South Cambridgeshire Local Plan Submission Sustainability Appraisal Report

Appendix 13: Habitats Directive Assessment Background information

Prepared for:
South Cambridgeshire District Council

Prepared by:
ENVIRON
Exeter, UK

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Project Manager/Director (signature):	Victoria Tanner-Tremaine
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1 Introduction

This appendix sets out the background information on European sites that was collated and reported in The South Cambridgeshire Sustainability Appraisal (SA) Scoping Report which was prepared in-house by South Cambridgeshire District Council. Consultation was carried out with the key statutory environmental bodies (the Environment Agency, Natural England, and English Heritage) in February 2012. It is presented here as an appendix to the SA Report - Part 2: Scoping Report, as scoping background on the European sites. Information on the condition of the European sites has subsequently been updated as part of the ongoing Habitats Regulations Assessment (HRA) process and is presented in the Habitats Regulations Assessment Report (March 2014) which is available to download from the Council's website here: www.scambs.gov.uk/localplan

2 Information on the Natura 2000 Sites (November 2011)

2.1 NAME: EVERSDEN AND WIMPOLE WOODS

Designation and Code

Special Area of Conservation (SAC) – UK0030331

SSSI boundary is the same as the SAC

Location

The site is located in South Cambridgeshire District, but outside the area covered by the North West Cambridge Area Action Plan. The site is located close to Wimpole Park.

Grid ref: **TL 340526** Area: **66.48 ha.**

Primary reason for selection of the site

Presence of colony of Barbastelle bats *Barbastella barbastellus* for which it is considered to be one of the best areas in UK.

Conservation objective

To maintain, in favourable condition, the habitats for the population of Barbastelle bats.

General Site characteristics

Broadleaved deciduous woodland (100%)

Soil and geology – Basic, Clay

Geomorphology and Landscape – Lowland

Species

Barbastella barbastellus bats. This is one of the UK's rarest mammals. The species is protected on Schedule 5 of the Wildlife and Countryside Act 1981.

Site Description

The site comprises a mixture of ancient coppice woodland (Eversden Wood) and high forest woods likely to be of more recent origin (Wimpole Wood). A colony of barbastelle bats is associated with the trees in Wimpole Woods. These trees are used as a summer maternity roost where the female bats gather to give birth and rear their young. Most of the roost sites are within tree crevices. The bats also use the site as a foraging area. Some of the woodland is also used as a flight path when bats forage outside the area.

Eversden Wood is species-rich example of ancient ash (*Fraxinus excelsior*) field maple (*Acer campestre)* – dog's mercury (*Mercurialis perennis*) woodland and one of the largest remaining sites of this type on the Cambridgeshire chalky boulder-clay.

The woodland is predominantly relict coppice of ash and field maple over an understorey of hazel (*Corylus avellana)* with aspen (*Populus tremula*), birch (*Betula sp*) and small-leaved elm (*Ulmus minor*) also locally dominant.

The ground flora is characterised by dog's mercury and bluebell (*Hyacinthoides non-scripta*), and the damp soil conditions are reflected in the local abundance of associated plants such as meadowsweet (*Filipendula ulmaria*) and tufted hair-grass (*Deschampsia cespitosa*). Many herbs typical of old woodlands are present including yellow archangel (*Galeobdolon luteum*), wood anemone (*Anemone nemorosa*) and the nationally scarce oxlip (*Primula*

elatior) a species largely confined to damp chalky boulder-clay woods of eastern England. Other locally uncommon plants represented include herb-Paris(*Paris quadrifolia*), and, particularly on the drier wood banks, pignut (*Conopodium majus*) and hairy wood-rush *(Luzula pilosa*).

The woodland rides provide additional habitat diversity and support herbs such as ragged-Robin (*Lychnis flos-cuculi*) and false fox-sedge (*Carex otrubae).*

Management and ownership

The primary management principles used for this site are those that maintain a regime of minimum management with little disturbance in order to protect the roosting sites in the woodland for the barbastelle bats.

Wimpole Woods is owned and managed by the National Trust and their management is aimed at maintaining and where possible, enhancing the barbastelle population.

Eversden Wood is privately owned and the current management is considered compatible with the use of this wood as a foraging area / flight path by barbastelles.

Access

There is public access to the woods. Public rights of way go through both areas of woodland.

Wimpole Wood is near to Wimpole Park where the National Trust provide car parking for visitors to their estate. This is around 1km as the crow flies from the start of the woodland. There is also a minor road that runs between Wimpole and Eversden Woods and this provides very limited on road parking available closer to Eversden Wood but still some 500m away. This is not signposted as available for parking.

Current condition (October 2011)

Natural England compiled a conditions report on Eversden and Wimpole Wood SSSI in October 2011 (from survey work in January / December 2010) and found that the site is meeting 100% of its PSA targets.[1] 39.88% of the area is in a favourable condition and 60.12% is in an unfavourable recovering condition. None of the area is in decline.[2]

Barbastelle bats require minimal disturbance within 2 km of their roost. They can forage up to 20km from their roosts but more typically venture around 6-8km. Barbastelle bats' foraging routes radiate out from their roosting sites using a limited number of main routes, which split into major limbs and then into small branches.[3] The main area of importance for them is shown on Map 1 in the Biodiversity Supplementary Planning Document adopted by South Cambridgeshire District Council in July 2009 (see page 23). It reflects the landscape and habitat of known value to bats, and also where survey effort has been deployed to date.

[1] PSA target – the Government's Public Service agreement (PSA) target to have 95% of the SSSI area in favourable or recovering condition by 2010.

[2] Favourable condition means that the SSSI land is being adequately conserved and is meeting its conservation objectives.

[3] Greenaway F (2004) Advice for the management of flightlines and foraging habitats of the barbastelle Bat *Barbastella barbastellus*, English Nature Research Report 657.

Vulnerability

The current use of the woods, including public access, is considered compatible with the barbastelle interest and should not affect the barbastelle population or their roosts.

Cambridge Water Cycle Strategy findings (August 2011)

This site did not meet the criteria to be included in the assessment.

3 Name: Devil's Dyke

Designation and Code

Special Area of Conservation (SAC) – UK0030037

Location

The site is located in East Cambridgeshire district and also extends into Forest Heath district in Suffolk.

Grid ref: **TL 611622** Area: **8.02 ha.**

Primary reason for selection of the site

Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). (important orchid sites)

Conservation Objective

To maintain in favourable condition unimproved calcareous grassland with particular reference to semi-natural dry grasslands and scrubland facies on calcareous substrates (CG3 and CG5 grassland) and *Himantoglossum hircinum* lizard orchid.

General site characteristics

Dry grassland. Steppes (100%)

Soil and geology – Basic, Limestone

Geomorphology and landscape – Lowland

Species

CG3 Bromus erectus

CG5 Bromus erectus – Brachypodium pinnatum calcareous grasslands

Himantoglossum hircinum – lizard orchid

Pulsatilla vulgaris - Pasque flower

Site Description

This section is the most species rich of the Devil's Dyke which as a whole stretches from the Fen Edge at Reach ending at Ditton Green. The section that is identified as a SAC is adjacent to Newmarket Heath. Devil's Dyke consists of a mosaic of CG3 *Bromus erectus* and CG5 *Bromus erectus – Brachypodium pinnatum* calcareous grasslands.

It is the only known UK semi-natural dry grassland site for lizard orchid *Himantoglossum hircinum.* Lizard orchid is nationally rare (i.e. occurring in 15 or fewer 10x10 km squares) and is vulnerable in Great Britain. It is restricted to calcareous grasslands and dunes in southern England.

Management and ownership

The dyke is in private ownership. There is a Devil's Dyke Restoration Project set up which is a partnership scheme involving Natural England, English Heritage, Cambridgshire Wildlife Trust and the Cambridgshire County Council working with landowners and managers and local people. The aim of the project is to restore the dyke and there is an agreed management plan. The species rich calcareous grassland requires active management

without which it rapidly becomes dominated by rank grasses which leads to the encroachment of scrub over time. Traditional management is by grazing.

The Pasque flower is a speciality of the dyke and a Local Species Action Plan has been produced for this plant.

Access

There is a public right of way running along the dyke. There is parking available at the July Race course, Newmarket.

Current condition (October 2011)

As grazing declined in the early part of the twentieth century scrub has encroached onto many areas of the dyke. In the SAC area there had been some scrub encroachment on the southern part of the site and some clearance work has been undertaken.

Surveys have been carried out by Natural England of the Dyke - the last being in July 2008. The report compiled in October 2011 indicated that 49.57% of the area is in a favourable condition; 23.43% is in an unfavourable recovering condition but that 27% of the area is unfavourable with no change.

In May 2002 the site was meeting 100% of its PSA targets and this reduced to 86% in 2008 and now in 2011 is 73%. This would appear to indicate that the condition of the area is not improving.

Vulnerability

Although clearance work has been undertaken there will need to be control over any regrowth of scrub and any weediness of this section. The area remains vulnerable as the reduction in meeting its PSA targets indicates over the last ten years.

Cambridge Water Cycle Strategy Phase 2 findings (August 2011)

This site did not mentioned in the assessment.

4 Name: Fenland

Designation and Code

Special Area of Conservation (SAC) – UK 0014782

There are three fens that together form the Fenland SAC

1. Wicken Fen
2. Chippenham Fen
3. Woodwalton Fen

Each site is also a Ramsar site.

Location

Wicken Fen and Chippenham Fen are in East Cambridgeshire District; Woodwalton Fen is in Huntingdonshire District.

Grid ref: Wicken Fen TL 555700; Chippenham Fen TL 648697;

Woodwalton Fen TL 230840

Area: 618.64 ha.

Primary reason for selection of site for SAC

Molinia meadows on calcareous peaty or clayey-silt-laden soils (*Molinion caeruleae)* – considered to be one of the best areas in UK.

Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* – considered to be rare as its total extent in the UK is estimated to be less than 1,000 ha; considered to be one of the best areas in UK.

Conservation objective

To maintain in favourable condition:

- *Molinia* meadows on chalk and clay (*Eu- Molinion* community)
- Calcareous fens with *Cladium mariscus* (great fen sedge) and species of the *Caricion davallianae* vegetation community.

To maintain in favourable condition the habitats for the population of spined loach and great crested newts.

General site characteristics

Bog. Marshes. Water fringed vegetation. Fens (70%)

Broadleaved deciduous woodland (20%)

Inland water body (standing water, running water) (5%)

Other arable land (5%)

Soil and geology – Basic, peat

Geomorphology – Floodplain, Lowland

Species

Molinion caeruleae

Cladium mariscus

Caricion davallianae

Cobitis taenia (Spined loach)

Triturus cristatus (Great crested newt)

Current conditions

The fenland grasslands are dependent upon traditional management practices of cutting and grazing by livestock. In recent decades scrub and woodland have spread at the expense of fen vegetation. Appropriate water management is vital to maintenance of the special feature. The three constituent sites are all National Nature Reserves and the site management plans include actions to address this problem.

4.2 DESCRIPTION OF EACH SITE THAT TOGETHER FORMS THE FENLAND SAC

4.3 WICKEN FEN

Location

This site is in East Cambridgeshire District.

Area: 254 ha.

Reason for Ramsar allocation

Criterion 1 – One of the most outstanding remnants of East Anglian peat fens. The area is one of the few, which has not been drained. Traditional management has created a mosaic of habitats from open water to sedge and litter fields.

Criterion 2 - The site supports one species of British Red Data Book plant fen violet *Viola persicifolia* which survives at only two other sites in Britain. It contains eight nationally scarce plants and 121 British Red Data invertebrates.

Site description

This site is a marginal remnant of the original peat fenland of the East Anglian basin. It has been preserved as a flood catchment area, and its water level is controlled by sluice gates.

The original peat fen lies to the north of Wicken Lodge. The site here supports fen communities of carr and sedge. The carr scrub is largely of alder buckthorn *Frangula alnus*, buckthorn *Rhamnus catharticus* and sallow over a sparse vegetation of fen plants and including marsh fen *Thelypteris palustris.* The more open areas of sedge fen are typically of tall grasses, saw sedge *Cladium mariscus*, purple moor grass *Molina caerulea*, sedges *Carex* spp and rushes *Juncus* spp.

Nationally important higher plants include *Viola persicifolia, Lathyrus palustris, Myriophyllum verticillatum, Oenanthe fluviatilis* and milk parsley *Peucedanum palustre.*

To the south of the Wicken Lode, the area is of rough pasture land, reedbed and pools which are attractive to breeding wetland birds and to wintering wildfowl, the area being subjected to winter flooding.

The dykes, abandoned claypits and other watercourses carry a great wealth of aquatic plants. Many, such as greater spearwort *Ranunculus flammula* and lesser water-plaintain *Baldellia ranunculoides* are now uncommon elsewhere.

Management and ownership

The site is owned by the National Trust and managed by a local management committee, which reports to the East Anglian Regional Office of the National Trust.

The continuation of the historic systems of management and the effective monitoring and maintenance of water levels underlies the Fen's ecology and are crucial for the success of all other management practices. The Fen is artificially protected from drying out by a water-retaining membrane.

Access

There is a visitor centre and shop, nature trails, three hides and 16km of walking routes. Entry is by permit only to help control visitor numbers. Visitors are also managed by 'zoning 'parts of the Fen near the entrance, leaving the more remote parts of the site relatively undisturbed. The Fen is open throughout the year from dawn to dusk.

