

Habitats Regulations Assessment of Greater Norwich Local Plan Issues and Options stage

for

Greater Norwich Development Partnership

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Status: Issue

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This report is certified BS 42020 compliant and has been prepared in accordance with The Chartered Institute of Ecology and Environmental Management's (CIEEM) Technical Guidance Series '*Ecological Report Writing*' and Code of Professional Conduct.

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Non-technical summary

The Landscape Partnership was commissioned by the Greater Norwich Development Partnership to undertake a Habitat Regulations Assessment (HRA) of the Greater Norwich Local Plan (GNLP). This report is an interim assessment of the Issues and Options stage for the emerging Greater Norwich Local Plan, encompassing Norwich City, Broadland District outside the Broads Authority area, and South Norfolk District.

The objectives of the study were to identify European sites within and near the Greater Norwich Local Plan Area along with their qualifying features and to determine if these would be directly or indirectly affected by the emerging Local Plan. Overall, the aim was to determine whether the plan would have a likely significant effect upon the integrity of any European site. The focus of the assessment is on direct and indirect effects of proposed housing although other matters such as transport and employment land were also assessed. This report accompanies the Regulation 18 Consultation on the Issues and Options stage of the Local Plan.

The report was written by Nick Sibbett CEcol MCIEEM CEnv CMLI and reviewed by Dr Jo Parmenter CEcol MCIEEM CEnv MIEMA.

Impacts considered for the proposed distribution of housing include water cycles (use and disposal), air pollution especially from new roads and an increase or change in the pattern of distribution of road users, water pollution or enrichment resulting from discharge to water, and the impacts of increased visitors to European sites.

In addition to considering the potential impacts of the growth proposed by the GNLP alone, a number of other plans or projects were identified that could have in-combination impacts.

Assessment of the distributional alternatives for housing has identified that allocations to the north-west, west and south-west of Norwich were situated to reduce the likely impact of regular visitors to The Broads / Broadland sites. The options 'transport corridors' and 'Cambridge – Norwich tech corridor' are strong options in terms of avoiding impacts to European sites. Allocations to the north-east of Norwich are marginally outside zones of influence of the popular coastal European sites although with all options some additional occasional visits to the popular coastal European sites are predicted. Options for dispersal, or dispersal plus a new settlement are harder to assess as the housing could be almost anywhere.

The only part of Greater Norwich which is over 8km from any European sites is an area in the south, including from Spooner Row south to Dickleburgh and Harleston, and eastwards to the Suffolk border near Bungay. Superficially, the impact on European sites would be least if development was focussed in this area as there would be few additional recreational visits to European sites from housing in this area.

To alleviate recreational pressure on European sites alternative recreational opportunities should be provided. This could take the form of a new country park containing woodland, small and large waterbodies (where feasible and subject to aircraft safeguarding constraints, open grassland or potentially inland beach functions (if feasible) nearer the strategic development sites.

Allocations would need to be accompanied by a water cycle study to demonstrate no harm to the water environment of European sites, in relation to water abstraction and to waste water both in isolation and in combination with other development

1 Introduction

1.1 The plan being considered

1.1.1 Broadland District Council, Norwich City Council and South Norfolk Council, working with Norfolk County Council, are working together to prepare the Greater Norwich Local Plan (GNLP). This will replace the Joint Core Strategy for Broadland, Norwich and South Norfolk (JCS), which was adopted in March 2011, and other more recently adopted 'lower tier' Development Plan Documents. The plan being considered in this interim assessment is the Regulation 18 Issues and Options stage. The three local Planning Authorities have come together to form the Greater Norwich Development Partnership to deliver the GNLP.

1.2 The Joint Core Strategy for Broadland, Norwich and South Norfolk (2011)

1.2.1 The JCS plans for the housing and jobs needs of the area to 2026, and identifies the broad scale and distribution of proposed development over the Plan period. It aims to some deliver 37,000 homes and create 27,000 jobs in a way that minimises the impact on the environment and maximises the quality of life.

1.2.2 Growth is focussed in a large mixed use urban extension within the Old Catton, Sprowston, Rackheath and Thorpe St Andrew, referred to as the 'Broadland Growth Triangle', and on brownfield land in the Norwich urban area. Other large-scale growth locations are identified in the A11 corridor, at Wymondham, Easton/Costessey, Cringleford, and Hethersett, and at Long Stratton. These locations all fall within the Norwich Policy Area.

1.2.3 Consultants Mott MacDonald were appointed to undertake the JCS Habitats Regulations Assessment (HRA) in accordance with the Conservation of Habitats and Species Regulations 2010. The report of the Assessment was published in February 2010, before the JCS was adopted. In brief, the HRA concluded that it was unlikely that the JCS policies would have a significant direct or indirect impact on European and Ramsar designated sites.

1.2.4 However, the report highlighted some areas of uncertainty regarding potential in combination and cumulative effects associated with water resources, water quality, water efficiency, growth and tourism on such sites, because of the dependence on the effectiveness and implementation of mitigation measures and actions required to avoid adverse impact on site integrity. These measures included:

- The allocation of greenspace to protect specific natural assets and designated sites to be implemented through area action plans and related green infrastructure measures; and
- The implementation of water infrastructure improvements (for water resources and waste water treatment) and water efficiency measures as recommended in the Water Cycle Study and delivered through Anglian Water's Water Resource Management Plan.

1.2.5 The report also recognised that, whereas green infrastructure requirements can, in large part, be delivered through the planning system, delivery of the necessary water resource mitigation measures lie beyond the powers of the local planning authorities. Hence water availability was identified as a major uncertainty at the time, and the longer-term water resources issue was never fully resolved.

1.2.6 However, to allow the conclusion of the JCS HRA to stand, a process was agreed whereby restrictions on abstraction could be introduced at Costessey until such time as Anglian Water had evaluated a range of potential solutions and secured funding for a programme of further measures. The preparation of the GNLP provides an opportunity to review progress.

1.2.7 The JCS requires allocations to be made to ensure at least 36,820 homes can be delivered between 2008 and 2026, of which approximately 33,000 will be within the Norwich Policy Area. Specific site allocations are identified in five separate Local Plan documents:

- Broadland Site Allocations Development Plan Document (2016);

- Growth Triangle Area Action Plan (2016)
- Norwich site allocations and site specific policies local plan document (2014);
- South Norfolk Local Plan Site Specific Allocations and Policies Document (2015);
- Wymondham Area Action Plan (2015); and,
- Long Stratton Area Action Plan (2016).

1.3 The Greater Norwich Local Plan

- 1.3.1 The existing joint working arrangements for planning in Greater Norwich continues, and the emerging Greater Norwich Local Plan builds on the adopted Joint Core Strategy (JCS) for the area. Like the JCS, it will look to ensure that delivery of development is done in a way which promotes sustainability and the effective functioning of the whole area.
- 1.3.2 The Issues and Options stage Greater Norwich Local Plan reviews the strategic policy framework for future development in Greater Norwich, including policies which currently guide future development and protect the environment. It will also identify new site allocations and 'roll forward' allocations, where appropriate, from the current local plan.
- 1.3.3 The GNLP will, in due course, replace all adopted policy for Greater Norwich, excluding Development Management Policy, and will identify all future site allocations in a single document.

1.4 Alternatives for housing numbers

- 1.4.1 For the purposes of this assessment the housing numbers considered under 'Reasonable Alternatives' are those described in meeting papers for the Greater Norwich Development Partnership Board meeting on 23rd June 2017 (<http://www.greaternorwichgrowth.org.uk/planning/greater-norwich-local-plan/>). These alternatives consider the Objectively Assessed Need for housing, the need for a buffer for delivery to account for some areas under-delivering the target, whether the new homes needed to respond to the City Deal employment increases, and whether or not windfall development (on unallocated sites) should result in a reduction of proposed allocations. The four reasonable alternatives are
- GNLP Housing Requirement is equal to Objectively Assessed Need. Delivery buffer is approx 20% of OAN. Windfall Housing is used as an additional buffer
 - GNLP Housing Requirement is equal to Objectively Assessed Need. Delivery buffer is approx 20% of OAN. Housing allocations are discounted to take account of Windfall Housing
 - GNLP Housing Requirement is equal to Objectively Assessed Need plus net Housing Response to City Deal. Delivery buffer is approx 20% of OAN. Windfall Housing is used as an additional buffer
 - GNLP Housing Requirement is equal to Objectively Assessed Need plus net Housing Response to City Deal. Delivery buffer is approx 20% of OAN. Housing allocations are discounted to take account of Windfall Housing
- 1.4.2 Greater Norwich Development Partnership Board propose that the first of the four reasonable alternatives is chosen. The proposed allocation of housing is 8,900 new homes in the period 2015 to 2036, in addition to the existing housing commitments in previous Local Plan documents and completions. This includes a 23% buffer above the housing requirement, and does not take into account windfall housing (i.e. development on unallocated sites). The projected windfall would result in a 37% buffer, which would be sufficient to satisfy an uplift for the City Deal should the housing market require it. The total GNLP housing provision, including existing commitments, would be 48,478 homes.

1.5 Distributional alternatives for housing to be assessed

- 1.5.1 An important part of the process of preparing the GNLP is to identify potential development locations to meet required needs. The GDNP Board meeting of 23rd June considered seven distributional alternatives. This Interim HRA has been based on those seven alternatives.
- 1.5.2 It is proposed that 1700 allocations are made on previously developed land in Norwich and fringe parishes, 1000 allocations are made in main towns and Key Service Centres, 1000 allocations are made in Service Villages, and 200 allocations are made in other villages. This leaves 5000 residual allocations of the 8,900 Housing Requirement to be allocated. A series of seven alternatives for the distribution of the 5000 residual housing allocations have been defined. These consider options for heavy concentrations of development around Norwich and the built-up fringe, through to wide ranging dispersal across Greater Norwich, along with other intermediate alternatives.

1.6 What are the Habitats Regulations?

- 1.6.1 The Conservation of Habitats and Species Regulations 2017 are often abbreviated to the 'Habitats Regulations'. The Habitats Regulations interpret the European Birds Directive and Habitats Directive into English and Welsh law. For clarity, the following paragraphs consider the case in England only, with Natural England given as the appropriate nature conservation body. In Wales, the Countryside Council for Wales is the appropriate nature conservation body.
- 1.6.2 Special Protection Areas and Special Areas of Conservation are defined in the regulations as a 'European site'. The Regulations regulate the management of land within European sites, requiring land managers to have the consent of Natural England before carrying out management. Byelaws may also be made to prevent damaging activities and if necessary land can be compulsorily purchased to achieve satisfactory management.
- 1.6.3 The Regulations define competent authorities as public bodies or statutory undertakers. Competent authorities are required to make an appropriate assessment of any plan or project they intend to permit or carry out, if the plan or project is likely to have a significant effect upon a European site. The permission may only be given if the plan or project is ascertained to have no adverse effect upon the integrity of the European site. If the competent authority wishes to permit a plan or project despite a negative assessment, imperative reasons of over-riding public interest must be demonstrated, and there should be no alternatives to the scheme. The permissions process would involve the Secretary of State and the option of consulting the European Commission. In practice, there will be very few cases where a plan or project is permitted despite a negative assessment. This means that a plan such as the Greater Norwich Local Plan, has to be assessed and the assessment must either decide that it is likely to have no significant effect on a European site or ascertain that there is no adverse effect upon the integrity of the European site.

