otter</td> <td>Brown trout</td> <td>Dragonflies</td> </tr> <tr> <td>Stream water crowfoot</td> <td>Mute swan</td> <td>Water vole</td> <td></td> <td></td> </tr> <tr> <td>Water cress</td> <td>Sedge warbler</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Branched bur-reed</td> <td>Kingfisher</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Reed sweet grass</td> <td>Barn owl</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Jointed rush</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Crack willow</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Marsh marigold	Snipe	Otter	Brown trout	Dragonflies	Stream water crowfoot	Mute swan	Water vole			Water cress	Sedge warbler				Branched bur-reed	Kingfisher				Reed sweet grass	Barn owl				Jointed rush					Crack willow				
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	Little gull																								

Natural Area: Holderness	Habitat/Feature: Neutral grassland
Characteristic Features: Wet neutral grassland (MG4) Dry neutral grassland (MG5) Breeding and wintering birds	
Characteristic Species: Meadow foxtail Lapwing Sweet vernal grass Kestrel Meadow rue Green-winged orchid Lady's bedstraw Yorkshire fog Crested dog's tail Ox-eye daisy Ragged robin	

Natural Area: Holderness	Habitat/Feature: Woodland, hedges and scrub
Characteristic Features: Semi-natural ancient woodland (W8/W9) Alder and willow carr Scrub (W21)	
Characteristic Species: Ash Great spotted woodpecker Oak Willow warbler Hawthorn	

Natural Area: Holderness	Habitat/Feature: Farmland
Characteristic Features: Open arable fields Mosaic of arable, grassland, ditches and hedges/small copses	
Characteristic Species: Lapwing Hare Golden plover Grey partridge Corn bunting Barn owl	

Appendix II - Scientific names of species referred to in this profile

Arrowhead	<i>Sagittaria sagittifolia</i>
ash	<i>Fraxinum excelsior</i>
Barn owl	<i>Tyto alba</i>
blunt-flowered rush	<i>Juncus subnodulosus</i>
Bog myrtle	<i>Myrica gale</i>
branches bur-reed	<i>Sparganium erectum</i>
broad-leaved pondweed	<i>Potamogeton natans</i>
brown trout	<i>Salmo trutta</i>
burbot	<i>Lota lota</i>
Common birdsfoot trefoil	<i>Lotus corniculatus</i>
common club-rush	<i>Schoenoplectus lacustris</i>
common reed	<i>Phragmites australis</i>
common sorrel	<i>Rumex acetosa</i>
corn buttercup	<i>Ranunculus arvensis</i>
cornflower	<i>Centaurea cyanus</i>
cowslip	<i>Primula veris</i>
crack willow	<i>Salix fragilis</i>
crested dogstail	<i>Cynosurus cristatus</i>
Dyer's greenweed	<i>Genista tinctoria</i>
early marsh orchid	<i>Dactylorhiza incarnata</i>
Fan-leaved water crowfoot	<i>Ranunculus circinatus</i>
fennel pondweed	<i>Potamogeton pectinatus</i>
filed maple	<i>Acer campestre</i>
flat-stalked pondweed	<i>Potamogeton friesii</i>
flowering	<i>Butomus umbellatus</i>
Gadwall	<i>Anas strepera</i>
Goldeneye	<i>Bucephala clangula</i>
grasswrack pondweed	<i>Potamogeton compressus</i>
great crested grebe	<i>Podiceps cristatus</i>
great spotted woodpecker	<i>Dendrocopos major</i>
great water dock	<i>Rumex hydrolapathum</i>
greater spearwort	<i>Ranunculus lingus</i>
greater tussock sedge	<i>Carex paniculata</i>
greater water parsnip	<i>Sium latifolium</i>
green-winged orchid	<i>Orchis morio</i>
Hare's-tail cotton-grass	<i>Eriophorum vaginatum</i>
hawthorn	<i>Crataegus monogyna</i>
holly	<i>Ilex aquifolium</i>

J ointed rush	<i>Juncus articulatus</i>
K estrel	<i>Falco tinnunculus</i>
kingfisher	<i>Alcedo atthis</i>
L ady's berdstraw	<i>Galium verum</i>
lapwing	<i>Vanellus vanellus</i>
lesser reedmace	<i>Typha angustifolia</i>
lesser tussock sedge	<i>Carex diandra</i>
lesser water parsnip	<i>Berula erecta</i>
M are's tail	<i>Hippuris vulgaris</i>
marsh cinquefoil	<i>Potentilla palustris</i>
marsh fern	<i>Thelypteris palustris</i>
marsh helleborine	<i>Epipactis palustris</i>
marsh marigold	<i>Caltha palustris</i>
marsh pea	<i>Lathyrus palustris</i>
marsh valerian	<i>Valeriana dioica</i>
marsh wouldwort	<i>Stachys palustris</i>
meadow foxtail	<i>Alkopecurus pratensis</i>
meadow-rue	<i>Thalictrum flavum</i>
meadowsweet	<i>Filipendula ulmaria</i>
milk parsley	<i>Peucedanum palustre</i>
mute swan	<i>Cygnus olor</i>
N arrow small-reed	<i>Calamagrostis stricta</i>
O ak	<i>Quercus robur</i>
opposite-leave pondweed	<i>Groenlandia densa</i>
otter	<i>Lutra lutra</i>
oxeye daisy	<i>Leucanthemum vulgare</i>
P ennyroyal	<i>Mentha pulegium</i>
pochard	<i>Aythya Ferina</i>
purple small-reed	<i>Calamagrostis canescens</i>
R ed-eyed damselfly	<i>Erythromma najas</i>
redshank	<i>Tringa totanus</i>
reed bunting	<i>Emberiza schoeniclus</i>
reed canary grass	<i>Phalaris arundinacea</i>
reed sweet grass	<i>Glyceria maxima</i>
reed warbler	<i>Acrocephalus scirpaceus</i>
river water-dropwort	<i>Oenanthe fluviatilis</i>
S edge warbler	<i>Acrocephalus schoenobaenus</i>
sharp-leaved pondweed	<i>Potamogeton acutifolius</i>
shepherd's needle	<i>Scandix pecten-veneris</i>
shining pondweed	<i>Potamogeton lucens</i>
shoveler	<i>anas clypeata</i>

skullcap
snipe
southern marsh orchid
spiked water milfoil
star-fruit
starling
stream water crowfoot

Teal
tufted duck
tufted sedge

Valerian

Water cress
water soldier
water vole
white water-lily
willow warbler
wood anemone
wood sorrel
wych elm

Yellow flag
yellow pimpernel
yellow wagtail
yellow water-lily

Scutellaria galericulata
Gallinago gallinago
Dactylorhiza praetermissa
Myriophyllum spicatum
Damasonium alisma
Sturnus vulgaris
Ranunculus penicillatus

Anas crecca
Aythya fuligula
Carex elata

Valeriana officinalis

Rorippa nasturtium-aquaticum
Stratiotes aloides
Arvicola terrestris
Nymphaea alba
Phylloscopus trochilus
Anemone nemorosa
Oxalis acetosella
Ulmus glabra

Iris pseudacorus
Lysimachia nemorum
Motacilla flava
Nuphar lutea