Current conditions (October 2011)

In 2008 Natural England compiled a report about the condition of the SSSI and only 36% of the site was then meeting PSA targets with 53% of the area in unfavourable decline. More recently the condition of the fen was surveyed in 2009/10 and it was found that the site had improved from the previous survey results. The latest report by Natural England in October 2011 shows the site meeting 100% of PSA targets with no areas declining – 47.08% of the area in a favourable condition and 52.92% in unfavourable recovering.

The condition of the site would appear to have improved since 2008.

Vulnerability

Work carried out in the nearby river system to prevent flooding in the 1960s has meant that the site no longer receives the amount of winter water as it did in the past. This has brought about a lowering of the water table over the past 40 years (Ramsar Report 5.5.06).

The habitats within this site are highly sensitive to inorganic fertilisers and pesticides. Access to this site, and any recreational activities within, may need to be controlled.

Cambridge Water Cycle Strategy Phase 2 findings (August 2011)

This wetland site is located c.1km at its nearest point east of the Cam valley, downstream of Cambridge. The Cam receives treated sewage discharges from Cambridge wastewater treatment works (WwTW), just south of the A11 at Cambridge. That WwTW would receive additional effluent in the future from proposed developments at Cambridge, with potential consequences for downstream flows and water quality.

However, analysis of hydrology indicates that Wicken Fen is topographically higher than the Cam and drains via Wicken Lode then Burwell Lode towards it. As the Cam does not feed it, there are no associated risks, which could arise from additional sewage effluent discharge at Cambridge irrespective of any changes in effluent flow or quality from that site, so such scenarios have not been considered further in this assessment.

Wicken Fen Ramsar site can be screened out of any further assessment.

4.3.2 CHIPPENHAM FEN

Location

This site is in East Cambridgeshire District Council.

Area: 112 ha.

Reason for Ramsar allocation

Criterion 1 - A spring-fed calcareous basin mire with a long history of management which is partly reflected in the diversity of the present-day vegetation.

Criterion 2 – The invertebrate fauna is very rich partly due to its transitional position between Fenland and Breckland. The species list is very long, including many rare and scarce invertebrates characteristics of ancient fenland sites in GB.

Criterion 3 – The site supports diverse vegetation types, rare and scarce plants. The site is the stronghold of Cambridge milk parsley *Selinum carvifolia*

Site description

The site comprises areas of tall and often rich fen, fen grassland and basic flush that have developed over shallow peat soils. The site also contains calcareous grassland, neutral grassland, woodland, mixed scrub and open water.

The site is in a shallow peat-filled depression underlain by a thick layer of marl which rises to the surface in places. The fen is fed by rainfall and springs from the chalk aquifer. There are several ponds on the site and a system of dykes take water from the springs, in the south of the reserve, to the Chippenham River, near its northern boundary.

The areas of tall fen are dominated by a mosaic of saw sedge *Cladium mariscus* and reed *Phragmites australis* are present with abundant purple moor grass *Molinia caerulea*. A rich fen has developed in mown areas supporting the nationally rare *Selinum carvifolia*. In one area this merges into a species rich basic flush where black bog rush *Schoenus nigricans* becomes abundant. Dense and scattered scrub has developed. There are areas of chalk grassland that grade into the fen grassland. The damp neutral grassland meadows are developing a fen meadow flora. The ditches support a rich aquatic flora.

The water level is controlled within a series of ditches.

Because the fen contains such a wide range of habitats it supports a wide variety of breeding bird species, including hobby, short eared owl, nightingale and several species of warbler. It also forms the winter roosting for hen harriers.

Management and ownership

Both the site and surrounding areas are privately owned. Part of the site is under unspecified tenure. The site is mainly used for nature conservation

The site is actively managed by Natural England through regular cutting and grazing with cattle. Encroaching scrub is being removed to restore fen where appropriate. A water compensation scheme has been instituted to ameliorate the effects of water abstraction. The Environment Agency monitors groundwater changes in the aquifer.

Access

There are rights of way across the site. Access away from the paths is by permit only. The nearest car parking is in the villages of Fordham or Chippenham.

There is a low level of usage by local inhabitants using the rights of way through the middle of the site according to the Ramsar information sheet. Few people apply for permits for recreational purposes, they are mainly requested by naturalists.

Current conditions (October 2011)

100% of the area is now meeting the PSA target – 72.65% of the area is in a favourable condition and 27.35% in and unfavourable recovering condition.

Chippenham Fen NNR has suffered from a changed hydrological regime due to abstraction from the underlying chalk aquifer. This problem is being addressed through supply of supplementary water together with a programme of vegetation and invertebrate population monitoring. This project is being taken forward by Natural England, the Environment Agency and Anglian Water Services plc.

Vulnerability

There is considerable pressure in the region from the water abstraction that may affect the local springs and aquifer.

The Green Infrastructure Strategy for Cambridgeshire published in July 2011 identifies Chippenham Fen as a target area within the strategy and indicates that there are water management investigations being carried out by the Environment Agency to understand the best method of mitigating the reduction in water in the aquifer due to settlement growth in Red Lodge, Newmarket and other parts of the catchment.

The habitats within the site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided both within the site itself and in adjacent surrounding areas.

Cambridge Water Cycle Strategy findings (August 2011)

The Fenland SAC did not meet the criteria to be included in the assessment.

5 WOODWALTON FEN

Location

This fen is in Huntingdonshire District.

Area: 229.7 ha.

Reason for Ramsar allocation

Criterion 1 – The site is within an area of one of the remaining parts of East Anglia, which has not been drained.

Criterion 2 – The site supports two species of British Red Data Book plants - fen violet and fen wood rush.

Site description

This fen holds a range of wetland plant communities once characteristic of large areas of the East Anglian fens. The site was once a raised bog associated with the former Whittlesey Mere and was dug for peat in the late 19th century when most of the acidic peat was removed, exposing the underlying fen peat. The vegetation of the area today largely reflects this historical use of the site. The open fen and swamp communities represented are of several types. A relict of the acid peat holds stands of purple moor-grass *Molinia caerulea* with ling *Calluna vulgaris*, bog myrtle *Myrica gale,* tormentil *Potentilla erecta* and the saw sedge *Cladium mariscus.* A further swamp community is dominated by purple small-reed *Calamagrostis epigejos*. Mixed fen covers a significant part of the site. This vegetation community is floristically rich and contains species such as meadow rue *Thalictrum flavum*, yellow iris *Iris pseudacorus*, swamp meadow-grass *Poa palustris* and great water dock *Rumex hydrolapathum*. Rare fen plants such as the fen wood-rush *Luzula pallescens* and fen violet *Viola persicifolia* occur.

Of particular note is the network of ditches on the site and these hold many water plants which are now relatively uncommon in Britain including bladderwort *Urticularia vulgaris* and water violet *Hottonia palustris*. In addition, two meres have been dug in order to increase the area of standing water on the site and these have proved valuable for aquatic plant and animal communities. Further habitats of significance on the site include marshy grassland, birch and alder woodland and fen carr. The carr is varied in composition and contains willow *Salix* spp., blackthorn *Prunus spinosa*, birch *betula* spp and guelder rose *Viburnum opulus*.

The whole site is a patchwork of wetland communities, providing a habitat for many uncommon plant and insect species-a number of which are confined to East Anglia.

Management and ownership

The site was purchased by Hon Charles Rothschild in 1910 and donated to the Society for the Promotion of Nature Reserves (now the Royal Society for Nature Conservation) in 1919. Since the 1950s the pro-active management of the site has sought to reverse the drying out process and therefore conserve this crucial fenland habitat. The site is leased from the Wildlife Trust to Natural England.

The effective monitoring and maintenance of water levels underlies the Fen ecology and is crucial for the success of all other management practises. A Water Level Management Plan has been implemented and the site is flooded in winter in time of high water flows thus protecting low-lying farmland. However as a consequence nutrient levels in the water can be high due to agricultural runoff. Water inflows and outflows are strictly controlled. In the

1980s clay sealed banks were constructed around the perimeter of the reserve, this isolated water levels on the fen from that of the surrounding area.

The Great Fen project aims to link this nature reserve with Holme Fen.

Access

Parking is limited at this site – some being available alongside the Great Raveley Drain. There are three marked trails around the fen following the rides. There are no public rights of way across the reserve but visitors are allowed access to the site. There is restricted access to some areas of the site and no dogs are allowed onto any part of the site.

Current condition (October 2011)

The site is meeting 97.91% of its PSA target - 53.28% of the area is in favourable condition and 44.63% is unfavourable recovering. However 2.09% is unfavourable with no change. In 2008 the site was meeting 100% of the PSA targets so there is a slight decline in its condition.

Vulnerability

Woodwalton Fen takes water in the summer months from the surrounding drains. In the winter months the fen is designed to be used as a flood storage area, although this occurs infrequently. In both these circumstances the water entering the Fen is high in nutrients from agricultural run-off. It is intended to undertake research to investigate what effects the flooding may be having on the site's interests. The quality of the water from the agricultural run-off needs to be monitored.

Cambridge Water Cycle Strategy findings (August 2011)

The Fenland SAC did not meet the criteria to be included in the assessment.

6 Name: Ouse Washes

Designation and Code

Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar Site – UK0013011.

The boundaries of the Ramsar site as extended are coincident with those of the Ouse Washes SSSI.

Location

This site is located in East Cambridgeshire, Fenland and West Norfolk Districts.

Grid reference: TL 498895

Area: 2,403 ha. (Ramsar site and SSI site): 311.35 ha. (SAC site).

Primary reason for selection of this site as SAC

Spined loach *Cobitis taenia* – This site is only one of four known outstanding localities in the UK.

Conservation objective:

To maintain, in favourable condition, the habitats for the populations of *Annexe 1* species (Bewicks swan, whooper swan, hen harrier, spotted crake, and ruff) migratory species of European importance (widgeon, gadwall, pintail, shoveler, pochard and black-tailed Godwit) and wintering waterfowl assemblage of European importance, with particular reference to grassland / marshy grassland with ditches and open water.

Also to maintain in favourable condition the habitat for spined loach.

General site characteristics

Inland water bodies (standing water, running water) (50%)

Bogs Marshes. Water fringed vegetation. Fens (20%)

Improved grassland (30%)

Site Description

The Ouse Washes represent spined loach populations within the River Ouse catchment. The Counter Drain with its clear water and abundant macrophytes is particularly important and a healthy population of spined loach is known to occur.

The site is an area of seasonally flooded washlands habitat managed in a traditional agricultural manner. The washlands support nationally and internationally important numbers of wintering waterfowl and nationally important numbers of breeding waterfowl. The site is also of note for the large area of unimproved neutral grassland communities, which it holds, and for the richness of the aquatic flora within the associated watercourses.

Reasons for identification as a Ramsar Site

The Ouse Washes Ramsar site and its proposed extension is a wetland of major international importance comprising seasonally flooded washlands, which are agriculturally managed in a traditional manner. It provides breeding and winter habitats for important assemblages of wetland bird species, particularly wildfowl and waders.

Ramsar Criterion 1a - The site qualifies by being a particularly good representative example of a natural or near-natural wetland characteristic of its biogeographical region. It is one of the most extensive areas of seasonally flooding washland of its type in Britain, and the wetland has high conservation value for many plant and animal groups.

Ramsar Criterion 2a - The site qualifies by supporting a number of rare species of plants and animals. The site holds several nationally scarce plants, including the whorled water-milfoil *Myriophyllum verticillatum*, greater water parsnip *Sium latifolium*, river water-dropwort *Oenanthe fluviatilis*, fringed water-lily *Nymphoides peltata*, long stalked pondweed *Potamogeton praelongus*, hair-like pondweed *Potamogeton trichoides*, grass-wrack pondweed *Potamogeton compressus*, tasteless water-pepper *Polygonum mite*, small water-pepper *Polygonum minus* and marsh dock *Rumex palustris*. Invertebrate records indicate that the site holds a good relict fenland fauna for several groups, reflecting the diversity of wetland habitats. Two rare Red Data Book insects have been recorded, the large darter dragonfly *Libellula fulva* and the riffle beetle *Oulimnius major*.

Ramsar Criterion 2a - The Ouse Washes also qualifies by supporting a diverse assemblage of rare breeding waterfowl associated with seasonally flooding wet grassland. This includes breeding migratory waders of lowland wet grassland: oystercatcher *Haematopus ostralegus*, redshank *Tringa totanus*, snipe *Gallinago gallinago*, ruff *Phdomachus pugnax*. lapwing *Vanellus vanellus*, and black-tailed godwit *Limosa limosa*, and a diverse assemblage of breeding wildfowl with mute swan *Cygnus olor*, shelduck *Tadorna tadorna*, gadwall *Anas strepera*, teal *A. crecca*, mallard *A. platyritynchus*, pintail *A. acuta*, garganey *A*. *querquedu"* shoveler *A. clypeata*, pochard *Aythya ferina*, tufted duck *Aythya fuligulaa*, moorhen *Gallinula chloropus* and coot *Fulica atra* occurring regularly. Many of these species are rare and much restricted in Britain and the European Community owing to habitat loss and degradation. The site thus has an important role in maintaining the ranges of several of these species, which have been affected by changes in habitat elsewhere in Britain. Breeding gadwall, mallard, garganey *A. querquedula*, shoveler and bar-tailed godwit are all present in nationally important numbers.