1.7 Habitats Regulations Assessment process

- 1.7.1 A Habitats Regulations Assessment is a step-by-step process which is undertaken in order to determine whether a project or plan will have a likely significant effect (LSE) upon a European site. Before a competent authority can authorise a proposal, they must carry out an Appropriate Assessment of a plan or project in line with procedure detailed in the Habitats Regulations. The whole procedure is called a Habitats Regulations Assessment, with the Appropriate Assessment being part of one of four stages necessary to complete an HRA. The results of the HRA are intended to influence the decision of the competent authority when considering whether or not to authorise a proposal.

Stages of Habitats Regulations Assessment

- 1.7.2 *Stage One of the HRA is 'Screening'*. Plans or projects will be investigated for their potential to have a likely significant effect upon a European site. If the plan is likely to have a significant effect, and is not connected to the management of the site, an Appropriate Assessment is required. Proposals that are found not likely to have a significant effect upon a European site will be 'screened out' at this stage and no further investigation will be required.

- 1.7.3 *Stage Two of the HRA is the 'Appropriate Assessment and the Integrity Test'.* The plan-making authority must undertake an Appropriate Assessment which seeks to provide an objective and scientific assessment of how the proposed Local Plan may affect the qualifying features and conservation strategies of European sites. The whole plan must be assessed, but a 'scoping' exercise helps decide which parts of the plan have potential to give rise to significant effects and therefore where assessment should be prioritised. Natural England is an important consultee in this process and the public may also be consulted.
- 1.7.4 The UK Government accepts the definition for the 'integrity' of a site as *'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which the site is (or will be) designated.'* Other factors may also be used to describe the 'integrity' of a site. The plan-making authority must ascertain, using scientific evidence and a precautionary approach, that the plan will not adversely affect the integrity of a European site, prior to adopting the plan. Information provided in the Appropriate Assessment will be used when considering the Integrity test.
- 1.7.5 *Stage Three of the HRA is 'Imperative reasons of overriding public interest and compensatory measures'.* If the Competent Authority determines that there are imperative reasons of overriding public interest notwithstanding adverse impacts upon the integrity of the European site, and there are no alternatives, the plan may be given effect. In this case, the plan-making authority must notify the Secretary of State at least 21 days before authorisation; the Secretary of State may give a direction prohibiting the plan from being given effect. It is unlikely that this stage would be reached.

Consultations

- 1.7.6 Natural England is a statutory consultee, and so should be consulted at the draft and final plan stage. The public may also be consulted if it is considered appropriate, for example if the appropriate assessment is likely to result in significant changes to the plan.

Iterations and revision

- 1.7.7 The process is iterative; the conclusions of the first assessment may result in changes to the plan, and so a revision of the assessment would be required. If the revised assessment suggests further plan changes, the iteration will continue.
- 1.7.8 Iterative revisions typically continue until it can be ascertained that the plan will not have an adverse effect on the integrity of any European site.
- 1.7.9 There are further provisions for rare cases where over-riding public interest may mean that a land-use plan may be put into effect, notwithstanding a negative assessment, where there are no alternatives to development, but these provisions are not expected to be routinely used.

Guidance and good practice

- 1.7.10 This report has taken account of published guidance and good practice. A key source of information which summaries of legislative requirements, good practice guidance and case law (Tyldesley & Chapman, 2013) has been used during the writing of this report.

1.8 Why is Appropriate Assessment required?

- 1.8.1 The appropriate assessment process is required under the Conservation of Habitats and Species Regulations 2017. Regulation 105 states that

(1) Where a land use plan—

- (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and
- (b) is not directly connected with or necessary to the management of the site,

the plan-making authority for that plan must, before the plan is given effect, make an appropriate assessment of the implications for the site in view of that site's conservation objectives.

(2) The plan-making authority shall for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specify.

(3) They must also, if they consider it appropriate, take the opinion of the general public, and if they do so, they must take such steps for that purpose as they consider appropriate.

(4) In the light of the conclusions of the assessment, and subject to regulation 103 (considerations of overriding public interest), the plan-making authority or, in the case of a regional spatial strategy, the Secretary of State must give effect to the land use plan only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).

(5) A plan-making authority must provide such information as the appropriate authority may reasonably require for the purposes of the discharge of the obligations of the appropriate authority under this chapter.

(6) This regulation does not apply in relation to a site which is—

(a) a European site by reason of regulation 8(1)(c); or

(b) a European offshore marine site by reason of regulation 15(c) of the 2007 Regulations (site protected in accordance with Article 5(4) of the Habitats Directive

1.8.2 The plan-making authorities, as defined under the Regulations, are Broadland District Council, Norwich City Council and South Norfolk District Council and the appropriate nature conservation body is Natural England.

1.8.3 The Appropriate Assessment screening in this report is the first stage of an assessment carried out on behalf of these three local authorities to allow them to decide whether to give effect to the plan under Regulation 102.

1.9 European sites

1.9.1 European sites (also known as Natura 2000/N2K sites) are sites that have been classified or designated by Defra/Welsh Ministers or Natural England/Natural Resources Wales, as Special Protection Areas (SPA) for those sites where birds are the special interest feature, and Special Areas of Conservation (SAC) where the habitats or species (other than birds) are the reason for designation.

1.9.2 Wetlands of International Importance, designated under the Ramsar Convention, are not European sites. There may often be considerable overlap between the special interest features and physical boundaries of Ramsar sites, with European sites. However, for the purposes of planning and development, Government policy in the NPPF states that Ramsar sites should be treated equally/in the same way as European sites. The same applies for sites under consideration for designation including potential Special Protection Area (pSPA), Site of Community Importance (SCI), Candidate Special Area of Conservation (cSAC) and proposed Ramsar sites. In summary, although Appropriate Assessment only legally applies to European sites, National Planning Policy provides further obligations to ensure that all those sites previously mentioned are subject to assessment. Therefore, for the purposes of this report, the term 'European site(s)' refers to all sites under assessment.

1.9.3 As the interest features of the Ramsar sites are usually very similar to the interest features of the SPA and / or SAC designations, both geographically and ecologically, the assessment below, for clarity does not always repeat Ramsar site names. The assessment does however consider Ramsar sites fully, and if an assessment for a Ramsar site was found to differ from that for the respective SPA / SAC, this would be clearly identified.

- 1.9.4 European Marine Site (EMS) is a term that is often used for a SPA or SAC that includes marine components (i.e. land/habitats up to 12 nautical miles out to sea and below the Mean High Water Mark). A European Marine Site does not have a statutory designation of its own but is designated for the same reasons as the relevant SPA or SAC, and because of this they are not always listed as a site in their own right, to save duplication. For the purpose of this document, an EMS is referred to as an Inshore SPA (or SAC) with Marine Components and it will be made clear if an SPA/SAC has marine components.

1.10 Iteration and consultation

- 1.10.1 This is the second report of a series which will culminate in the Habitats Regulations Assessment of Greater Norwich Local Plan. The first report (The Landscape Partnership, July 2017), which looked at 22 strategic growth options, accompanies this report.

2 European sites potentially affected

2.1 European sites

2.1.1

A search using Natural England's Interactive 'Magic Map'¹ revealed that a number of European sites lie within, near or partially within the Greater Norwich area, i.e. the land within Broadland District Council, South Norfolk District Council or Norwich City Council areas. Each European site is listed below with a brief description of its qualifying features and is shown on Figure 01. Because some of the European sites cross Local Planning Authority boundaries and because some of the European Sites are made up of component Sites of Special Scientific Interest (SSSI) which are located in different Planning Authority areas, no attempt has been made to differentiate those European and Ramsar sites which lie within the plan area, which lie within the boundaries of Broadland District, South Norfolk District and Norwich City Council areas and which are within Local Authority Districts beyond these.

River Wensum SAC		
Site description summary	Qualifying features²	
<p>A calcareous lowland river considered one of the best areas in the UK for Ranunculion fluitantis and Callitriche-Batrachion vegetation. Also significant for the presence of Brook Lamprey, Bullhead and Desmoulin's whorl snail. One of the best areas in the UK for the native White-clawed Crayfish.</p> <p>At the upper reaches, run-off from calcareous soils rich in plant nutrients feeds beds of submerged and emerged vegetation characteristic of chalk streams. Lower, the chalk is overlain by boulder clay, resulting in aquatic plant communities more characteristic of rivers with mixed substrates.</p>	3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1092	Austropotamobius pallipes (White-clawed (or Atlantic steam) Crayfish)
	1163	Cottus gobio (Bullhead)
	1096	Lampetra planeri (Brook Lamprey)
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)
Component SSSI/s³		
River Wensum SSSI	Covers 385.96ha and contains 55 units. 11.05% of units in Favourable condition, 47.70% of units in Unfavourable-Recovering condition, 41.25% of units in Unfavourable-No change condition.	
Conservation Objectives⁴		
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely 	

¹ <http://magic.defra.gov.uk/home.htm>

² Taken from the Natura 2000 Standard data form for site UK0012647 River Wensum SAC dated 25-01-16.

³ Condition status taken from Natural England data via Magic Map on 6th March 2017.