Ramsar Criterion 5 - The Ouse Washes qualifies as a wetland of international importance by virtue of regularly supporting over 20,000 waterfowl, with an average peak count of 60,950 birds recorded in the five winter periods 1986/7 to 1990/91.

Ramsar Criterion 6 - The Ouse Washes also qualifies by supporting, in winter, internationally important populations of the following species (figures given are average peak counts for the five winter period 1986/87 - 1990/91): 4,980 Bewick's swan *Cygnus columbarius bewicki* (29% of the north-west European wintering population); 590 whooper swans *Cygnus Cygnus* (3% of the international population); 38,000 wigeon *Anas penelope* (5% of the north-west European population); 4,100 teal *A. crecca* (1% of NW European); 1,450 pintail *Anas acuta* (2% NW European); and 750 shoveler *Anas clypeata* (2% of NW European). Also notable are the following nationally important wintering populations: 270 cormorant *Phalacrocorax carbo* (2% of the British wintering population); 490 mute swan *Cygnus olor* (3% of British); 320 gadwall *Anas strepera* (5% of British); 2,100 pochard Aythya *ferina* (4% of British); 860 tufted duck *Aythya fuligula* (1 % of British); and 2,320 coot *Fulica atra*.

During severe winter weather elsewhere, the Ouse Washes can assume even greater national and international importance as wildfowl and waders from many other areas arrive, attracted by the relatively mild climate, compared with continental European areas, and the abundant food resources available.

The continued international importance of this site is dependant on the maintenance of a winter flooding regime and a high, but controlled summer water table.

Reasons for identification as a Special Protection Area

The Ouse Washes Ramsar site and the Special Protection Area is a wetland of major international importance comprising seasonally flooded wash lands, which are agriculturally managed in a traditional manner. It provides breeding and winter habitats for important assemblages of wetland bird species, particularly wildfowl and waders.

The boundaries of the Special Protection Area are coincident with those of the Ouse Washes SSSI, apart from the exclusion of a section of the Old Bedford River in the north of the SSSI.

The Ouse Washes qualifies under Article 4.1 of the EC Birds Directive by supporting, in summer, a nationally important breeding population of ruff *Philomachus pugnax*, an Annex 1 species. In recent years an average of 57 individuals have been recorded, a significant proportion of the British population.

The site also qualifies under Article 4.1 by regularly supporting internationally or nationally important wintering populations of three Annex 1 species. During the five year period 1986/87 to 1990/91, the following average peak counts were recorded: 4,980 Bewick's swan *Cygnus columbarius bewickii* (29% of the north-west European wintering population, 70% of the British wintering population), and 590 whooper swans *Cygnus Cygnus* (3% of the international population, 10% of British). In addition, between 1982-87 an average of 12 wintering hen harrier *Circus cyaneus* was recorded, representing 2% of the British wintering population.

The Ouse Washes qualifies under Article 4.2 by supporting, in summer, in recent years, nationally important breeding populations of five migratory species: 111 pairs of gadwall *Anas strepera* (20% of the British breeding population); 850 pairs of mallard *Anas platyrhynchus* (2% of British); 14 pairs of garganey *Anas querquedula* (20% of British), 155 pairs of shoveler *A. clypeata* (12% of British), and 26 pairs of black-tailed godwits *Limosa limosa* (44% of British).

The site further qualifies under Article 42 as a wetland of international importance by virtue of regularly supporting over 20,000 waterfowl, with an average peak count of 60,950 birds recorded in the five winter period 1986/1 to 1990/'91. This total included-internationally or nationally important wintering populations of the following migratory waterfowl (figures given are average peak counts for the five winter period 1986/87 - 1990/91): 270 cormorant *Phalacrocorax carbo (296* of the British wintering population); 490 mute swan *Cygnus olor* (3% of British); 38,000 wigeon *Anas penelope* (596 of the north-west European population, *1596* of British); 320 gadwall *Anas strepera* (5% of British); 4,100 teal *A. crecca* (1% *of* NW European, 4% of British); 1,450 pintail *Anas acuta* (2% NW European, 6% of British); 750 shoveler *Anas clvpeata* (2% of NW European, 8% of British); 2,100 pochard *Aythya ferina* (4% of British): 860 tufted duck *Aythya fuligula* (1% of British); and 2,320 coot *Fulica atra* (l % of British).

The site also qualifies under Article 4.2 by virtue of regularly supporting, in summer, a diverse assemblage of the breeding migratory waders of lowland wet grassland including: oystercatcher *Haematopus ostmlegus,* redshank *Tringa totanus*, snipe *Gallinago gallinago*, Ruff *Philomachus pugnax* lapwing *Vanellus vanellus,* and black-tailed godwit *Limosa limosa*; and a diverse assemblage of breeding wildfowl with mute swan *Cygnus olor*, shelduck *Tadorna tadorna*, gadwall *Anas strepera,* teal *A. crecca*, mallard *A. platvrhynchus,* pintail *A.*

acuta, garganey *A. querquedula,* shoveler *A. clypeata*, pochard *Aythya farina*, tufted duck *Aythya fuligula*, moorhen *Gallinula chloropus* and coot *Fulica atra* occurring regularly. Many of these species are rare and much restricted in Britain and the European Community owing to habitat loss and degradation. The site thus has an important role in maintaining the ranges of several of these species, which have been affected by changes in habitat elsewhere in Britain.

During severe winter weather elsewhere, the Ouse Washes can assume even greater national and international importance as wildfowl and waders from many other areas arrive, attracted by the relatively mild climate, compared with continental European areas, and the abundant food resources available.

The continued international importance of this site is dependant on the maintenance of a winter flooding regime and a high, but controlled summer water table.

Management and ownership

Given the extent of the Ouse Washes there are a number of management techniques that need to be carried out in the washes. Wetland grassland requires active management if it is to retain its conservation interest this has traditionally been done by grazing. Partial winter flooding is required to maintain suitable habitat conditions for wintering birds. A mosaic of winter flooded grassland and permanently un-flooded grassland is desirable. Ditches are artificial habitats created by land drainage – if left unmanaged silt accumulates in the bottom of the ditches leading to the loss the range of aquatic plants and animals colonising the ditches. There needs to be a rotation undertaken on ditch management. Also the level of water in the ditches and its quality needs to be regulated to maintain the optimum level for the plant and animal community. All the habitats are highly sensitive to inorganic fertilisers and pesticides.

Access

There is a network of public rights of way in the Washes. The RSPB manage a nature reserve at Welches Dam where there is a visitor centre and a number of bird hides. The WWT manage a nature reserve at Welney, Norfolk also with a centre and hides.

Current condition (November 2011)

Assessment work was carried out in 2003 and at this time many of the units that comprise the Washes were in an unfavourable state. Only 12.93% of the site meets the PSA target. The water quality regularly fails to meet total Phosphorus target of 0.1mg/l. Until this can be remedied the site will continue to remain unfavourable.

More recent survey work carried out in November 2009 on a number of different units that make up the Washes showed no improvements because there was inappropriate water levels within the unit areas. This survey work showed that there was a decline in the majority of the breeding bird features, some wintering bird features and the loss of extent and quality of neutral grassland feature.

In August and September 2011 further units were surveyed and found to be favourable.

The report compiled by Natural England in November 2011 on the condition of the SSSI found that only 19.13% of the site meets the PSA target which is a slight improvement from 2009. Of this 15.56% of the area is favourable and 3.57% is unfavourable recovering. 80.87% of the area is in an unfavourable condition with no change.

Vulnerability

Two independent and parallel rivers comprise the SAC. The Counter Drain / Old Bedford (known also as the outer river) drains adjacent farmland. The Old Bedford / Delph (known also as the inner river) is sourced by the River Great Ouse. During the winter and increasingly during the spring and summer months as well, the inner river takes flood-water from the Great Ouse, and therefore has an important flood defence function. Issues of concern relate to water quantity, water quality, salinity, turbidity and sediment.

The need to ensure there is sufficient water for the rivers is addressed through the Water Level Management Plan agreed by the Environment Agency and partner organisations. The outer river is also a source of water for nearby arable land forming spray irrigation, but this abstraction is unmetered for the most part. Abstraction of water from the Great Ouse system to Essex via the Ely-Ouse Transfer Scheme is monitored through the Denver License Variation. Other proposals for water abstraction, e.g. to Rutland Water by Anglia Water, have been the subject of assessment, but there are no current proposals.

It has been found that in the Environment Agency Review of Consents that there was very little difference between the different abstraction scenarios in terms of water resource availability to the Ouse Washes. The water table depth ranges are, therefore, relatively similar between the different scenarios i.e. there is little difference between the naturalised and current and maximum licensed scenarios. Therefore abstraction licences have no effect on the vegetation supporting the SPA features under the existing operating regime. Therefore the Agency concluded that water resources consents do not adversely affect the integrity of the European site, with respect to SPA features.

Water quality is a major issue of concern. Increases in two plant nutrients - nitrogen and particularly phosphorus (thought to be derived from sewage treatment works) - are leading to changes in the macrophyte communities, shown by a decline in species diversity and the loss of species together with an increase in species tolerant of eutrophic conditions. This is particularly apparent in the inner river. There is evidence that agricultural inputs are a minor component. In addition, blanket-weed (aquatic algae) poses problems to navigation and angling, leading to issues of timing and frequency of aquatic weed-cutting.

It is clear from the Environment Agency Review of Consents process that high phosphorus concentrations are currently the main issue for the Ouse Washes leading to eutrophication in the main watercourses and internal ditches and degradation of the wet grassland habitat. From all of the available evidence, phosphorus levels are above the desired target level, in some cases by a considerable amount. The main contribution to the phosphorus load comes from consented point source discharges of sewage effluent.

In addition, flood water draining off the adjacent Ouse Washes into the inner river can be of a very poor quality (particularly in warm weather) leading to problems of deoxygenation with resultant fish-kills. The frequency of increased spring and summer flooding on the Ouse Washes is being studied to ascertain ways of ameliorating its effects.

Saline intrusion through the northernmost tidal lock gate may be contributing to an increase in salinity levels of the outer river.

Conditions must be applied to planning permissions for gravel extraction from quarries near to the SAC, to ensure that drainage water from de-watering and washings does not affect the turbidity and sediment levels in the outer river.

Cambridge Water Cycle Strategy Phase 2 findings

Ouse Washes SAC, Ramsar site and SSSI lies between the New Bedford River and the Old Bedford River to the east of Earith. The site is seasonally-flooded washland, internationally important for birds. Recent reports identify that water levels across the Ouse Washes are increasingly too high in the Spring and Summer as a result of impeded seasonal drainage which itself is consequent upon siltation in the Hundred Foot Drain.

Potential concerns associated with the Cambridge WCS are related to the discharge of sewage via the Uttons Drove WwTW, which would serve the proposed development at Northstowe. This discharges to the Swavesey Drain, which in turn feeds into the River Great Ouse upstream of Ouse Washes. Significant additional flow could exacerbate the existing problem associated with high Spring / Summer water levels. Significant deterioration in sewage effluent quality could also have adverse effects on standing water quality at Ouse Washes. However, any such risks need to be considered in the context of the following:

The distance from Uttons Drove WwTW to Ouse Washes is greater than 10 km by river, providing for considerable dilution and dispersal of any contamination between this potential source and potential receptor.

The WwTW can make only a very minor contribution to total flow at Ouse Washes, since the total catchment draining to the River Great Ouse at Earith is approximately 3000 km^2. For comparison, the mean flow from the sewage works discharge is currently estimated at 4332m^3/day compared a mean flow in the Ouse in excess of 1,185,408 m^3/day (which is the flow at Offord, upstream of Earith).

The current consented dry weather flow (i.e. foul sewage excluding surface drainage) at the works is 3350 m^3/day. However, Anglian Water plc has submitted a proposal to Ofwat under PRO9 (i.e. spending proposals for the period 2010 to 2015) to increase the consent to 6992m^3/day. Whilst the existing consent would not be able to accommodate additional influent from proposed development at Northstowe, the proposed new consent would.

The proposed revised consent would have associated improvements in effluent quality, to ensure no deterioration in downstream water quality, specifically tightening of effluent quality to:

- Biochemical Oxygen Demand - 10 mg/l (evidence in the Phase 2 WCS indicates the consent might need to be set to 9 mg/l to ensure no deterioration);
- Ammonia - 5 mg/l;
- Phosphate - 2 mg/l.

Thus, any requirement for HRA associated with additional sewage discharge arising at Northstowe rests with Anglian Water Services as the body promoting the change in consented discharge and the Environment Agency as the competent authority considering that revised consent. Based on the revised consents being negotiated between Anglian Water and the Environment Agency this will ensure that there is no deterioration in the downstream watercourse due to growth.

Additional flow in the Swavesey Drain network could potentially result from an increase in the rate of surface runoff into watercourses as development is established at the Northstowe greenfield site. However, as this is being promoted as an Eco-Town it will have a high level of surface water attenuation which, with proposed on-site flood storage for events up to

those with a 1 in 200 chance of occurring in any year, would result in run-off rates lower than existing greenfield.