⁴ Taken from Natural England's European Site Conservation Objectives for River Wensum SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

	<ul style="list-style-type: none"> • The populations of qualifying species, and, • The distribution of qualifying species within the site.
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Norfolk Valley Fens SAC	
Site description summary	Qualifying features⁵
A series of valley-head spring-fed fens, typified by black-bog-rush - blunt-flowered rush <i>Schoenus nigricans</i> - <i>Juncus subnodulosus</i> mire. There are also transitions to reedswamp, other fen and wet grassland types, and gradations from calcareous fens into acidic flush communities. Plant species present include marsh helleborine <i>Epipactis palustris</i> , narrow-leaved marsh-orchid <i>Dactylorhiza traunsteineri</i> , and alder <i>Alnus glutinosa</i> which forms carr woodland in places by streams. Marginal fens associated with pingos-pools originating from the thawing of large blocks of ice at the end of the last Ice Age support several large populations of Desmoulin's whorl snail <i>Vertigo moulinsiana</i> .	4010 North Atlantic wet heaths with <i>Erica tetralix</i>
	4030 European dry heaths
	6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (*important orchid sites)
	6410 Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae)
	7150 Depressions on peat substrates of the Rhynchosporion
	7210 Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae
	7230 Alkaline fens
	91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)
	1355 <i>Lutra Lutra</i> (Eurasian Otter)
	1166 <i>Triturus cristatus</i> (Great Crested Newt)
	1014 <i>Vertigo angustior</i> (Narrow-mouthed whorl snail)
1016 <i>Vertigo moulinsiana</i> (Desmoulin's whorl snail)	
Component SSSI/s⁶	
Badley Moor SSSI	Covers 18.33ha and contains 4 units. 100% of units in Favourable condition
Booton Common SSSI	Covers 8.19ha and contains 1 unit. 100% of units in Unfavourable-Recovering condition.
Buxton Heath SSSI	Covers 67.32ha and contains 1 unit. 100% of units in Unfavourable-Recovering condition.
Coston Fen, Runhall SSSI	Covers 7.11ha and contains 1 unit. 100% of units in Unfavourable-No change condition.
East Walton and Adcock's Common SSSI	Covers 62.41ha and contains 3 units. 100% of units in Unfavourable-Recovering condition.
Flordon Common SSSI	Covers 9.91ha and contains 2 units. 19.57% of units in Favourable condition, 80.43% of units in Unfavourable-Recovering condition.

⁵ Taken from the Natura 2000 Standard data form for site UK0012892 Norfolk Valley Fens SAC dated 25-01-16.

⁶ Condition status taken from Natural England data via Magic Map on 6th March 2017.

Foulden Common SSSI	Covers 139ha and contains 7 units. 24.74% of units in Favourable condition, 61.51% of units in Unfavourable-Recovering condition, 13.75% of units in Unfavourable-Declining condition.
Great Cressingham Fen SSSI	Covers 14.33ha and contains 1 unit. 100% of units in Unfavourable-Recovering condition.
Holt Lowes SSSI	Covers 49.91ha and contains 2 units. 30.07% of units in Favourable condition, 69.93% of units in Unfavourable-Recovering condition.
Potter & Scarning Fens, East Dereham SSSI	Covers 6.20ha and contains 2 units. 100% of units in Unfavourable-Recovering condition.
Sheringham and Beeston Regis Commons SSSI	Covers 24.94ha and contains 2 units. 100% of units in Unfavourable-Recovering condition.
Southrepps Common SSSI	Covers 5.57ha and contains 1 unit. 100% of units in Unfavourable-Recovering condition.
Swangey Fen, Attleborough SSSI	Covers 48.39ha and contains 6 units. 44.44% of units in Favourable condition, 55.56% of units in Unfavourable-Recovering condition.
Thompson Water, Carr and Common SSSI	Covers 154.74ha and contains 11 units. 73.05% of units in Favourable condition, 22.72% of units in Unfavourable-Recovering condition, 4.24% of units in Unfavourable-Declining condition.
Conservation Objectives⁷	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.

<i>The Broads SAC/ Broadland SPA, Ramsar</i>	
Site description summary	SAC qualifying features⁸
A low-lying wetland complex connecting the Bure, Yare, Thurne, and Waveney River systems. Wetland habitats form a mosaic of open water, reedbeds, carr woodland, grazing marsh, and fen meadow, with an extensive network of medieval peat excavations. The Site boasts a rich array of flora and fauna.	3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.
	3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
	6410 Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae)

⁷ Taken from Natural England's European Site Conservation Objectives for Norfolk Valley Fens SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

⁸ Taken from the Natura 2000 Standard data form for site UK0013577 The Broads SAC dated 25-01-16.

The SPA is designated for supporting a number of rare or vulnerable (Article 4.1) Annex I bird species during the breeding season. In addition, the SPA is designated for supporting regularly occurring migratory (Article 4.2) species during the breeding season and over winter.	7140	Transition mires and quaking bogs	
	7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	
	7230	Alkaline fens	
	91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	
	4056	<i>Anisus vorticulus</i> (Little whorlpool ram's-horn snail)	
	1903	<i>Liparis loeselii</i> (Fen Orchid)	
	1355	<i>Lutra Lutra</i> (Eurasian Otter)	
	1166	<i>Triturus cristatus</i> (Great Crested Newt)	
	1016	<i>Vertigo moulinsiana</i> (Desmoulin's whorl snail)	
	SPA qualifying features⁹		
	A056	<i>Anas clypeata</i> (Shoveler) (over winter)	
	A050	<i>Anas penelope</i> (Wigeon) (over winter)	
	A051	<i>Anas strepera</i> (Gadwall) (over winter)	
	A021	<i>Botaurus stellaris</i> (Bittern) (breeding)	
	A081	<i>Circus aeruginosus</i> (Marsh Harrier) (breeding)	
	A082	<i>Circus cyaneus</i> (Hen Harrier) (over winter)	
	A037	<i>Cygnus columbianus bewickii</i> (Bewick's Swan) (over winter)	
	A038	<i>Cygnus cygnus</i> (Whooper Swan) (over winter)	
	A151	<i>Philomachus pugnax</i> (Ruff) (over winter)	
	Ramsar qualifying features¹⁰		
	H7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> Calcium-rich fen dominated by great fen sedge (saw sedge).	
	H7230	Alkaline fens Calcium-rich springwater-fed fens.	
	H91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) Alder woodland on floodplains, and the Annex II species	
S1016	<i>Vertigo moulinsiana</i> (Desmoulin's whorl snail)		

⁹ Taken from the Natura 2000 Standard data form for site UK9009253 Broadland SPA dated 25-01-16.

¹⁰ Taken from the Ramsar Information Sheet for Broadland dated 21-09-94.

	S1355	Lutra lutra (Eurasian Otter)
	S1903	Liparis loeselii Fen Orchid
		Cygnus columbianus bewickii, NW Europe (Tundra (Bewick's) Swan)
		Anas penelope (Eurasian Wigeon)
		Anas strepera strepera (Gadwall)
		Anas clypeata (Shoveler)
Component SSSI/s¹¹		
Alderfen Broad SSSI	Covers 21.34ha and contains 3 units. 8.65% of units in Favourable condition, 91.35% of units in Unfavourable-Recovering condition.	
Ant Broads and Marshes SSSI	Covers 745.27ha and contains 35 units. 49.89% of units in Favourable condition, 43.38% of units in Unfavourable-Recovering condition.	
Barnby Broad & Marshes SSSI	Covers 192.69ha and contains 24 units. 59.93% of units in Favourable condition, 40.07% of units in Unfavourable-Recovering condition.	
Broad Fen, Dilham SSSI	Covers 38.43ha and contains 1 unit. 100% of units in Unfavourable-Recovering condition.	
Bure Broads and Marshes SSSI	Covers 741.15ha and contains 14 units. 43.08% in Favourable condition, 46.85% in Unfavourable-Recovering condition, 10.07% in Unfavourable-No change condition.	
Burgh Common and Muckfleet Marshes SSSI	Covers 121.54ha and contains 9 units. 27% of units in Favourable condition, 69.57% of units in Unfavourable-Recovering condition, 3.43% of units in Unfavourable-No change condition.	
Calthorpe Broad SSSI	Covers 43.54ha and contains 3 units. 97.68% of units in Favourable condition, 2.32% of units in Unfavourable-Recovering condition.	
Cantley Marshes SSSI	Covers 272.11ha and contains 3 units. 100% of units in Favourable condition.	
Crostwick Marsh SSSI	Covers 11.57ha and contains 1 unit. 100% of units in Unfavourable-No change condition.	
Damgate Marshes, Acle SSSI	Covers 64.68ha and contains 10 units. 74.73% of units in Favourable condition, 25.27% of units in Unfavourable-Recovering condition.	
Decoy Carr, Acle SSSI	Covers 56.01ha and contains 6 units. 70.21% of units in Favourable condition, 29.79% of units in Unfavourable-Recovering condition.	
Ducan's Marsh, Claxton SSSI	Covers 3.58ha and contains 2 units. 100% of units in Unfavourable-Recovering condition.	
Geldeston Meadows SSSI	Covers 13.98ha and contains 2 units. 97.18% of units in Unfavourable-No change condition, 2.82% of units in Unfavourable-Declining condition.	
Hall Farm Fen, Hemsby SSSI	Covers 9.15ha and contains 1 unit. 100% of units in Favourable condition.	

¹¹ Condition status taken from Natural England data via Magic Map on 6th and 7th March 2017.

Halvergate Marshes SSSI	Covers 1432.72ha and contains 42 units. 72.75% of units in Favourable condition, 23.71% of units in Unfavourable-Declining condition, 3.54% of units in Unfavourable-No change condition.
Hardley Flood SSSI	Covers 49.79ha and contains 2 units. 100% of units in Favourable condition.
Limpenhoe Meadows SSSI	Covers 11.95ha and contains 1 unit. 100% of unit in Unfavourable-Recovering condition.
Ludham – Potter Heigham Marshes SSSI	Covers 101.51ha and contains 6 units. 100% of units in Favourable condition.
Poplar Farm Meadows, Langley SSSI	Covers 7.55ha and contains 1 unit. 100% of units in Favourable condition.
Priory Meadows, Hickling SSSI	Covers 23.94ha and contains 2 units. 29.79% of units in Favourable condition, 70.21% of units in Unfavourable-Recovering condition.
Shallam Dyke Marshes, Thurne SSSI	Covers 69.80ha and contains 8 units. 4.44% of units in Favourable condition, 95.56% of units in Unfavourable-No change condition.
Smallburgh Fen SSSI	Covers 7.63ha and contains 1 unit. 100% of units in Favourable condition.
Sprat's Water and Marshes, Carlton Colville SSSI	Covers 57.14ha and contains 11 units. 80.48% of units in Favourable condition, 19.19% of units in Unfavourable-Recovering condition, 0.33% of units in Unfavourable-No change condition.
Stanley and Alder Carrs, Aldeby SSSI	Covers 42.68ha and contains 3 units. 100% of unit in Unfavourable-Recovering condition.
Trinity Broads SSSI	Covers 316.83ha and contains 23 units. 45.48% of units in Favourable condition, 41.98% of units in Unfavourable-Recovering condition, 12.54% of units in Unfavourable-No change condition.
Upper Thurne Broads and Marshes SSSI	Covers 1185.93ha and contains 19 units. 64.69% of units in Favourable condition, 16.65% of units in Unfavourable-Recovering condition, 4.82% of units in Unfavourable-No change condition, 13.85% of units in Unfavourable-Declining condition.
Upton Broad & Marshes SSSI	Covers 195.44ha and contains 18 units. 7.43% of units in Favourable condition, 91.84% of Unfavourable-Recovering condition, 0.72% of units in Unfavourable-No change condition.
Yare Broads and Marshes SSSI	Covers 744.46ha and contains 28 units. 69.31% of units in Favourable condition, 14.67% of units in Unfavourable-Recovering condition, 14.33% of units in Unfavourable-No change condition, 1.69% of units in Unfavourable-Declining condition.
SAC Conservation Objectives¹²	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its	<ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats

¹² Taken from Natural England's European Site Conservation Objectives for The Broads SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

Qualifying Features, by maintaining or restoring;	<ul style="list-style-type: none"> • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.
SPA Conservation Objectives¹³	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Breydon Water SPA/Ramsar/SPA (Marine)	
Site description summary	SPA qualifying features¹⁴
<p>An inland tidal estuary at the mouth of the River Yare and its confluence with the Rivers Bure and Waveney. Extensive areas of mud-flats form the only tidal flats on the east Norfolk coast. The Site also features much floodplain grassland, which lies adjacent to the intertidal areas. It is internationally important for wintering waterbirds, some of which feed in the Broadland Ramsar that adjoins this site at Halvergate Marshes.</p> <p>This SPA is part of the Breydon Water European Marine Site.</p>	A037 Cygnus columbianus bewickii (Bewick's (Tundra) Swan) (over winter)
	A151 Philomachus pugnax (Ruff) (concentration)
	A140 Pluvialis apricaria (Golden Plover) (over winter)
	A132 Recurvirostra avosetta (Avocet) (over winter)
	A193 Sterna hirundo (Common Tern) (breeding)
	A142 Vanellus vanellus (Northern Lapwing) (over winter)
	Waterbird assemblage
	Ramsar qualifying features¹⁵
	<p>Internationally important waterfowl assemblage (greater than 20000 birds)</p> <p>Over winter the site regularly supports internationally important numbers of: Bewick's Swan Cygnus columbianus bewickii and Lapwing Vanellus vanellus</p>
Component SSSI/s¹⁶	
Breydon Water SSSI	Covers 514.40ha and contains 15 units. 100% of units in Favourable condition.

¹³ Taken from Natural England's European Site Conservation Objectives for Broadland SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

¹⁴ Taken from the Natura 2000 Standard data form for site UK9009181 Breydon Water SPA dated 25-01-16.

¹⁵ Taken from the Ramsar Information Sheet for Breydon Water dated Feb 2000.

¹⁶ Condition status taken from Natural England data via Magic Map on 7th March 2017.

Halvergate Marshes SSSI	Covers 1432.72ha and contains 42 units. 72.75% of units in Favourable condition, 23.71% of units in Unfavourable-Declining condition, 3.54% of units in Unfavourable-No change condition.
Conservation Objectives¹⁷	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Great Yarmouth North Denes SPA	
Site description summary	Qualifying features¹⁸
Low dunes stabilised by marram grass <i>Ammophila arenaria</i> with extensive areas of grey hair-grass <i>Corynephorus canescens</i> . The Site supports important numbers of little tern <i>Sterna albifrons</i> that feed in waters close to the SPA. This SPA is part of the Great Yarmouth North Denes European Marine Site (EMS).	A195 Sterna albifrons (Little Tern) (breeding)
Component SSSI/s¹⁹	
Great Yarmouth North Denes SSSI	Covers 100.75ha and contains 2 units. 100% of units in Favourable condition.
Winterton – Horsey Dunes SSSI	Covers 426.95ha and contains 12 units. 67.92% of units in Favourable condition, 9.88% of units in Unfavourable-Recovering condition, 22.20% of units in Unfavourable-No change condition.
Conservation Objectives²⁰	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

¹⁷ Taken from Natural England's European Site Conservation Objectives for Breydon Water SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

¹⁸ Taken from the Natura 2000 Standard data form for site UK9009271 Great Yarmouth North Denes SPA dated 25-01-16.

¹⁹ Condition status taken from Natural England data via Magic Map on 7th March 2017.

²⁰ Taken from Natural England's European Site Conservation Objectives for Great Yarmouth North Denes SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

Winterton – Horsey Dunes SAC		
Site description summary	Qualifying features²¹	
The only significant area of dune heath on the east coast of England, which occur over an extremely base-poor dune system, and include areas of acidic dune grassland as an associated acidic habitat. These acidic soils support swamp and mire communities, in addition to common dune slack vegetation, including creeping willow <i>Salix repens</i> subsp. <i>argentea</i> and Yorkshire fog <i>Holcus lanatus</i> . The drought resistant grey hair-grass <i>Corynephorus canescens</i> is characteristic of open areas.	2110	Embryonic shifting dunes
	2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")
	2150	Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)
	2160	Dunes with <i>Hippophae rhamnoides</i>
	2190	Humid dune slacks
	1166	<i>Triturus cristatus</i> (Great Crested Newt)
Component SSSI/s²²		
Winterton – Horsey Dunes SSSI	Covers 426.95ha and contains 12 units. 67.92% of units in Favourable condition, 9.88% of units in Unfavourable-Recovering condition, 22.20% of units in Unfavourable-No change condition.	
Conservation Objectives²³		
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of the qualifying natural habitats • The structure and function (including typical species) of the qualifying natural habitats, and, • The supporting processes on which the qualifying natural habitats rely. 	

Paston Great Barn SAC		
Site description summary	Qualifying features²⁴	
Nationally, this is an extremely rare example of a maternity roost of barbastelle bats <i>Barbastella barbastellus</i> in a building. A 16th century thatched barn with associated outbuildings. The maternity colony inhabits many crevices and cracks in the roof timbers.	1308	<i>Barbastella barbastellus</i> (Barbastelle bat) (permanent population)
Component SSSI/s²⁵		
Paston Great Barn SSSI	Covers 0.96ha and contains 1 unit. 100% of units in Favourable condition.	
Conservation Objectives²⁶		

²¹ Taken from the Natura 2000 Standard data form for site UK0013043 Winterton – Horsey Dunes SAC dated 25-01-16.

²² Condition status taken from Natural England data via Magic Map on 7th March 2017.

²³ Taken from Natural England's European Site Conservation Objectives for Winterton-Horsey Dunes SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

²⁴ Taken from the Natura 2000 Standard data form for site UK0030235 Paston Great Barn SAC dated December 2015.

²⁵ Condition status taken from Natural England data via Magic Map on 7th March 2017.

²⁶ Taken from Natural England's European Site Conservation Objectives for Paston Great Barn SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p>	<ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.
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Overstrand Cliffs SAC			
Site description summary	Qualifying features ²⁷		
<p>Vegetated soft cliffs composed of Pleistocene clays and sands, subject to common cliff-falls and landslips. Vegetation undergoes cycles whereby ruderal-dominated communities develop on the newly exposed sands and mud, succeeded by more stable grassland and scrub vegetation. In areas where freshwater seepages occur there are fen communities and occasional perched reedbeds. The diverse range of habitats support a large number of invertebrate species.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center; vertical-align: top;">1230</td> <td style="vertical-align: top;">Vegetated sea cliffs of the Atlantic and Baltic Coasts</td> </tr> </table>	1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts		
Component SSSI/s ²⁸			
Overstrand Cliffs SSSI	Covers 57.75ha and contains 2 units. 100% of units in Favourable condition.		
Conservation Objectives ²⁹			
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p>	<ul style="list-style-type: none"> • The extent and distribution of the qualifying natural habitats • The structure and function (including typical species) of the qualifying natural habitats, and • The supporting processes on which the qualifying natural habitats rely. 		

Waveney & Little Ouse Valley Fens SAC					
Site description summary	Qualifying features ³⁰				
<p>Calcareous fen containing extensive beds of great fen-sedge <i>Cladium mariscus</i>. Purple moor-grass – meadow thistle <i>Molinia caerulea</i> – <i>Cirsium dissectum</i> fen-meadows, associated with the spring-fed valley fen systems, occur in conjunction with black bog-rush – blunt-flowered rush <i>Schoenus nigricans</i> – <i>Juncus subnodulosus</i> mire and calcareous fens with great fen-sedge. Grazed areas of fen-meadow are more species-rich, and frequently support</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center; vertical-align: top;">6410</td> <td style="vertical-align: top;">Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">7210</td> <td style="vertical-align: top;">Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i></td> </tr> </table>	6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)	7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)				
7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>				

²⁷ Taken from the Natura 2000 Standard data form for site UK0030232 Overstrand Cliffs SAC dated December 2015.

²⁸ Condition status taken from Natural England data via Magic Map on 7th March 2017.

²⁹ Taken from Natural England's European Site Conservation Objectives for Overstrand Cliffs SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

³⁰ Taken from the Natura 2000 Standard data form for site UK0012882 Waveney and Little Ouse Valley Fens SAC dated December 2015.

southern marsh-orchid <i>Dactylorhiza praetermissa</i>	1016	Vertigo moulinsiana (Desmoulin's whorl snail)
Component SSSI/s³¹		
Blo' Norton and Thelnetham Fen SSSI	Covers 21.32ha and contains 6 units. 35.08% of units in Favourable condition, 64.92% of units in Unfavourable-Recovering condition.	
Redgrave and Lopham Fens SSSI	Covers 127.03ha and contains 4 units. 100% of units in Unfavourable-Recovering condition.	
Weston Fen SSSI	Covers 49.73ha and contains 10 units. 49.79% of units in Favourable condition, 33.02% of units in Unfavourable-Recovering condition, 17.19% of units in Unfavourable-No change condition.	
Conservation Objectives³²		
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	

Redgrave and South Lopham Fens Ramsar	
Site description summary	Qualifying features³³
An extensive area of spring-fed valley fen at the headwaters of the River Waveney which supports a variety of fen plant community types, including <i>Molinia</i> -based grasslands, mixed sedge-fen, and reed-dominated fen. Small areas of wet heath, sallow carr, and birch woodland also occur, and the Site is known to support the fen raft spider <i>Dolomedes plantarius</i> .	The site is an extensive example of spring-fed lowland base-rich valley, remarkable for its lack of fragmentation.
	The site supports many rare and scarce invertebrates, including a population of the fen raft spider <i>Dolomedes plantarius</i> . This spider is also considered vulnerable by the IUCN Red List.
	The site supports many rare and scarce invertebrates, including a population of the fen raft spider <i>Dolomedes plantarius</i> . The diversity of the site is due to the lateral and longitudinal zonation of the vegetation types characteristic of valley mires.

³¹ Condition status taken from Natural England data via Magic Map on 7th March 2017.

³² Taken from Natural England's European Site Conservation Objectives for Waveney and Little Ouse Valley Fens SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

³³ Taken from the Ramsar Information Sheet for Redgrave and South Lopham Fen Ramsar dated May 2005.