Thus, **Ouse Washes SAC and Ramsar site can be screened out of any further assessment**, but it is noted that implementation of the Northstowe development as planned is subject to approval of the proposed consent revision at Uttons Drove sewage treatment works. And hence further HRA may be required dependent upon the outcome of consenting process / details and appropriate implementation and management of SUDS.

7 Name: Portholme

Designation and Code

Special Area of Conservation (SAC) – UK0030054.

Location

This site is within Huntingdonshire District.

Grid reference: TL 237708 Area: 91.93 ha.

Primary reason for selection of this site

Lowland hay meadows MG4*Alopecurus pratensis Sanguisorba officinalis* – considered to be one of the best areas in UK.

Conservation objectives

To maintain in favourable condition the lowland hay meadow.

General site characteristics

Humid grassland (100%)

Soil and geology – Alluvial, Neutral

Geomorphology and landscape – Floodplain, Lowland

Species

Alopecurus pratensis

Sanguisorba officinalis

Fritillaria meleagris

Libellula fulva.

Site Description

It is the largest surviving traditionally managed meadow in the UK with an area of 104 ha. of alluvial flood meadow (7% of the total UK resource). It is almost completely surrounded by water. There has been a long history of favourable management on traditional lines as a 'lammas' meadow and very little of the site has suffered from agricultural improvement, and so it demonstrates good conservation of structure and function. It supports a small population of fritillary (*Fritillaria meleagris)*. Watercourses on the periphery of the site have populations of some uncommon invertebrates including one dragonfly, which is of a nationally restricted distribution.

The grassland communities are characterised by the presence of such grasses as Yorkshire fog *Holcus lanatus,* yellow oat-grass *Trisetum flavescens*, meadow foxtail *Alopecurus pratensis*,and meadow fescue *Festuca pratensis.* The range of herbs present, typical of such meadows, includes lady's bedstraw *Galium verum*, pepper-saxifrage *Silaum silaus* and great burnet *Sanguisorba officinalis*. A number of locally rare and one nationally rare plant are also present.

Channels of the River Ouse surround the meadow, and the Alconbury Brook is close by. These water bodies are important for dragonflies *(Odonata*) in particular the restricted dragonfly *Libellula fulva.*

Large flocks of waders use this site in winter.

Management and ownership

The London Anglers Association owns the site and is advised on the management of the site by Natural England.

Neutral grassland requires active management if it is to retain its conservation interest. In order to maintain a species rich sward, each year's growth of vegetation must be removed; otherwise the sward becomes progressively dominated by tall and vigorous grasses. These, together with an associated build up of dead plant matter, suppress less vigorous species and reduce the botanical diversity of the site.

The traditional management of this site, which still continues, is by cutting for hay followed by grazing of the aftermath in later summer until the autumn. In winter and early spring Portholme is inundated by floodwaters. This provides natural fertilising of the soil and it is this seasonal flooding coupled with the traditional management that maintains the diversity of the natural plant communities.

The Environment Agency carried out drainage improvements on Portholme Meadow, Huntingdon, in September 2010 to help re-establish rare types of grassland that had been found to be not in good condition. This unfavourable condition was due to the amount of curled dock present. Curled dock is an invasive weed which degrades the quality of the natural grassland. Floodwater ponding had caused deterioration in the vegetation community and these inappropriate water levels had resulted in the changes to the meadows. The plan by the Environment Agency has allowed the floodwater to drain off more quickly from the affected area and reduce the curled dock populations, allowing the desired grassland communities to reestablish. The works also improved the site's ability to adapt to climate change.

In the past MAFF had sponsored dipwell monitoring of the meadows. Water table levels are vital to the management of this site. Anglian Water Services (AWS) is required to produce a statutory water company drought plan under the requirements of the new s39B of the Water Industry Act 1991 as introduced by the Water Act 2003. For each site, potential changes arising from the drought actions have been identified and the existence and adequacy of current monitoring programmes has been provisionally assessed. For the most part, existing monitoring are adequate for monitoring the effects of the drought actions. In relation to Portholme it recommends in the 2006 Drought Plan the following:

'One site (Portholme Meadow) has been monitored in the past and this work is probably sufficient to determine a baseline. However, no monitoring is currently being undertaken. Previous modelling studies suggest that reductions in river water levels are likely to be very small and are therefore unlikely to have any effect on riparian water table levels in adjacent meadows or water levels in adjacent gravel pits.'

Access

There are three main entrances to the meadow and visitors can walk around the site on the extensive footpaths, which lead off the main entrances. The footpaths form a triangle across the meadow and each footpath is approximately 1.6km in length.

Current condition (November 2011)

The units of the site were assessed in June 2005 and 2006 and it was found to have inappropriate cutting / mowing regimes and inappropriate weed control. The site was not meeting the PSA target at all. 90.92% of the area was seen to be in unfavourable but remaining unchanged i.e. not in decline. By November 2010 there was an improvement

since the site was recorded as meeting 100% of the PSA target in an unfavourable recovering condition.

The latest report compiled by Natural England in November 2011 indicates that the site is meeting 100% of its PSA targets and that it is favourably recovering. The last survey of the site was carried out in June 2011. It would appear that the drainage improvement works carried out by the Environment Agency has had a positive impact.

Vulnerability

Without a controlled management plan the site will not retain its conservation interest. The improvement in drainage carried out by the Environment Agency shows how the correct management can greatly improve an area's biodiversity.

Cambridge Water Cycle Strategy Phase 2 findings (August 2011)

This site did not meet the criteria to be included in the assessment.

8 Name: Breckland

Designation and Code

Special Area of Conservation (SAC) – UK0019865

Special Protection Area (SPA) – UK9009201

Although covering much of the same land the boundary of the SAC is not contiguous with that of the SAP.

Location

This site is within Forest Heath in Suffolk and Kings Lynn and West Norfolk District in Norfolk.

Grid reference: TL862948 Area: SPA – 39433.65; SAC – 7548.06

Primary reason for selection of this site for SAC

- Inland dunes with open *Corynephorus* and *Agrostis* grasslands.
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type
- vegetation
- European dry heaths
- Semi-natural dry grasslands and scrubland species on calcareous substrates (*Festuco-Brometalia*).

Other qualifying features:

Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion

incanae, Salicion albae)

The area is considered to support a significant presence.

Triturus cristatus *(great crested newt*)

The area is considered to support a significant presence.

General site characteristics

Inland water bodies (0.5%)

Bogs. Marshes. Water fringed vegetation. Fens (1%)

Dry grassland (59.4%)

Heath. Scrub. Maquis and garrigue. Phygrana (20%)

Improved grassland (0.2%)

Other arable land (0.1%)

Broad-leaved deciduous woodland (9%)

Coniferous woodland (4%)

Inland rocks. Screes. Sands. Permanent snow and ice (0.5%)

Other land (0.3%)

Site Description

Wangford Warren and adjoining parts of RAF Lakenheath are included in the

Breckland site as the only occurrence of this habitat type in the UK. The site has one of the best-preserved systems of active inland sand dunes in the UK. The habitat type, which is in part characterised by the nationally rare grey hair -grass

Corynephorus canescens occurring here at its only inland station, is associated with open conditions with active sand movement. The site shows the colonization sequence from open sand to acidic grass-heath.

The Breckland meres in Norfolk represent natural eutrophic lakes in the east of

England. They are examples of hollows within glacial outwash deposits and are fed by water from the underlying chalk aquifer. Natural fluctuations in groundwater tables mean that these lakes occasionally dry out. The flora is dominated by stonewort – pondweed *Characeae – Potamogetonaceae* associations.

The dry heaths of Breckland are representative of European dry heaths in East

Anglia, in eastern England, developed under a semi-continental climate. Breckland has an average annual precipitation of only 600mm, relatively hot summers and cool winters. Frosts can occur in any month of the year. The dry acidic heath of Breckland represents H1 *Calluna vulgaris – Festuca ovina* heath in the SAC series. The sand sedge dominated *Carex arenaria* sub-community (H1d) is typical of areas of blown sand – a very unusual feature of this location.

The highly variable soils of Breckland, with underlying chalk being largely covered with wind-blown sands, have resulted in mosaics of heather -dominated heathland, acidic grassland and calcareous grassland that are unlike those of any other site. In many places there is a linear or patterned distribution of heath and grassland, arising from fossilised soil patterns that formed under peri-glacial conditions. Breckland is important for rare plants, such as perennial knawel *Scleranthus perennis* ssp. *prostrates,* and rare invertebrates.

Breckland in East Anglia is the most extensive surviving area of the rare grassland type CG7 *Festuca ovina – Hieracium pilosella – Thymus praecox* grassland. The grassland is rich in rare species typical of dry, winter-cold, continental areas, and approaches the features of grassland types in central Europe more than almost any other semi-dry grassland found in the UK. The terrain is relatively flat, with few physical variations, but there are mosaics of calcareous grassland and heath/acid grassland, giving rise to patterns of structural variation.

Current Condition:

In recent decades, scrub and woodland have spread at the expense of the heathland and chalk grassland vegetation due to the cessation of traditional cutting and grazing management. Management agreements and particularly Environmentally Sensitive

Area payments go part of the way towards re-introducing this largely uneconomical traditional management, and controlling the scrub. Strong populations of rabbits are important in maintaining the Breckland swards.

Vulnerability:

Grazing by sheep/cattle is essential to the maintenance of habitats. Problems include nutrient deposition from the atmosphere and adjacent arable land, invasion by self sown

trees/shrubs, and uncontrolled and inappropriate recreational activities. Local ground water abstraction has a deleterious impact on the natural eutrophic lakes, the

Breckland meres, and is the subject of active liaison between English Nature and the

Environment Agency.

Reasons for identification as a Special Protection Area:

During the breeding season the area regularly supports:

- *Burhinus oedicnemus* (Western Europe - breeding)- 60.1% of the GB breeding population of stone curlews

- *Caprimulgus europaeus* - 12.2% of the GB breeding population of nightjars.

Lullula arborea - 28.7% of the GB breeding population of woodlarks.

General Site Characteristics:

Heath. Scrub. Maquis and garrigue. Phygrana (0.9%)

Dry Grassland. Steppes (19.7)

Humid grassland. Mesophile Grassland (1.3%)

Improved grassland (0.3%)

Other arable land (31.5%)

Broad-leaved deciduous woodland (1.4%)

Coniferous woodland (44.7%)

Vulnerability:

Stone-Curlews are largely reliant on arable land for nesting and are thus vulnerable to disturbance and nest destruction from agricultural operations. Stone curlews require very short vegetation, with abundant patches of bare and stony ground. The bare stony ground provides excellent camouflage for adults, chicks and eggs, whilst the short vegetation allows good visibility for predator avoidance.

The best way to achieve suitable conditions for stone curlews in arable land is to plant spring-sown crops that develop slowly. Autumn sown crops are usually too dense and tall by the spring nesting season. It can be useful to provide a rotation system of a range of spring sown crops that includes summer fallows, thus supplying both nest sites and invertebrate rich areas for foraging. Ideal ploughing times are just before the birds arrive (usually early March) and just before egg laying commences (usually early May). Alternatively, crops that grow too tall for nesting stone-curlew can be treated with herbicide to restore bare ground.

Management agreements are in place to provide nest plots and thus safeguard the population.

Stone-Curlew, Nightjar and Woodlark are vulnerable to predation from corvids[4] and foxes and to disturbance caused by human activity, including dog walking. There should be the absolute minimum of disturbance to breeding stone-curlew, particularly by people on foot within sight of, and up to 500m from nests. In 2005, new public access was introduced on

[4] Corvids; Crows, jays, magpies, ravens, jackdaws and rooks all belong to the Family of birds called Corvidea.

heaths by legislation. Safeguards to protect stone-curlew have been included but the situation will require monitoring to determine how successful restrictions have been in preventing additional disturbance.

Breckland heathlands and acid grasslands supporting stone-curlew, nightjar and woodlark are fragile in terms of the high background levels of air pollution in the area, particularly high nitrogen loads causing undesirable habitat changes. Research on this topic is ongoing, and measures to export the nutrients off heaths (such as night time sheep folding or topsoil stripping) to counter the effects of pollution are potential management options. There are development pressures on the area, particularly for infrastructure, which requires substantial discussion and mitigation in some cases.

This is achieved through Natural England commenting on planning applications and providing input to structural and local plans.

Woodlark and nightjar benefit from clear-fell forestry rotational management. Surveys for both woodlark and nightjar were carried out in 2010. The woodlark survey recorded 209 breeding pairs; a figure below 253 would indicate unfavourable condition. The nightjar survey recorded 240 churring males; a figure below 311 would indicate unfavourable condition. The appropriate management is currently taking place in the forests carried out by the Forestry Commission (FC). The FC's Design Plan for the Breckland Forest area indicates that there has not been a change in the extent of the habitat and therefore a programme of research and experimental management is underway to determine the cause of the population changes with a commitment from FC to adopt management practices to meet population target.

Collecting of eggs of stone-curlew, and to some extent night jar and woodlark, is believed to be a serious threat to individual birds and to population size. The loss of eggs to this illegal activity is unknown. There is a police-based alert system in place in Breckland to try and reduce this type of crime, and landowners are vigilant.

Current condition of Breckland farmland

The report compiled by Natural England in November 2011 showed that 100% of the PSA target is being met for the numerous units that make up the Breckland Farmland SSSI – all are in a favourable condition.