Component SSSI/s ³⁴	
Redgrave and Lopham Fens SSSI	Covers 127.03ha and contains 4 units. 100% of units in Unfavourable-Recovering condition.
Conservation Objectives	
n/a	

Breckland SPA/SAC		
Site description summary	SPA qualifying features ³⁵	
<p>A gently rolling plateau underlain by cretaceous chalk bedrock covered with thin deposits of sand and flint. The climate and free-draining soils has produced dry heath and grassland communities. Pingos with biological interest occur in some areas. 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. Breckland is the most extensive surviving area of the rare sheep's fescue – mouse-ear hawkweed – wild thyme <i>Festuca ovina</i> – <i>Hieracium pilosella</i> – <i>Thymus praecox</i> grassland type. A number of the water bodies within the site support populations of amphibians, including great crested newts <i>Triturus cristatus</i>.</p>	A133	Burhinus oedicnemus (Stone Curlew) (breeding)
	A224	Caprimulgus europaeus (Nightjar) (breeding)
	A246	Lullula arborea (Woodlark) (breeding)
	SAC qualifying features ³⁶	
	2330	Inland dunes with open Corynephorus and Agrostis grasslands
	3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
	4030	European dry heaths
	6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1308	Barbastella barbastellus (Barbastelle bat)
1166	Triturus cristatus (Great Crested Newt)	
Component SSSI/s ³⁷ (within SPA, SAC or both)		
Barnham Heath SSSI	Covers 78.62ha and contains 2 units. 89.45% of units in Favourable condition, 10.55% of units in Unfavourable-Recovering condition.	

³⁴ Condition status taken from Natural England data via Magic Map on 7th March 2017.

³⁵ Taken from the Natura 2000 Standard data form for site UK9009201 Breckland SPA dated December 2015.

³⁶ Taken from the Natura 2000 Standard data form for site UK0019865 Breckland SAC dated December 2015.

³⁷ Condition status taken from Natural England data via Magic Map on 7th March 2017.

Barnhamcross Common SSSI	Covers 69.08ha and contains 2 units. 100% of units in Unfavourable-Recovering condition.
Berner's Heath, Icklingham SSSI	Covers 235.86ha and contains 3 units. 97.09% of units in Favourable condition, 2.91% of units destroyed.
Breckland Farmland SSSI	Covers 13392.36ha and contains 70 units. 100% of units in Favourable condition.
Breckland Forest SSSI	Covers 18125.99ha and contains 7 units. 0.09% of units in Favourable condition, 99.91% of units in Unfavourable-Recovering condition.
Bridgham & Brettenham Heaths SSSI	Covers 441.70ha and contains 6 units. 13.03% of units in Favourable condition, 86.97% of units in Unfavourable-Recovering condition.
Cavenham – Icklingham Heaths SSSI	Covers 419.01ha and contains 27 units. 30.59% of units in Favourable condition, 65.03% of units in Unfavourable-Recovering condition, 1.78% of units in Unfavourable-No change condition.
Cranberry Rough, Hockham SSSI	Covers 81.13ha and contains 4 units. 21.62% of units in Favourable condition, 78.38% of units in Unfavourable-Recovering condition.
Cranwich Camp SSSI	Covers 13.10ha and contains 1 unit. 100% of units in Unfavourable-Recovering condition.
Deadman's Grave, Icklingham SSSI	Covers 127.33ha and contains 6 units. 14.17% of units in Favourable condition, 83.80% of units in Unfavourable-Recovering condition, 2.03% of units in Unfavourable-Declining condition.
East Wretham Heath SSSI	Covers 141.05ha and contains 6 units. 7% of units in Favourable condition, 89.08% of units in Unfavourable-Recovering condition, 3.92% of units in Unfavourable-Declining condition.
Eriswell Low Warren SSSI	Covers 7.42ha and contains 1 unit. 100% of units in Favourable condition.
Field Barn Heaths, Hilborough SSSI	Covers 17.86ha and contains 1 unit. 100% of units in Unfavourable-Recovering condition.
Foxhole Heath, Eriswell SSSI	Covers 85.17ha and contains 1 unit. 100% of units in Favourable condition.
Gooderstone Warren SSSI	Covers 21.63ha and contains 4 units. 100% of units in Unfavourable-Recovering condition.
Grime's Graves SSSI	Covers 66.12ha and contains 3 units. 26.79% of units in Favourable condition, 73.21% of units in Unfavourable-Recovering condition.
How Hill Track SSSI	Covers 3.11ha and contains 1 unit. 100% of units in Favourable condition.
Lakenheath Warren SSSI	Covers 588.33ha and contains 11 units. 1.62% of units in Favourable condition, 63.40% of units in Unfavourable-Recovering condition, 34.99% of units in Unfavourable-No change condition.
RAF Lakenheath SSSI	Covers 111ha and contains 4 units. 100% of units in Favourable condition.
Little Heath, Barnham SSSI	Covers 46.25ha and contains 3 units. 13.52% of units in Favourable condition, 2.59% of units in Unfavourable-

	Recovering condition, 83.89% of units in Unfavourable-Declining condition.
Old Bodney Camp SSSI	Covers 32.76ha and contains 2 units. 100% of units in Favourable condition.
Rex Graham Reserve SSSI	Covers 2.76ha and contains 1 unit. 100% of units in Favourable condition.
Stanford Training Area SSSI	Covers 4677.96ha and contains 81 units. 42.12% of units in Favourable condition, 54.71% of units in Unfavourable-Recovering condition, 3.12% of units in Unfavourable-No change condition, 0.05% of units in Unfavourable-Declining condition.
Thetford Golf Course & Marsh SSSI	Covers 122.30ha and contains 8 units. 3.12% of units in Favourable condition, 77.61% of units in Unfavourable-Recovering condition, 19.27% of units in Unfavourable-No change condition.
Thetford Heaths SSSI	Covers 270.58ha and contains 4 units. 36.32% of units in Favourable condition, 57.06% of units in Unfavourable-Recovering condition, 6.62% of units in Unfavourable-No change condition.
Wangford Warren and Carr SSSI	Covers 67.79ha and contains 5 units. 22.65% of units in Favourable condition, 77.35% of units in Unfavourable-Recovering condition.
Weather and Horn Heaths, Eriswell SSSI	Covers 133.32ha and contains 3 units. 97.77% of units in Unfavourable-Declining condition, 2.23% of units Partially destroyed.
Weeting Heath SSSI	Covers 141.75ha and contains 6 units. 40.15% of units in Favourable condition, 38.97% of units in Unfavourable-Recovering condition, 29.60% of units in Unfavourable-No change condition.
West Stow Heath SSSI	Covers 44.30ha and contains 5 units. 14.51% of units in Favourable condition, 85.49% of units in Unfavourable-Recovering condition.
SPA Conservation Objectives³⁸	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site
SAC Conservation Objectives³⁹	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving	<ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species

³⁸ Taken from Natural England's European Site Conservation Objectives for Breckland SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

³⁹ Taken from Natural England's European Site Conservation Objectives for Breckland SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

<p>the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p>	<ul style="list-style-type: none"> • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.
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<i>Benacre to Easton Bavents Lagoons SAC/Benacre to Easton Bavents SPA</i>	
Site description summary	SAC qualifying features⁴⁰
<p>Situated on the east coast of Suffolk, this site includes semi-natural broadleaved woodland, tall fen vegetation, shingle, dunes and grassland, saltmarsh and coastal lagoons. The habitats are important for breeding, wintering and passage birds.</p> <p>There are a series of percolating lagoons that have formed behind shingle barriers and are a feature of a geomorphologically dynamic system. The site supports a number of specialist lagoonal species.</p> <p>The SPA is part of the Benacre to Easton Bavents European Marine Site.</p>	1150 Coastal lagoons
	91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)
	SPA qualifying features⁴¹
	A021 <i>Botaurus stellaris</i> (Bittern) (breeding)
	A081 <i>Circus aeruginosus</i> (Marsh Harrier) (breeding)
	A195 <i>Sterna albifrons</i> (Little Tern) (breeding)
Component SSSI/s⁴²	
<p>Pakefield to Easton Bavents SSSI</p>	<p>Covers 735.45ha and contains 51 units. 48.73% of units in Favourable condition, 38.98% of units in Unfavourable-Recovering condition, 8.73% of units in Unfavourable-No change condition, 3.11% Unfavourable-Declining condition, 0.45% of units Partially destroyed.</p>
SAC Conservation Objectives⁴³	
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p>	<ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats • The structure and function (including typical species) of qualifying natural habitats, and • The supporting processes on which qualifying natural habitats rely.
SPA Conservation Objectives⁴⁴	
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving</p>	<ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features

⁴⁰ Taken from the Natura 2000 Standard data form for site UK0013104 Benacre to Easton Bavents Lagoons SAC dated December 2015.

⁴¹ Taken from the Natura 2000 Standard data form for site UK9009291 Benacre to Easton Bavents SPA dated December 2015.

⁴² Condition status taken from Natural England data via Magic Map on 7th March 2017.

⁴³ Taken from Natural England's European Site Conservation Objectives for Benacre to Easton Bavents Lagoons SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

⁴⁴ Taken from Natural England's European Site Conservation Objectives for Benacre to Easton Bavents SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

<p>the aims of the Wild Birds Directive, by maintaining or restoring;</p>	<ul style="list-style-type: none"> • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.
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Dew's Ponds SAC			
Site description summary	Qualifying features⁴⁵		
<p>A series of 12 ponds located in rural East Suffolk, in formerly predominantly arable land. Great Crested Newt has been found in all ponds. Some of the arable land has been converted to grassland and there are also hedgerows and ditches.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">1166</td> <td style="text-align: center;">Triturus cristatus (Great Crested Newt)</td> </tr> </table>	1166	Triturus cristatus (Great Crested Newt)
1166	Triturus cristatus (Great Crested Newt)		
Component SSSI/s⁴⁶			
<p>Dew's Ponds SSSI</p>	<p>Covers 6.72ha and contains 4 units. 100% of units in Favourable condition.</p>		
Conservation Objectives⁴⁷			
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p>	<ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 		

The Wash and North Norfolk Coast SAC (inshore)															
Site description summary	Qualifying features⁴⁸														
<p>The Wash is the largest embayment in the UK and is connected to the North Norfolk Coast via sediment transfer systems. Together The Wash and North Norfolk Coast form one of the most important marine areas in the UK and European North Sea coast, and include extensive areas of varying, but predominantly sandy, sediments subject to a range of conditions. Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Subtidal communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittlestar</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">1110</td> <td style="text-align: center;">Sandbanks which are slightly covered by sea water all the time</td> </tr> <tr> <td style="text-align: center;">1140</td> <td style="text-align: center;">Mudflats and sandflats not covered by seawater at low tide</td> </tr> <tr> <td style="text-align: center;">1150</td> <td style="text-align: center;">Coastal lagoons</td> </tr> <tr> <td style="text-align: center;">1160</td> <td style="text-align: center;">Large shallow inlets and bays</td> </tr> <tr> <td style="text-align: center;">1170</td> <td style="text-align: center;">Reefs</td> </tr> <tr> <td style="text-align: center;">1310</td> <td style="text-align: center;">Salicornia and other annuals colonizing mud and sand</td> </tr> <tr> <td style="text-align: center;">1320</td> <td style="text-align: center;">Spartina swards (<i>Spartinion maritimae</i>)</td> </tr> </table>	1110	Sandbanks which are slightly covered by sea water all the time	1140	Mudflats and sandflats not covered by seawater at low tide	1150	Coastal lagoons	1160	Large shallow inlets and bays	1170	Reefs	1310	Salicornia and other annuals colonizing mud and sand	1320	Spartina swards (<i>Spartinion maritimae</i>)
1110	Sandbanks which are slightly covered by sea water all the time														
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1160	Large shallow inlets and bays														
1170	Reefs														
1310	Salicornia and other annuals colonizing mud and sand														
1320	Spartina swards (<i>Spartinion maritimae</i>)														

⁴⁵ Taken from the Natura 2000 Standard data form for site UK0030133 Dew's Ponds SAC dated December 2015.