The condition of the units making up the Breckland Forest SSSI area also is meeting100% of the PSA target although the condition is described as unfavourable recovering due to the reduction in the number of stone curlews and nightjars found in the 2010 survey.

Cambridge Water Cycle Strategy Phase 2 assessment findings (August 2011)

Breckland SPA is designated for stone curlew, nightjar and woodlark, none of which are associated with water or wetland habitats. Breckland SAC is mostly associated with dry grassland (59%) and heath (20%), plus various woodland types (19%). Water and wetland habitats are relatively limited, totalling only 1.5% of the area and comprising a mix of rivers, standing waters, fens, bog and marsh.

The HRA consideration under the Cambridge WCS relates to the potential to secure additional public water supply from existing major groundwater boreholes to the east of Thetford, and the effects that this could have on groundwater levels and on associated hydrological connections with habitats within the SPA or SAC.

The existing boreholes are located near Euston in The Black Bourn valley and at Brettenham in the River Thet valley. Neither borehole site is directly associated with any Breckland SPA compartment. However, there are SPA compartments[5] associated with the Little Ouse River valley downstream of Euston and the River Thet valley downstream of Brettenham. Additionally, the Environment Agency's characterisation of river basins under the Water Framework Directive has identified that Breckland has a number of groundwater-dependent terrestrial ecosystems (GWDTE), i.e. wetland systems that are supplied by groundwater as opposed to river water or direct rainfall and overland flow. Drawdown of groundwater levels as a result of additional abstraction could result in damage to associated GWDTEs.

Since the groundwater aquifer has been identified as vulnerable to over-abstraction, no new consumptive abstractions will be licensed by the Environment Agency.

Cambridge Water Company's strategy to provide additional public water supply to developments at Cambridge would include abstracting the full licensed amount from the boreholes in the Thetford area with no additional abstraction over and above this. Additionally, the bulk transfer infrastructure owned and operated by Cambridge Water Company to transfer water from Thetford to Cambridge would not require modification.

Between 2000 and 2010 the Environment Agency reviewed all permissions that were granted before the Habitats Regulations came into force (the 'review of consents'). Thus the abstraction licences currently in force at Euston and Brettenham have been considered to have acceptable levels of risk of groundwater drawdown within the Breckland European sites. Since this licensed abstraction will not change with the proposed developments at Cambridge, there is no risk that these would have an adverse impact on any Breckland SPA or SAC conservation objectives.

Thus, Breckland SPA and SAC can be screened out of any further assessment.

[5] Protected sites are often identified in compartments or units which together form a whole area.

9 Maps of European Sites

Map 1 European Sites Location Map

Map 2 Eversden and Wimpole Woods

Map 3 Devil's Dyke

Map 4 Fenland - Wicken Fen

Map 5 Fenland - Chippenham Fen

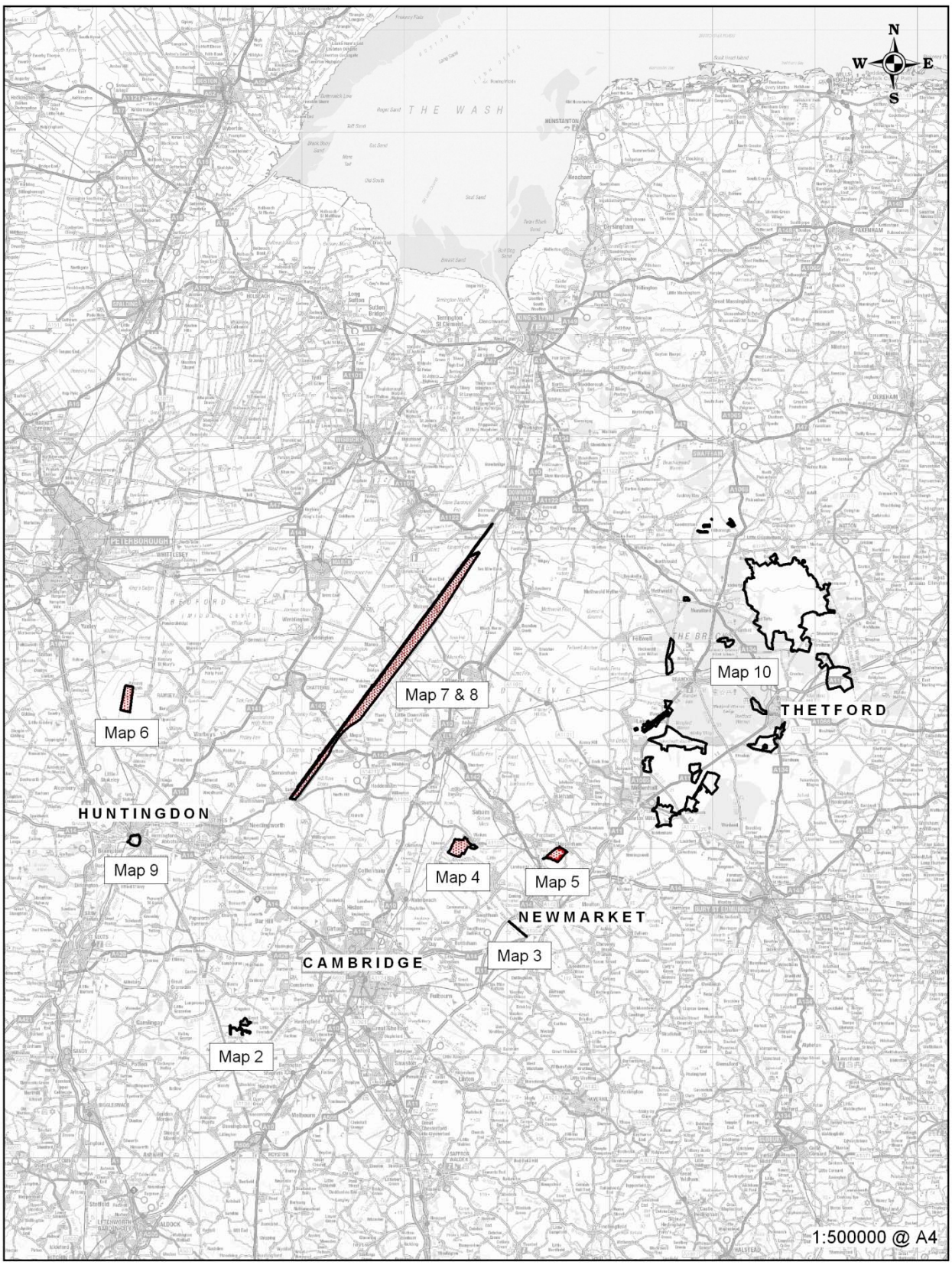
Map 6 Fenland - Woodwalton Fen

Map 7 Ouse Washes - North

Map 8 Ouse Washes – South

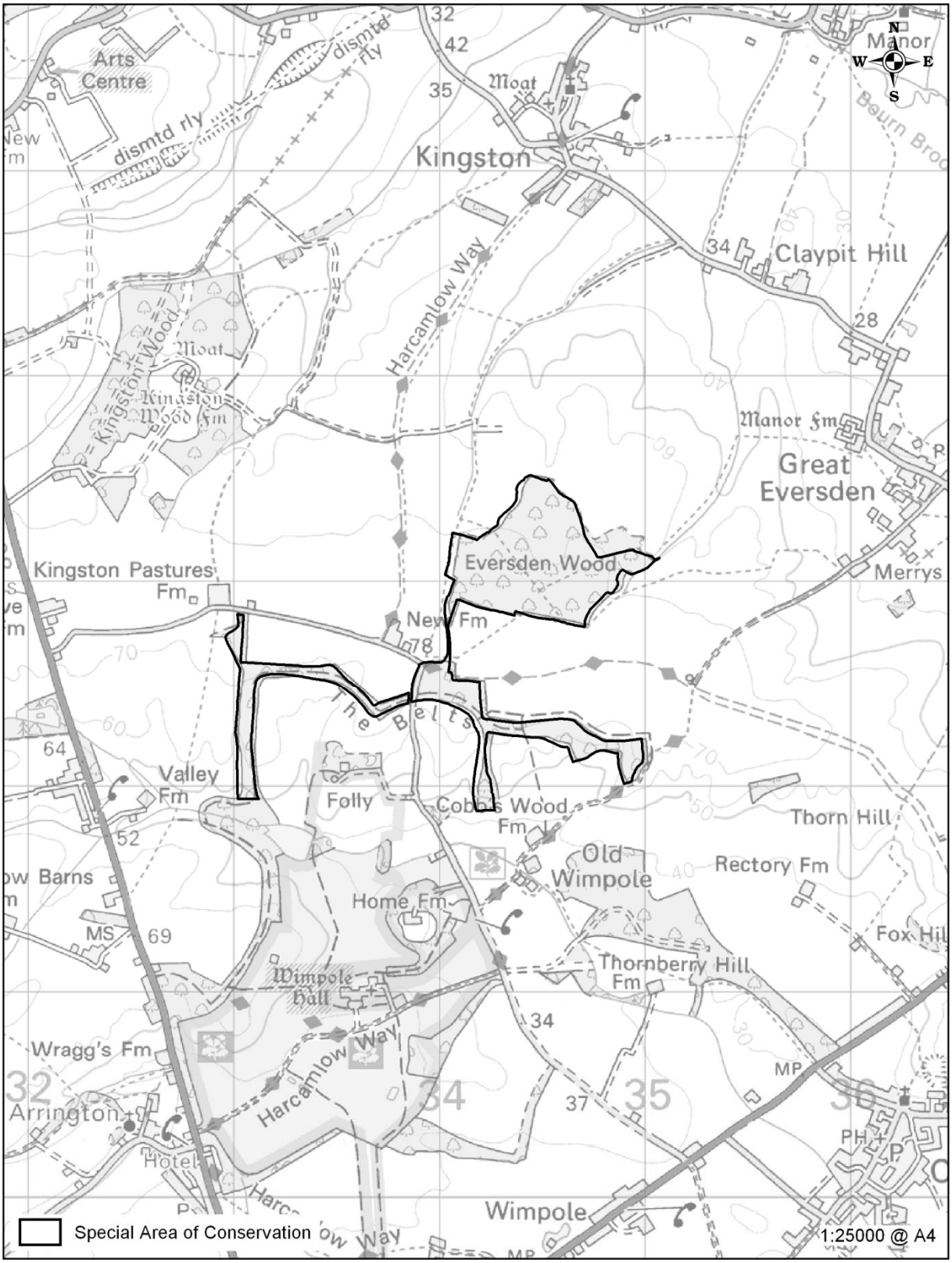
Map 9 Portholme

Map 10 Breckland



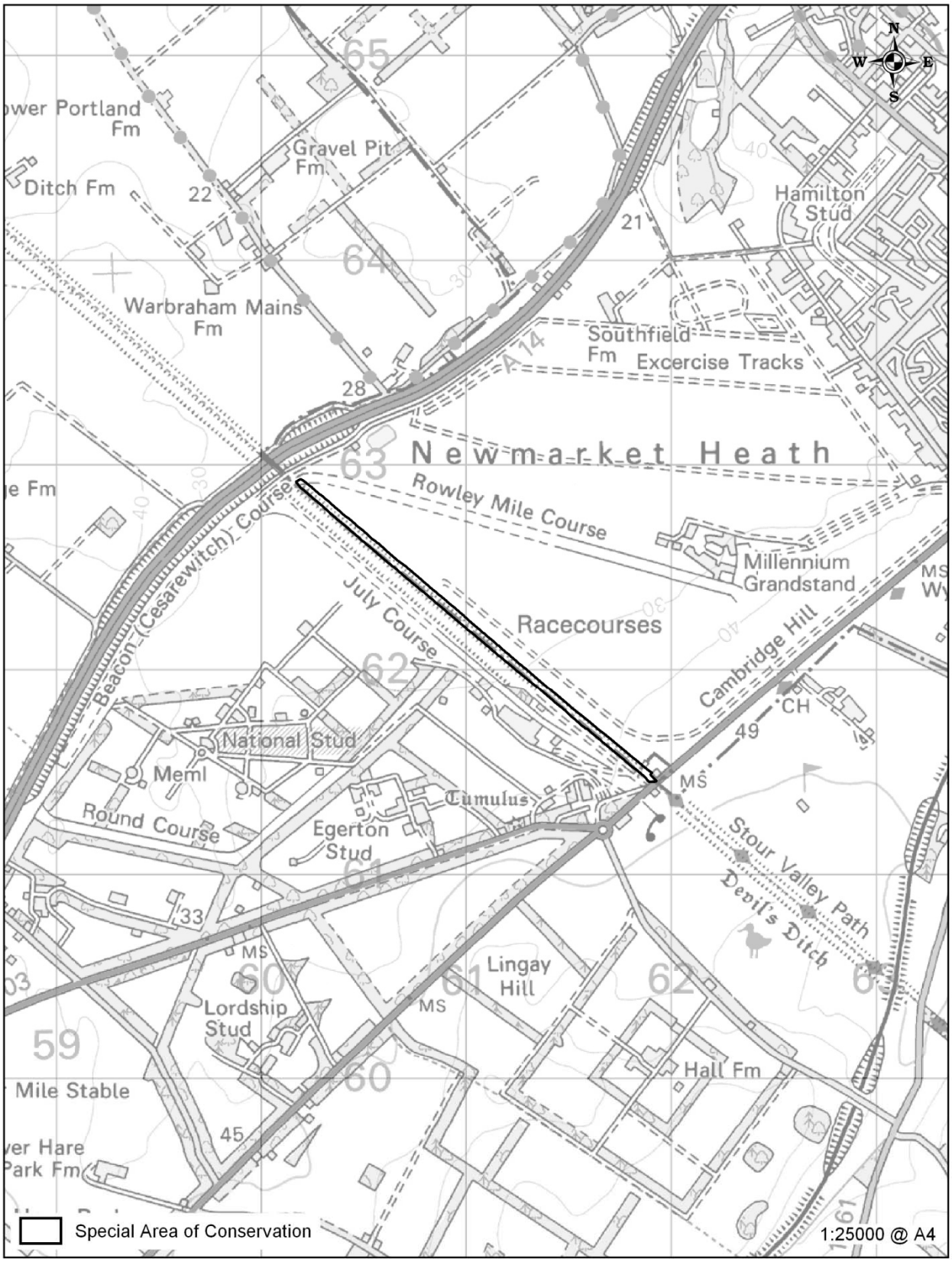
South Cambridgeshire District Council

Map 1
Eurpoean Sites Location Map



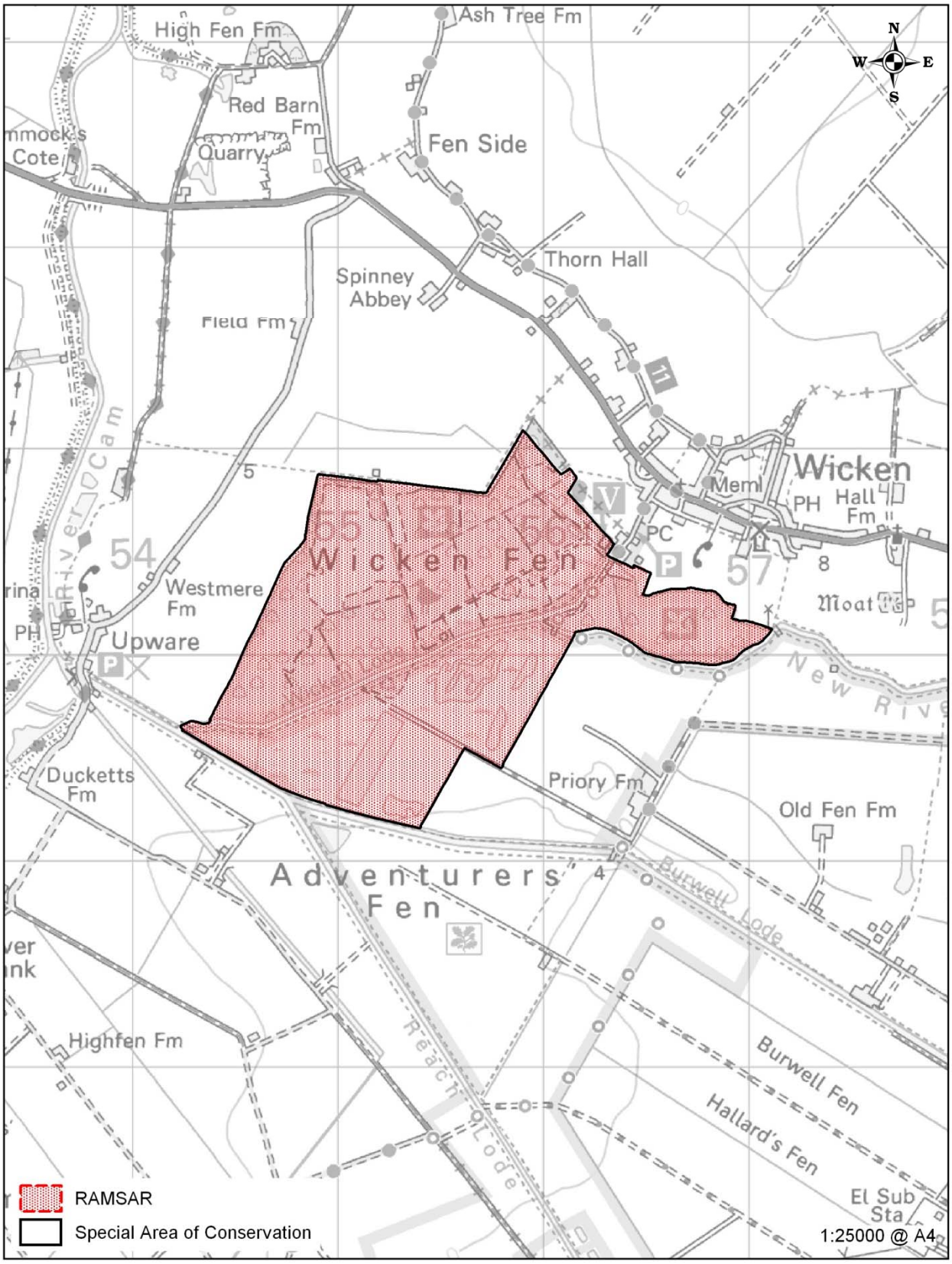
South Cambridgeshire District Council

Map 2
Eversden and Wimpole Woods (SAC)



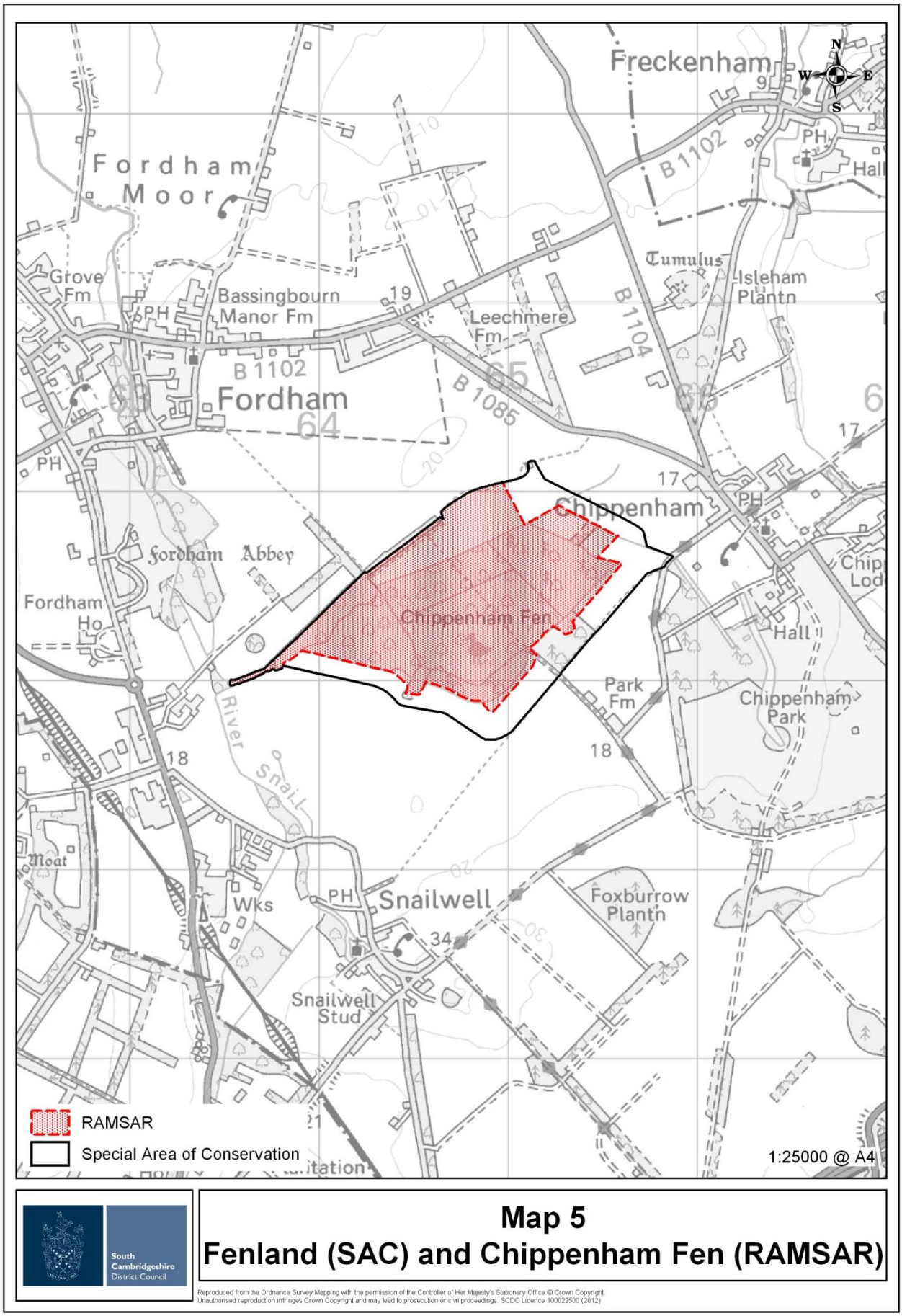
South Cambridgeshire District Council

Map 3
Devil's Dyke (SAC)



South Cambridgeshire District Council

Map 4
Fenland (SAC) and Wicken Fen (RAMSAR)



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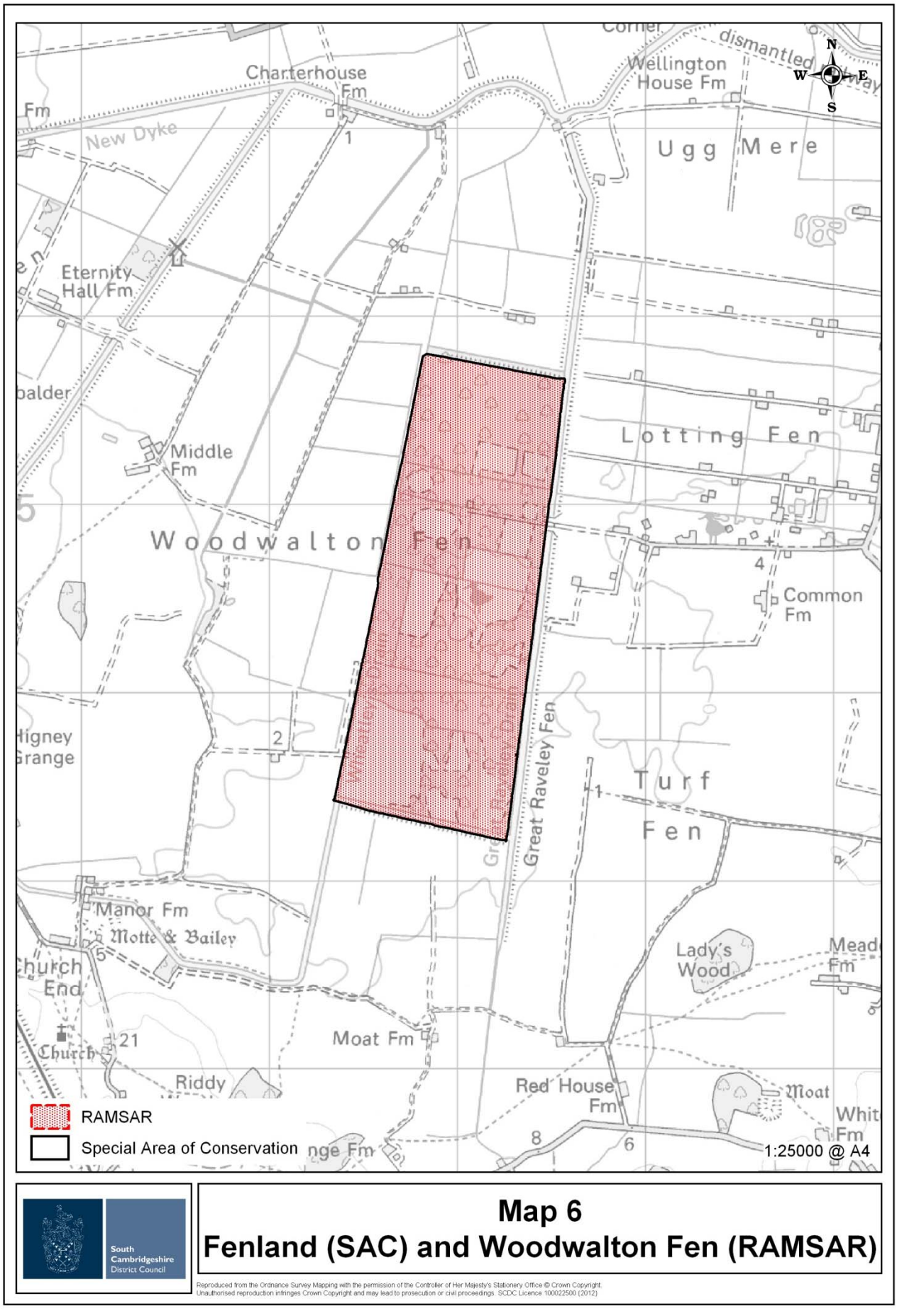
Map 5
Fenland (SAC) and Chippenham Fen (RAMSAR)