⁴⁶ Condition status taken from Natural England data via Magic Map on 7th March 2017.

⁴⁷ Taken from Natural England's European Site Conservation Objectives for Dew's Ponds SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

⁴⁸ Taken from the Natura 2000 Standard data form for site UK0017075 The Wash and North Norfolk Coast SAC dated December 2015.

<p>beds and areas of an abundant reef-building worm ('ross worm') <i>Sabellaria spinulosa</i>. The embayment supports a variety of mobile species, including a range of fish, otter <i>Lutra lutra</i> and common seal <i>Phoca vitulina</i>. The extensive intertidal flats provide ideal conditions for common seal breeding and hauling-out.</p> <p>This SAC is part of The Wash and North Norfolk Coast European Marine Site.</p>	1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)
	1420	Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)
	1364	<i>Halichoerus grypus</i> (Grey Seal)
	1355	<i>Lutra lutra</i> (Eurasian Otter)
	1365	<i>Phoca vitulina</i> (Harbour/Common Seal)
Component SSSI/s		
The Wash SSSI		
Conservation Objectives⁴⁹		
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p>	<ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	

North Norfolk Coast SPA (marine)/SAC (inshore)/Ramsar		
Site description summary	SAC qualifying features⁵⁰	
<p>Important within Europe as one of the largest areas of undeveloped coastal habitat of its type, supporting intertidal mudflats and sandflats, coastal waters, saltmarshes, shingle, sand dunes, freshwater grazing marshes, and reedbeds. Large numbers of waterbirds use the Site throughout the year. In Summer, the Site and surrounding area are important for breeding populations of four species of tern, waders, bittern <i>Botaurus stellaris</i>, and wetland raptors including marsh harrier <i>Circus aeruginosus</i>. In Winter, the Site supports large numbers of geese, sea ducks, other ducks and waders using the Site for roosting and feeding. The Site is also important for migratory species during the Spring and Autumn.</p> <p>This SAC is part of the North Norfolk Coast European Marine Site.</p> <p>The SPA is designated for supporting a number of rare or vulnerable (Article 4.1) Annex I bird species during the breeding season. In addition, the SPA is designated for supporting regularly occurring migratory</p>	1150	Coastal lagoons
	1220	Perennial vegetation of stony banks
	1420	Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)
	2110	Embryonic shifting dunes
	2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")
	2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")
	2160	Dunes with <i>Hippophae rhamnoides</i>
	2190	Humid dune slacks
	1355	<i>Lutra Lutra</i> (Eurasian Otter)
	1395	<i>Petallophyllum ralfsii</i> (Petalwort)

⁴⁹ Taken from Natural England's European Site Conservation Objectives for The Wash and North Norfolk SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

⁵⁰ Taken from the Natura 2000 Standard data form for site UK0019838 North Norfolk Coast SAC dated December 2015.

<p>(Article 4.2) species during the breeding season and over winter.</p> <p>This SPA is part of The Wash and North Norfolk Coast European Marine Site (EMS).</p>	1166	Triturus cristatus (Great Crested Newt)
	SPA qualifying features⁵¹	
	A040	Anser brachyrhynchus (Pink-footed Goose) (over winter)
	A050	Anas penelope (Wigeon) (over winter)
	A021	Botaurus stellaris (Bittern) (breeding)
	A675	Branta bernicla bernicla (Dark-bellied Brent Goose) (over winter)
	A143	Callidris canutus (Red Knot) (over winter)
	A081	Circus aeruginosus (Marsh Harrier) (breeding)
	A132	Recurvirostra avosetta (Avocet) (breeding and over winter)
	A195	Sterna albifrons (Little Tern) (breeding)
	A193	Sterna hirundo (Common tern) (breeding)
	A191	Sterna sandvicensis (Sandwich Tern) (breeding)
WATR	Waterfowl assemblage	
Ramsar qualifying features⁵²		
<p>The site is one of the largest expanses of undeveloped coastal habitat of its type in Europe. It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.</p>		
<p>Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.</p>		
<p>98462 waterfowl peak count in winter (assemblages of international importance)</p>		
<p>Sterna sandvicensis (Sandwich Tern) (breeding)</p>		
<p>Sterna hirundo (Common Tern) (breeding)</p>		
<p>Sterna albifrons (Little Tern) (breeding)</p>		
<p>Calidris canutus (Red Knot) (over winter)</p>		
<p>Anser brachyrhynchus (Pink-footed Goose) (over winter)</p>		
<p>Branta bernicla bernicla (Dark-bellied Brent goose) (over winter)</p>		
<p>Anas penelope (Wigeon) (over winter)</p>		
<p>Anas acuta (Pintail) (over winter)</p>		
Component SSSI/s⁵³		

⁵¹ Taken from the Natura 2000 Standard data form for site UK9009031 North Norfolk Coast SPA dated December 2015.

⁵² Taken from the Ramsar Information Sheet for North Norfolk Coast dated 13-06-08.

⁵³ Condition status taken from Natural England data via Magic Map on 7th March 2017.

North Norfolk Coast SSSI	Covers 7862.29ha and contains 70 units. 97.82% of units in Favourable condition, 2.18% of units in Unfavourable-Recovering condition.
SAC Conservation Objectives⁵⁴	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.
SPA Conservation Objectives⁵⁵	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	<ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

<i>Southern North Sea cSAC (offshore and inshore)</i>			
Site description summary	Qualifying features⁵⁶		
<p>The Southern North Sea site has been recognised as ‘an area of predicted persistent high densities of harbour porpoise’. Therefore, the Southern North Sea site has been submitted to the EU and is a candidate for designation as an Inshore and Offshore SAC for the Annex II species, Harbour Porpoise.</p> <p>The Southern North Sea site extends down the North Sea from the River Tyne, south to the River Thames. The aim of the SAC is to support the maintenance of harbour porpoise populations throughout UK waters (the Southern North Sea supports higher number of porpoises compared to many other parts of their UK range). Seasonal differences in the use of the site by harbour porpoises which</p>	<table border="1"> <tr> <td>1351</td> <td>Phocoena phocoena (Harbour Porpoise)</td> </tr> </table>	1351	Phocoena phocoena (Harbour Porpoise)
1351	Phocoena phocoena (Harbour Porpoise)		

⁵⁴ Taken from Natural England’s European Site Conservation Objectives for North Norfolk Coast SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

⁵⁵ Taken from Natural England’s European Site Conservation Objectives for North Norfolk Coast SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

⁵⁶ Taken from the Natura 2000 Standard Data Form for Site UK0030395 Southern North Sea SCI dated January 2017.

show the elevated densities of the species in some parts of the site compared to others during the summer and winter, have been identified. The main threats to harbour porpoise are from incidental catch, pollution and noise/physical disturbance.	
Component SSSI/s	
n/a	
Conservation Objectives⁵⁷	
The focus of the Conservation Objectives for harbour porpoise sites is on addressing pressures that affect site integrity and would include:	<ul style="list-style-type: none"> • killing or injuring significant numbers of harbour porpoise (directly or indirectly); • preventing their use of significant parts of the site (disturbance / displacement); • significantly damaging relevant habitats; or • significantly reducing the prey base.
The Conservation Objectives document also contains the following guidance:	The seasonality in porpoise distribution should be considered in the assessment of impacts and proposed management.

<i>Outer Thames Estuary SPA (marine)/Outer Thames Estuary Extension pSAC (marine)</i>	
Site description summary	Qualifying features⁵⁸
<p>This SPA is entirely marine and is designated because its habitats support 38% of the Great British population of over-wintering Red-throated Diver <i>Gavia stellata</i>, a qualifying species under Article 4.1 of the Birds Directive. The Outer Thames Estuary SPA covers vast areas of marine habitat off the east coast between Caister-on-Sea, Norfolk in the north, down to Margate, Kent in the south. The habitats covered by the SPA include marine areas and sea inlets where Red-throated Diver is particularly susceptible to noise and visual disturbance e.g. from wind farms and coastal recreation activities. Threats from effluent discharge, oil spillages and entanglement/drowning in fishing nets are significant.</p> <p>The addition of two new protected features and associated boundary amendments was consulted on in January to July 2016. The proposed extension would afford protection for Little tern and Common tern foraging areas, enhancing protection already afforded to their feeding and nesting areas in the adjacent coastal SPAs (Foulness SPA, Breydon Water SPA and Minsmere to Walberswick SPA).</p>	<p>A001 <i>Gavia stellata</i> (Red-throated Diver) (over winter)</p>
Component SSSI/s	

⁵⁷ Taken from Natural England's Harbour Porpoise (*Phocoena phocoena*) possible Special Area of Conservation: Southern North Sea Draft Conservation Objectives and Advice on Activities dated January 2016.

⁵⁸ Taken from the Natura 2000 Standard Data Form for Site UK9020309 Outer Thames Estuary SPA dated December 2015.

n/a	
Conservation Objectives⁵⁹	
Subject to natural change, maintain or enhance the red-throated diver population and its supporting habitats in favourable condition.	

<i>Haisborough, Hammond and Winterton SCI</i>	
Site description summary	Qualifying features⁶⁰
The site lies off the north east coast of Norfolk and contains a series of sandbanks as well as Sabellaria spinulosa reefs. Small numbers of Harbour Porpoise are regularly observed within the site boundary and a large colony of breeding Grey Seal is known adjacent to the site.	1110 Sandbanks which are slightly covered by sea water all the time
	1170 Reefs
	1364 Halichoerus grypus (Grey Seal)
	1351 Phocoena phocoena (Harbour Porpoise)
Component SSSI/s	
n/a	
Conservation Objectives⁶¹	
For Annex 1 sandbanks which are slightly covered by seawater all the time:	Subject to natural change maintain the sandbanks in favourable condition, in particular the sub-features: <ul style="list-style-type: none"> • Low diversity dynamic sand communities • Gravelly muddy sand communities
For Annex 1 Sabellaria spinulosa reefs:	Subject to natural change maintain or restore the reefs in favourable condition

⁵⁹ Taken from Natural England's Draft advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended) and Regulation 18 of The Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 (as amended) for Outer Thames Estuary SPA Version 3.7 March 2013.