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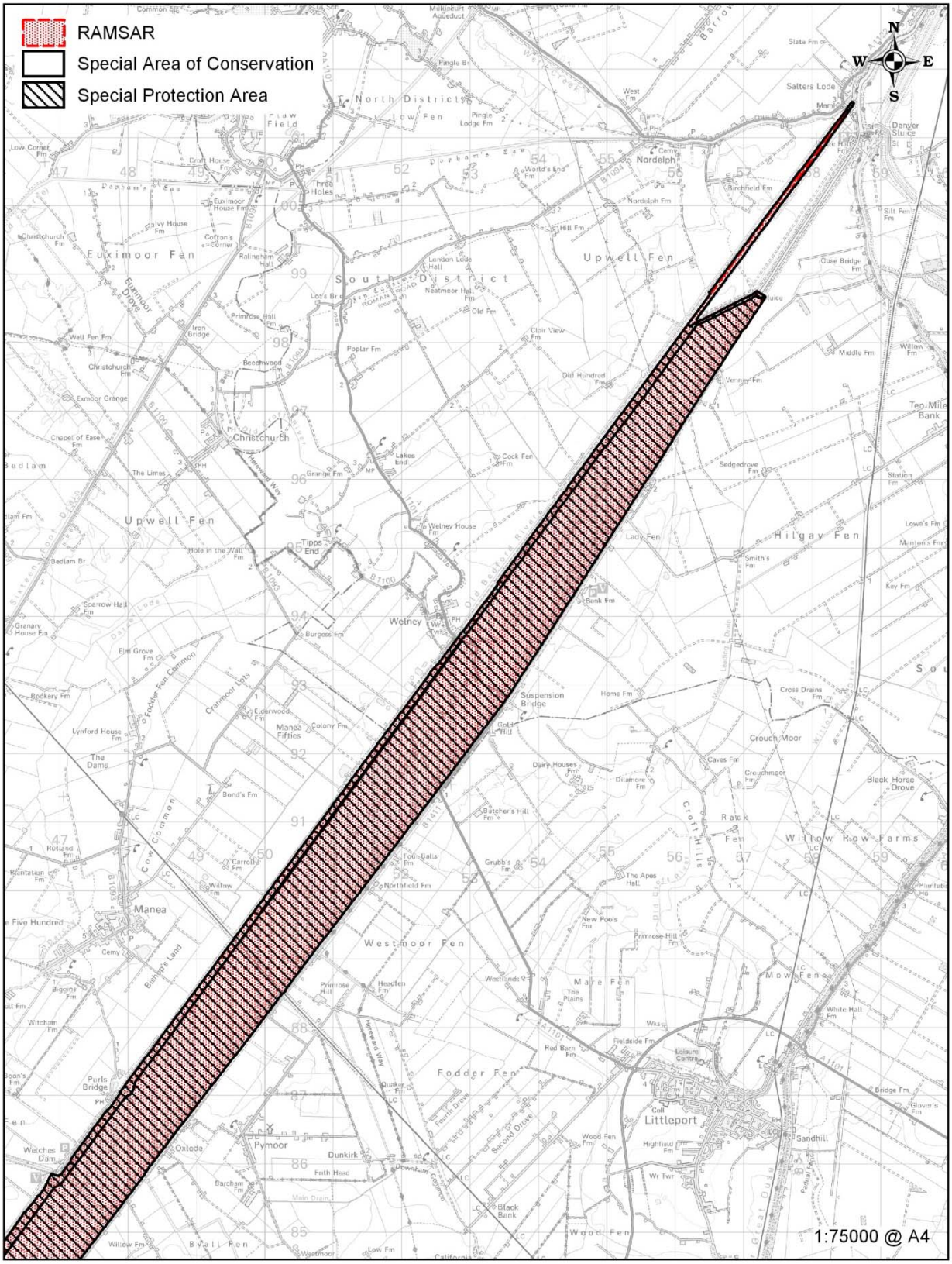
Map 6
Fenland (SAC) and Woodwalton Fen (RAMSAR)



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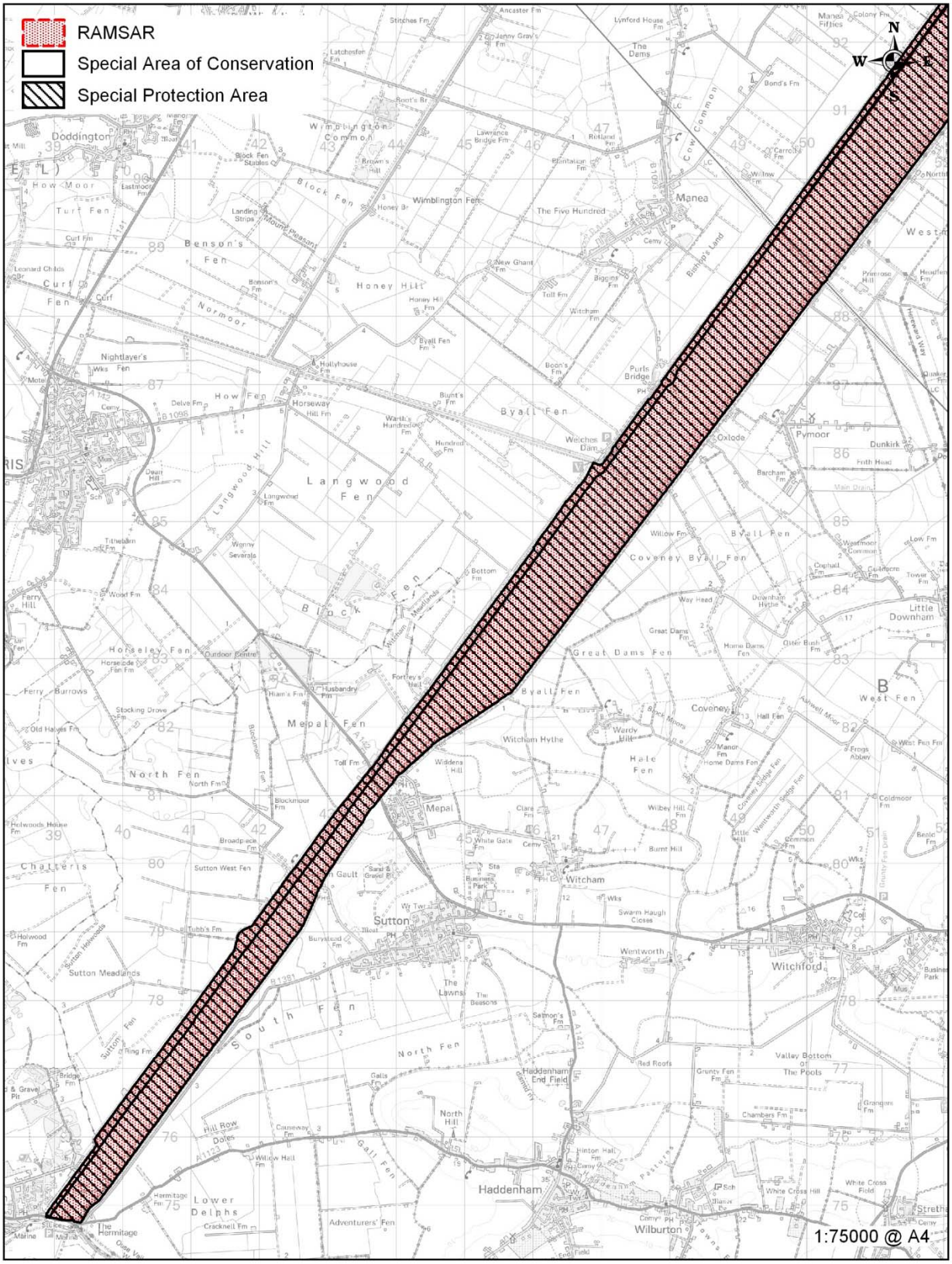
Map 7
Ouse Washes - North (RAMSAR, SAC & SPA)



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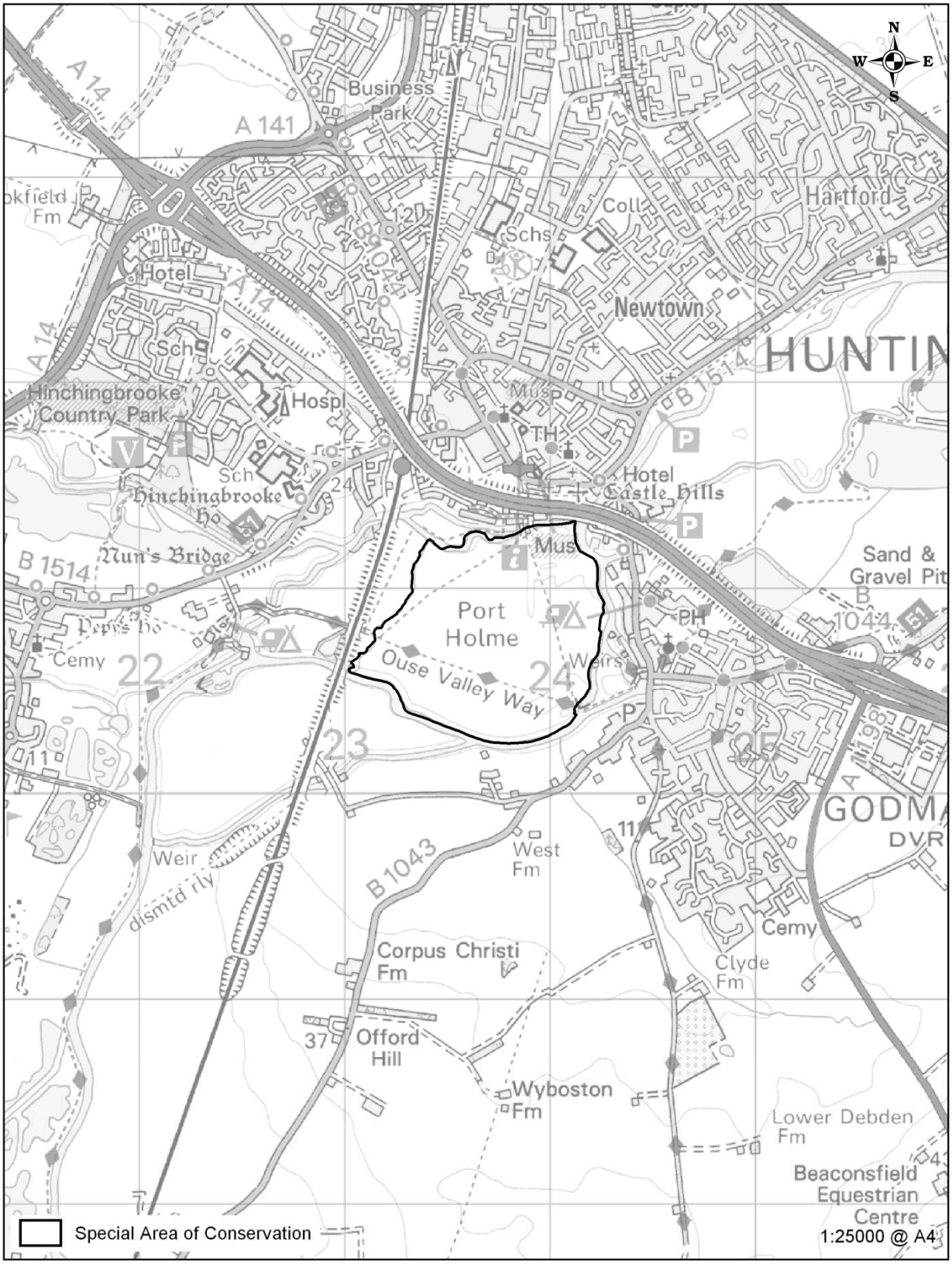
Map 8
Ouse Washes - South (RAMSAR, SAC & SPA)



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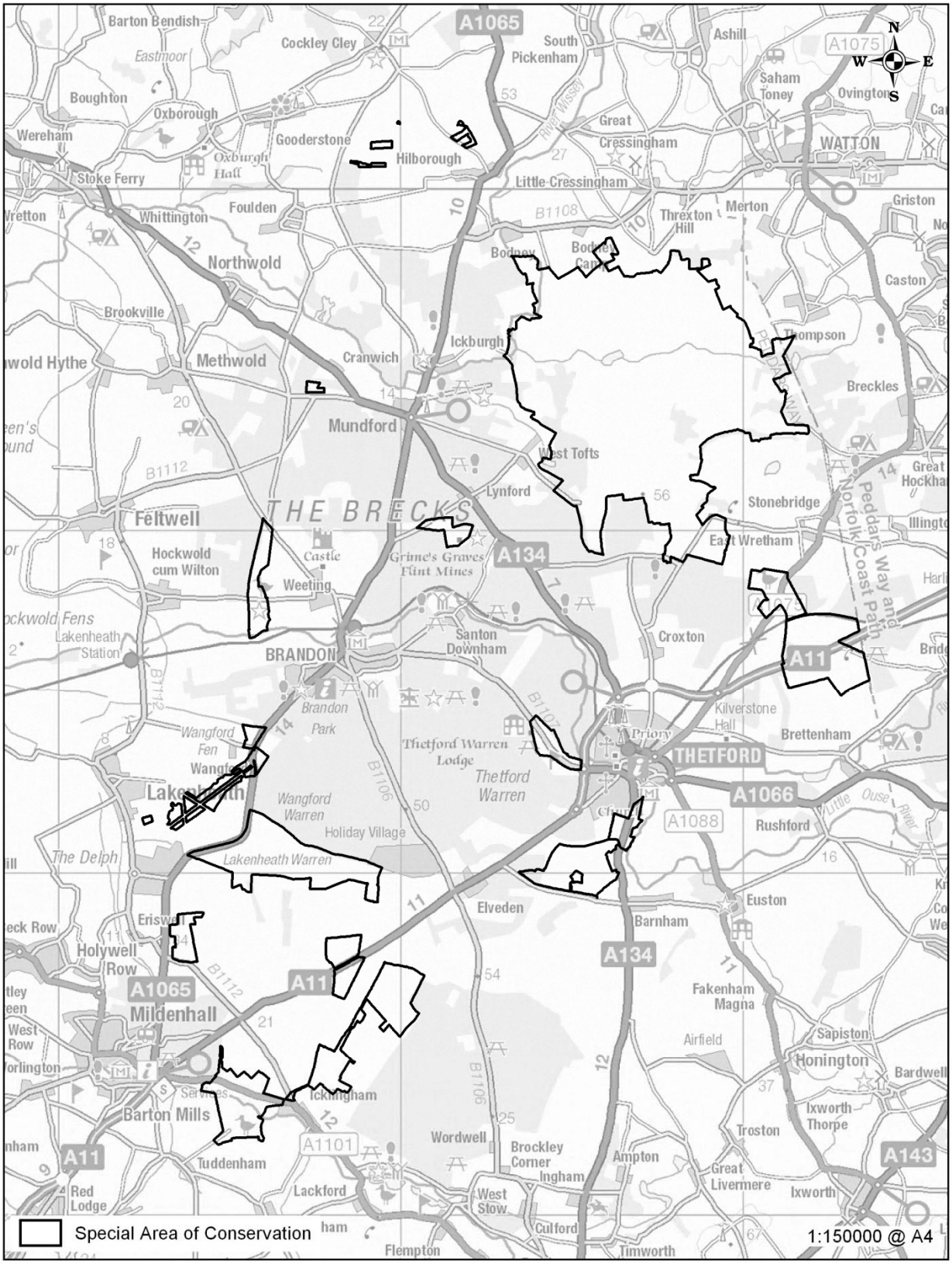
Map 9
Portholme (SAC)



South Cambridgeshire District Council

Map 10
Breckland (SAC)

Relevant plans and policy documents (December 2011)

OTHER RELEVANT PLANS AND STRATEGIES	SUMMARY
County-wide Plans affecting South Cambridgeshire:	
Cambridgeshire Waste Local Plan 2003	Aims to provide a sustainable strategy and policy framework for waste management in Cambridgeshire and Peterborough. Includes site-specific proposals for waste management facilities. Strategy and policy superseded by adoption of Core Strategy(2011) Will be superseded by Site Specific Proposals Plan proposed to be adopted in February 2012
Cambridgeshire Aggregates (minerals) Local Plan 1991	Sets policies for working minerals and safeguarding mineral deposits. Strategy and policy superseded by adoption of Core Strategy(2011) Will be superseded by Site Specific Proposals Plan proposed to be adopted in February 2012
Cambridgeshire and Peterborough Minerals and Waste Core Strategy DPD – Adopted 2011	Core Strategy DPD to guide the spatial strategy vision for the future of mineral extraction and the delivery of high quality sustainable waste management facilities. The document has been subject to HRA and found there were likely to be no significant effects that could not be overcome by mitigation measures through policies in the plan.
Cambridgeshire and Peterborough Minerals and Waste Site Specific Proposals Plan DPD – Proposed to be adopted in February 2012	Site Specific Proposals Plan DPD with proposed allocations for waste management facilities and minerals workings. The document has been subject to HRA and some sites were subject to full appropriate assessments. The conclusions are that it was found there were likely to be no significant effects that could not be overcome by mitigation measures through policies in the plan.
Cambridgeshire Local Transport Plan 2011-2026	The Local Transport Plan 2011-2026 for Cambridgeshire sets out how Government capital funding allocated for transport will be spent, and how this will be used to meet local and national targets.
Other Plans for Areas Outside the Plan area:	
Cambridge Local Plan 2004	The land use strategy up to 2016 focuses growth in Cambridge on the Station area and four urban extensions comprising mixed use centres to the north, south, west and east of the City as a focus for future employment and residential expansion, connected to each other and to the City Centre by high quality public transport (includes sites that extend into South Cambridgeshire).
Cambridge Core Strategy – Issues and Options 2007	The Core Strategy Issues and Options considers growth within Cambridge up to 2021.
Huntingdonshire Local Plan 1995	The Local Plan 1995 provided for development up to 2006, and focused development onto larger settlements.
Huntingdonshire Core Strategy DPD –adopted 2009 & Development Management DPD	The Core Strategy sets the framework for how Huntingdonshire will develop up to 2026. It contains strategic policies to manage growth and guide new development. Provides for development

OTHER RELEVANT PLANS AND STRATEGIES	SUMMARY
Submission 2010 – currently reviewing in light of proposed changes by Central Government.	including 14,000 new homes up to 2026 and focuses development on larger settlements. The Development Management DPD sets out local policies for managing development in Huntingdonshire. The policies in this document will be used to assess and determining applications for development in the district and cover topic areas including climate change, housing, economic development, quality of life and the environment.
Huntingdon West Area Action Plan Adopted 2011	The area action plan covers approximately 300 hectares of land west of Huntingdon's town centre. Of this, some 20 hectares is land between the town centre and the railway line and includes the Huntingdon Railway Station. The remaining land extends west to encompass the Hinchingbrooke area. The Huntingdon West Area Action Plan is an area where significant change is expected. It will help deliver planned growth, stimulate regeneration, protect areas particularly sensitive to change, and resolve potentially conflicting objectives in this area.
Huntingdon Gypsy and Traveller DPD Issues Report 2009	This plan will identify sites suitable for Travellers and include policies to assess future planning applications for sites.
East Cambridgeshire Core Strategy DPD – Adopted 2009	The East Cambridgeshire Core Strategy DPD covers the entire district of East Cambridgeshire and provides the overall spatial planning strategy for the District up to 2025. The Core Strategy sets out the strategic vision for the district of East Cambridgeshire and the policies to be used when considering individual planning proposals. Allocations of land for specific purposes will be considered in a separate documents (the Allocated Sites DPD and The Ely Area Action Plan), which will conform to the framework set out by the Core Strategy. The rate of growth currently envisaged by the Core Strategy would result in an additional 3398 dwellings in Ely by 2025, 1100 of these outside the settlement boundary.
Ely Masterplan – approved by East Cambridgeshire District Council in February 2010.	The Ely Masterplan is the Council's longer term vision for the future of Ely. It sets out a strategy for development based on long term growth supported by significant infrastructure improvements. The vision of the Masterplan will be taken forward in stages. In the short term action will focus on delivering much needed improvements to leisure facilities, open space, shopping and employment and a start will be made on key regeneration and opportunity sites.
Soham Masterplan – approved by East Cambs. DC on May 2010.	The Soham Masterplan Vision is the Council's longer term vision for the future of Soham. The Masterplan Vision sets out bold and ambitious plans for the town's future, which will help to complete its transformation from an expanded village into a welcoming and thriving 21st Century Cambridgeshire Market Town. Work has now commenced on the next phase of the Soham Vision with further detailed work on the opportunity sites.
Littleport Masterplan adopted by East Cambs. DC in May 2011.	The Littleport Masterplan is the Council's longer term vision for the future of Littleport. The Littleport Masterplan presents a vision for Littleport that embraces its unique natural fen landscape setting, and is focused on revitalising the town centre, improving job

OTHER RELEVANT PLANS AND STRATEGIES	SUMMARY
	opportunities, and achieving high quality development that enhances the image of the town.
Fenland Local Plan 1993 and Draft Fenland Communiities Plan (Core Strategy) – Consultation 2011	The Local Plan 1993 concentrates growth in housing, employment and service provision within existing centres. The Draft Core Strategy contains the proposed policies and broad locations for the growth and regeneration of Fenland for the next 20 years. Planning to deliver 11,000 – 16,000 homes; Making new land available to attract businesses and create 1000's of new jobs; Adopting a more flexible criteria based approach to growth; Focusing major growth in all 4 market towns – Chatteris, March, Whittlesey and Wisbech; Proposing appropriate and sensitive growth in our rural settlements.
Uttlesford Core Strategy – Preferred Options 2010	Housing is to be concentrated in a limited number of settlements. 8,000 dwellings are to be planned for by 2021.
North Herts Local Plan 1996 and Core Strategy & Development Policies Preferred Options 2007	The local plan 1996 seeks to restrain development pressures, maintain the existing pattern of settlements and countryside, and enhance the character of existing land uses in urban and rural areas. The Core Strategy issues and options explores how housing and jobs required in the area should be accommodated.
Central Bedfordshire Core Strategy and Development Management Policies for Northern Area Adopted 2009	The plan sets out the vision, objectives, spatial strategy and overarching policies to guide development. At least 5,000 new homes and approximately 77ha of employment land (B1 – B8) must be provided between 2010 and 2026. Settlement hierarchy policy to direct development.
Central Bedfordshire Site Allocation DPD for Northern Area – adopted 2011	Plan identifies where development to take place within district concentrating most in the larger more sustainable settlements .
Bedford Core Strategy and Rural Issues Plan – Adopted 2008	Plans for district up to 2021. The areas of Bedford, Kempston and the northern Marston Vale (the Growth Area) are the focus for development.
Luton and southern Central Bedfordshire Joint Core Strategy – Submitted to Secretary of State and then withdrawn – July 2011	Plan for spatial strategy for area . Withdrawn because specific site west of Luton has not been allocated.
Mid Bedfordshire Local Plan 2005 & Core Strategy and Development Control Policies DPD Preferred Options 2007	The local plan directs housing and economic development to within and adjoining the main urban areas, and in the strategic transportation corridors South West of Bedford and in East Bedfordshire. The Core Strategy issues and options explores how housing and jobs required in the area should be accommodated.
Forest Heath Core Strategy – Adopted 2010	Core Strategy focuses development on existing towns. The Site Specific Policies and Allocations DPD will determine development boundaries for towns and villages and allocate sites

OTHER RELEVANT PLANS AND STRATEGIES	SUMMARY
& Site Specific Policies & Allocations DPD – work in this plan delayed due to changes from Central Government	for the required range of land-use and scale of development outlined in the Core Strategy. -
St.Edmundsbury Core Strategy DPD – adopted 2010	Core Strategy concentrates growth in housing, employment and service provision within existing urban areas. Plans up to 2031.
Bury St Edmunds Vision 2031 Haverhill Vision 2031 Rural Vision 2031 – Issues consultation 2011	Vision 2031 – Asking community what they would like to see within district. Opportunity to have a say in planning in Bury St Edmunds; Haverhill and within rural areas of district.
King's Lynn & West Norfolk Core Strategy – adopted 2011	Core Strategy will guide development up to 2025
King's Lynn & West Norfolk Site Allocation and Policies – Issues and Options 2011	Allocation suitable sites for development
Bedfordshire and Luton Minerals and Waste Local Plan 2005;	Sets policies regarding proposals for minerals extraction and waste sites, and allocates sites.
Bedfordshire and Luton Minerals DPD - Core Strategy and Site Allocation Plan – Preferred options 2008 ; Waste DPD – Core Strategy – Preferred options 2010.	Sets policies regarding proposals for minerals extraction and waste sites, and allocates sites.
Hertfordshire Minerals Local Plan 1998 (and review adopted 2007)	Sets policies regarding proposals for minerals extraction, and allocates sites.
Hertfordshire Waste Local Plan 1998	Sets policies regarding proposals for waste sites, and allocates sites.
Hertfordshire Waste Core Strategy and Development Management DPD - Submission 2011	The Waste Core Strategy sets out the spatial vision and strategic objectives for waste planning in the county. This contains core policies needed to implement the overall objectives and covers the period to 2026.
Suffolk Minerals Core Strategy Adopted 2008 & Minerals Specific Site Allocations DPD, Adopted 2009	Sets policies regarding proposals for minerals extraction, and allocates sites. The Core Strategy sets out the key elements of minerals planning framework for the county based on an agreed vision followed by aims and strategic objectives. The document also contains a suite of generic development control policies. The site allocations document looks at 25 potential sites for new minerals and waste developments.
Suffolk Waste Core Strategy Adopted 2011	Sets policies regarding proposals for waste, and allocates sites.

OTHER RELEVANT PLANS AND STRATEGIES	SUMMARY
Milton Keynes Local Plan 2005; Core Strategy –Submission 2011	Includes new development on the edge of Milton Keynes.
Buckinghamshire County Council Waste Local Plan 1997	Sets policies regarding proposals for waste, and allocates sites.
Buckinghamshire Minerals DPD – Preferred options 2007	Providing policies for planning for minerals
Buckinghamshire Waste DPD – Preferred options 2007	Providing policies for planning for waste.
Milton Keynes Waste DPD Adopted 2008	Sets policies regarding proposals for waste.
Milton Keynes Minerals Local Plan 2006;	Sets policies regarding proposals for minerals extraction, and allocates sites.
Norfolk Mineral and Waste Core Strategy and Development Control Document - Adopted 2011	Sets out policies for both minerals and waste planning