⁶⁰ Taken from the Natura 2000 Standard data form for site UK0030369 Haisborough, Hammond and Winterton SAC dated December 2015.

⁶¹ Taken from JNCC and Natural England's Haisborough, Hammond and Winterton candidate Special Area of Conservation Formal advice under Regulation 35(3) of The Conservation of Natural Habitats and Species Regulations 2010 (as amended), and Regulation 18 of The Offshore Marine Conservation Regulations (Natural Habitats,&c.) Regulations 2007 (as amended). Version 6.0 (March 2013).

2.2 Other relevant Plans or Projects potentially affecting these sites

2.2.1 In addition to the potential impact that Greater Norwich Local Plan may have upon the nearby European sites described above, other plans/documents/guidance may also impact upon these sites, in particular the plans of the neighbouring local planning authorities. The most relevant documents are likely to be those concerned with planning policy and infrastructure provision.

2.2.2 The neighbouring local authorities as well as those that contain European sites within the Zone of Influence of the Greater Norwich Growth Area are listed below. Their planning documents such as Core Strategy and Development Plan Documents, (emerging) Local Plans, Site Allocation documents and Area Action Plans, together with Neighbourhood Plans, are likely to be the most relevant when considering potential for cumulative impacts upon European sites.

- Broads Authority
- Breckland Council
- Borough Council of King's Lynn & West Norfolk
- North Norfolk District Council
- Great Yarmouth borough Council
- East Suffolk Council (Waveney District Council and Suffolk Coastal District Council)
- Mid Suffolk District Council
- West Suffolk Council (Forest Heath District Council and St Edmundsbury Borough Council)
- South Holland District Council
- Boston Borough Council
- East Lindsey District Council
- Norfolk County Council – Minerals site specific allocations DPD

2.2.3 Plans or projects connected with infrastructure planning and management also have potential to impact European sites, whether alone or in combination. Such plans are listed below and will need to be considered further in the report.

- Greater Norwich Water Cycle Study
- Green Infrastructure Strategy (2007) and Green Infrastructure Delivery Plan (2009)
- River Basin Management Plan for the Anglian Water Basin District (2015)
- North East Norwich Growth Triangle Green Infrastructure Delivery Plan (2016)
- East Broadland Green Infrastructure Delivery Plan (2015)
- Norwich River Wensum Green Infrastructure Strategy (not currently available)
- Green Infrastructure sections of the Wymondham Area Action Plan (2015)
- Green Infrastructure sections of the Long Stratton Area Action Plan (2016)
- Norwich Northern Distributor Road

3 Likely significant effects of Greater Norwich Local Plan on European sites

3.1 Necessary or connected with management of European sites?

3.1.1 It is considered that the Greater Norwich Local Plan is not necessary for, or connected with, the nature conservation management of any European sites.

3.2 Likely significant effects which might arise from policies and allocations within Greater Norwich Local Plan

3.2.1 A Zone of Influence has been developed for the Greater Norwich Growth Area by setting a series of distance bands around European sites based upon the distance beyond the site boundary which might conceivably be impacted by development within the distributional alternatives, through three main pathways. The Zones of Influence are shown on Figure 02. Potential impact pathways are described more fully in the next section but can be summarised as follows.

- Increased recreational pressure: The distance over which a significant number of visitors would be likely to travel from Greater Norwich to those European sites outside Greater Norwich (Panter & Liley, 2016) for recreation. This is considered to be in the region of **1km** for those travelling on foot and **8km** for those travelling by car for routine regular greenspace use; and between **8km** and **20km** distance for regular trips to 'special sites' such as coastal reserves. Inland sites tend to attract large numbers of visitors from within 8km distance only, with the exception of sites with Visitor Centres / visitor facilities in Breckland, which can draw large numbers of visitors from as far afield as 20km or more. Coastal reserves may potentially attract visitors from further afield still on an occasional basis.
- Increased pressure on water resources: The new homes would require a reliable source of drinking water. It is not yet known whether this would come from existing point source abstractions from groundwater or surface water, or whether from new boreholes. Water resources in the region are already under considerable pressure. A major water supply borehole could potentially give rise to an impact upon designated wetland sites up to 10km away, depending upon the depth of the borehole and the nature of the strata from which abstraction is taking place. It is further assumed that the water supply borehole or surface water abstraction point might be up to 10km distant from any new settlement, giving a Zone of Influence extending up to **20km** from any one of the new housing allocation areas.
- Pollution impacts: Waste water discharge from developments, including foul water discharges is assumed to be treated, however would give rise to elevated levels of nitrates, and, depending upon whether phosphate stripping equipment is in place, phosphate, downstream of the discharge point. There is also potential for chemical spillages, or STW failure to lead to discharge of untreated effluent. The area affected by waste water discharge is assumed to extend downstream from any discharge point, potentially as far as the coast but in practice not more than **8km** from the discharge point. This is most relevant to European sites which include, or are linked, to watercourses.
- Pollution impacts: The distance over which additional traffic movements might give rise to emissions to air such as Nitrogen oxides NO_x and Sulphur dioxide SO₂ which have the potential to result in adverse impact upon vegetation or water quality. This aspect has not been specifically investigated, but other studies have shown that the greatest level of impact is closest to the road network and that, for NO_x, levels have fallen to the background level within 200m of the road. It is therefore surmised that the area affected by traffic emissions to air can be assumed to closely follow existing road corridors within the Growth Area and it is also assumed that any future road construction would be largely within the Growth Area and hence any impacts would be largely experienced in close proximity to the site allocation areas.

- 3.2.2 Effects arising from increased urbanisation of the countryside, this including local scale impacts such as predation by domestic pets, fly-tipping etc. are considered likely to have potential to take place to an extent likely to cause significant impact upon a European site or Ramsar only within a **1km** radius of the allocation site areas (with the exception of impacts upon foraging bats) and the scale and nature of the impacts would depend upon the location of new development relative to European designated sites and the reasons for site designation.
- 3.2.3 Direct impacts upon European designated sites would similarly depend upon the location of new development relative to European designated sites. It is probable that a buffer of at least 250m would be afforded to internationally designated site and thus direct impacts are unlikely to occur.
- 3.2.4 Impacts arising from any of the above factors upon a designated European site could occur in isolation and result from development of a single large housing site, for example in the immediate vicinity of Norwich; or through a combination of dispersed developments elsewhere in the Growth Area. Some European sites would be more vulnerable to recreational pressure whilst others might be more sensitive to other types of impacts. In isolated incidences, a European designated site may be sensitive to several different types of impact, for example both recreational pressure and an impact upon water resources.
- 3.2.5 Other actions may also cause impact to European sites, such as public or private sector tourism strategies, management practices by landowners (with consent from Natural England), use by the general public (recreational pressure), existing developments, future (planned) developments and unplanned events, whether accidental, intentional or natural e.g. fires, storms, surges/flooding.

3.3 Criteria for the screening of housing numbers

- 3.3.1 Four reasonable alternatives are provided for proposed housing numbers (Section 1.4 above), with the proposed housing numbers to be based on a housing requirement equal to Objectively Assessed Need with a delivery buffer of 20% plus windfall housing. Other alternatives were for a smaller number of homes (windfall sites counted towards proposed housing rather than as extra buffer) or for a larger number of homes (uplift for City Deal).
- 3.3.2 Criteria cannot be set for the screening of housing numbers alone, because the distribution of the proposed housing is important. For example, an allocation for a small number of houses close to a European site might be more harmful than a much larger allocation at some distance. Screening of growth locations takes into account the scale of the development at that location, and cumulative effects are also considered.
- 3.3.3 This report therefore does not set criteria for screening of housing numbers in isolation of their distribution.

3.4 Criteria for the screening of distributional alternatives

- 3.4.1 The screening of distributional alternatives for housing is a process to determine which, if any, of the individual alternatives requires detailed assessment. For example, some of the alternatives might have a direct or indirect effect upon an international site, whilst other sites might have no effect. Criteria are set to determine which alternatives may have an effect. Effects from a combination of sites are also considered.
- 3.4.2 The criteria for determining if an allocation, or a combination of allocations, would have a likely significant effect, and require detailed assessment, are based on the scale and characteristics of the allocation, the characteristics of the relevant European site and the objectives set by Natural England in order that the site remains in favourable condition, and the potential for any factor arising from development of a site for housing impacting upon the features for which the European site is designated.
- 3.4.3 The various ways in which land use plans can impact on European sites can be determined by identifying pathways and mechanisms by which development can be connected with European sites, which in some instances may be many kilometres distant from the development location.

Briefly defined, pathways are routes by which a change associated with or resulting from a development can lead to an effect upon a European site.

3.4.4 The main factors to consider are:

- Increased urbanisation of the countryside
- Increased recreational pressure
- Increased pressure on water resources
- Pollution impacts
- Direct impacts e.g. habitat loss to facilitate construction

3.4.5 These are discussed in turn below.

Increased urbanisation of the countryside

3.4.6 This class of impacts is closely related to recreational pressure in the sense that both types of impact arise from having an increased human population close to protected wildlife sites. The list of such impacts is extensive, but some of the more significant ones include the following:

Predation impacts from domestic pets

3.4.7 Predation by domestic cats can potentially affect small mammals, birds, amphibians and reptiles and results in injury, mortality and elevated levels of disturbance.

- A survey undertaken in 1997 found that nine million British cats brought home 92 million prey items over a five-month period⁶².
- A large proportion of domestic cats are found in urban situations, and thus increasing urbanisation is likely to lead to increased cat predation. Domestic cats will potentially range up to 5km from home, although 60% of forays are over a distance of less than 400m⁶³ and the typical average distance for hunting excursions is around 375m⁶⁴.

Fly-tipping

3.4.8 Fly-tipping tends to take place only a short distance from development and affects land alongside or close to highways⁶⁵; often the terminus of a minor dead-end road, or adjacent to laybys on busier routes. The distance travelled will vary, but is likely to be usually less than 10km from source. Material dumped in this way is typically either household waste, including 'white goods' and green waste, tyres, or small-scale commercial waste. Depending upon the locality and nature of tipping, there may be harm to watercourses through pollution, damage to sensitive vegetation and in the case of green waste tipping in a woodland or wetland near to home, the release of alien invasive plant species into the wild; the species being dumped often being the more vigorous and hence potentially more invasive garden plants.

Lighting

3.4.9 Light pollution can affect the foraging and commuting activities of bat species, although there may be minor impacts upon bird behaviour.

- The slower flying broad winged species, which include Barbastelle (a European site designated feature) generally avoid street lights⁶⁶ and well-lit areas.

⁶² Woods, M. et al. 2003. Predation of wildlife by domestic cats *Felis catus* in Great Britain. *Mammal Review* 33, 2 174- 188

⁶³ Barratt, D.G. (1997). Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography* 20 271-280

⁶⁴ Turner, D.C. & Meister, O. (1988). Hunting behaviour of the domestic cat. In: *The Domestic Cat: The Biology of Its Behaviour*. Ed. Turner, D.C. and Bateson, P. Cambridge University Press.

⁶⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/595773/Flytipping_201516_statistical_release.pdf

⁶⁶ http://www.bats.org.uk/data/files/bats_and_lighting_in_the_uk__final_version_version_3_may_09.pdf

- It is thought that insects are attracted to lit areas from further afield and this may result in adjacent habitats supporting reduced numbers of insects. This is a further impact on the ability of the light avoiding bats to be able to feed.
- Artificial lighting is thought to increase the chances of bats being preyed upon⁶⁷. Many avian predators will hunt bats which may be one reason why bats avoid flying in the day. Observations have been made of kestrels (diurnal raptors) hunting at night under the artificial light along motorways. Lighting can be particularly harmful if used along commuting corridors such as river corridors, tree lines and hedgerows used by bats.

Increased recreational pressure

3.4.10 Recreational use of a European site has the potential to:

- Cause damage to soils and vegetation through trampling and erosion;
- Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl.
- Cause eutrophication as a result of dog fouling;
- Cause littering, giving rise to potential animal mortality, nutrient enrichment and small-scale pollution
- Prevent appropriate management or exacerbate existing management difficulties, for example grazing being restricted.

3.4.11 Different types of European sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex.

Trampling pressure and mechanical/abrasive damage

3.4.12 Most types of terrestrial European site can be affected by trampling, which in turn causes soil compaction and erosion, depending upon soil conditions, or changes to the vegetation. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species but significant impacts can also arise from walkers, cyclists and horses, resulting in reduction in vegetation cover.

3.4.13 Studies in a variety of vegetation types have shown that low-growing, mat-forming grasses appear most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks of trampling pressure, but had recovered well after one year and as such these were considered to have resilience in respect of trampling pressure. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling.

3.4.14 In practice this can mean changes to the vegetation community compromising the viability of taller growing fragile plant species in favour of species which have a leaf rosette which lies flat to the ground and often leading to a loss of rarer, more vulnerable plant species in favour of more robust, common species.

3.4.15 Dune habitat and other coastal ecosystems, heathlands and wetlands are amongst the most sensitive to trampling and erosion, whereas woodlands and meadowlands are more robust.

Eutrophication

3.4.16 Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and the total volume of dog faeces deposited on sites can be surprisingly large. For example, at Burnham Beeches National Nature Reserve over one year, Barnard⁶⁸ estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively. Nutrient-poor habitats

⁶⁷ http://www.bats.org.uk/data/files/bats_and_lighting_in_the_uk__final_version_version_3_may_09.pdf

⁶⁸ Barnard, A. (2003) Getting the Facts - Dog Walking and Visitor Number Surveys at Burnham Beeches and their Implications for the Management Process. *Countryside Recreation*, 11, 16 - 19

such as heathland, chalk grassland and certain types of fen vegetation are particularly sensitive to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces. Most impacts occur close to paths.

Disturbance

- 3.4.17 The deleterious effect of disturbance on birds stems from the fact that the birds are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding. This can adversely affect the 'condition' and ultimately survival of the birds. In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds. Disturbance of ground-nesting birds may result in the bird leaving the nest and exposing the eggs or chicks to predators or bad weather. Disturbed areas become unavailable for nesting even though the habitat may otherwise be suitable.
- 3.4.18 Walkers with dogs have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and move more erratically and this has been shown by number of studies, with birds flushing more readily, more frequently, at greater distances and for longer periods of time when dogs are present, particularly off-lead.
- 3.4.19 Where increased recreational use is predicted to cause adverse impacts on a site, avoidance and mitigation should be considered. Avoidance of recreational impacts at European sites involves location of new development away from such sites or provision of an alternative recreational resource.

Site management

- 3.4.20 Public access can cause conflict between people and habitats in terms of compromising effective site management. Dogs, rather than people, tend to be the cause of many management difficulties, notably by worrying grazing animals or necessitating moving cattle away from footpaths.

Increased pressure on water resources

- 3.4.21 The new homes would require a reliable source of drinking water. It is not yet known whether this would come from existing point source abstractions from groundwater or surface water, or whether from new boreholes.
- 3.4.22 The east and southeast of England have been identified by Environment Agency in 2013 as a region which is currently experiencing considerable pressure on water resources with the situation within both the Essex and Suffolk and the Anglia Water areas being considered to be serious at the present time due to limited water resources and high levels of demand. This situation is unchanged across 4 different future growth and climatic scenarios⁶⁹ and the study concluded that the Anglia Water area and Essex and Suffolk Water areas are experiencing 'Serious Stress', this being the highest level.
- 3.4.23 The Environment Agency has advised the Secretary of State that the areas classified as under 'Serious Stress' should be designated as 'Areas of serious water stress' for the purposes of Regulation 4 of the Water Industry (Prescribed Condition) Regulation 1999 (as amended).
- 3.4.24 Anglian Water (AW), in its 2014 Water Resources Management Plan have identified the relevant Resource Zones (RZ) to this Greater Norwich Local Plan area as being Norwich and the Broads, Norfolk Rural, and the North Norfolk Coast. The AW assessment takes into account planned and predicted growth and climate change.
- 3.4.25 No deficits are forecast by AW in the North Norfolk Coast RZ. No significant climate change or levels of service sensitivities have been identified. One likely sustainability reduction has been included for a maximum quantity of 1.3Ml/d in 2024/25.

⁶⁹ Environment Agency and Natural Resources Wales. 2013. Water Stressed Areas Final Classification
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244333/water-stressedclassification-2013.pdf

- 3.4.26 No deficits are forecast by AW in the Norfolk Rural RZ. No significant climate change or levels of service sensitivities have been identified. One WTW has been targeted for a likely sustainability reduction. This may reduce average daily source-works output by 0.2 MI/d. The worst case sustainability reduction is approximately 3 MI/d. A reduction of this magnitude is significant and would drive supply-demand investment.
- 3.4.27 Large AMP6 deficits (the period 2015-2020) are forecast by AW in the Norwich and the Broads RZ. These result from a sustainability reduction and at the end of the forecast period are likely to reach levels equivalent to 51.9MI/d under dry year annual average conditions and 57.6 MI/d under critical period conditions. Over the forecast period, no significant levels of service or additional sustainability reduction sensitivities have been identified. In the worst case, climate change may reduce average daily source-works output by 32 MI/d. This would affect abstraction from the River Wensum. The mean impact is estimated to be equivalent to a 5 MI/d reduction in average daily source-works output. Excluding the Water Framework Directive, no-deterioration and worst case climate change risks, the plan for maintaining the supply-demand balance combines source relocation with water efficiency, enhanced metering and additional leakage control. In the long-term, additional supplies will also be required.
- 3.4.28 AW has not yet published changes to long term water resource forecasts which may arise as a consequence of the findings of a recent Inquiry which identified ongoing adverse impacts to groundwater dependant European sites in the northern part of The Broads SAC and the implications of this finding for continued abstraction from a nearby major public supply borehole.
- 3.4.29 Pressure on water resources resulting in reduction in water levels or flow in streams, rivers and waterbodies would be a likely consequence of increased water demand requiring greater water abstraction from ground water or surface water. Surface water abstraction could have a direct impact upon water levels and stream flow; ground water abstraction would potentially lead to reduced flows in any watercourses which derive a significant proportion of their water from spring flow. Wetland European sites which are dependent upon a groundwater source may become too dry to support special interest features.
- 3.4.30 Water resources in the region are already under considerable pressure and it has been recently demonstrated at several sites, including Beeston Bog (a component site of the Norfolk Valley Fens SAC) and Catfield Fen (part of the Broads SAC) that the public water supply abstractions close to these sites have had a negative impact upon the flora and fauna of these groundwater-fed sites. The public supply borehole close to Beeston Bog has been relocated and that near Catfield may come under review. Abstraction at a major water supply borehole could potentially give rise to an impact upon designated groundwater dependant wetland sites up to 10km away, depending upon the depth of the borehole and the nature of the strata from which abstraction is taking place. It is assumed that the borehole might be as much as 10km from any proposed development location.
- 3.4.31 Depleted riverine flows may also result in an increased number, and severity of, saline incursion events. Ground water abstraction from near-surface aquifers can also lead to saline incursion into the aquifer resulting in damage to coastal wetland sites, which receive a proportion of their irrigating water from groundwater.
- 3.4.32 A new body, Water Resources East (WRE) has been set up to address water demand deficit. Initial results for WRE from the extensive programme of technical work were originally to have been published in Spring 2017 but are not available at the time of reporting. The results will provide a high-level indication of the vulnerabilities for each sector and reveal the areas of focus for trade-offs between sectors which could help to manage risks to reliable water supplies. More detailed results will be available later in September 2017.
- 3.4.33 The Houses of Parliament Reform of Freshwater Abstraction Post Note 546, released in January 2017 reports that the existing water abstraction system is too inflexible to meet future supply needs whilst protecting the environment and further, that proposed reforms to the abstraction system will need to include measures to better link abstraction and water availability.

3.4.34 The ongoing Review of Consents (ROC) being undertaken by the Environment Agency is likely to lead to ground water abstraction in some parts of Norfolk being reduced in the light of recent studies which have showed water deficit due to agricultural and public supply abstraction causing damage to European protected sites.

3.4.35 At the time of reporting there is considerable uncertainty as to whether water supply deficits can be addressed whilst ensuring a secure future for water-dependant SACs and therefore for the purposes of Screening, it must be assumed that the GNLP could potentially give rise to impacts upon water-dependant European sites.

Pollution impacts

Water pollution

3.4.36 Reduction of water quality, from increased discharges of sewage and surface water drainage, or from pollution incidents, either during, or after, construction has potential to impact upon riparian and wetland European sites downstream of a settlement. The types of habitat which might be sensitive to that change would depend very much upon the nature and scale of the impact.

3.4.37 It is assumed that waste water discharge from developments, including foul water discharges, would be treated, however may give rise to elevated levels of nitrates, and, depending upon whether phosphate stripping equipment is in place, phosphate, downstream of the discharge point. There is also potential for chemical spillages, or STW failure, to lead to discharge of untreated effluent.

3.4.38 The impacts of water pollution would depend entirely on the nature of the effluent or chemicals being released and whether the release is slow or sudden, but may potentially result in consequences such as fish kill, extinction of invertebrate taxa, which are more sensitive to pollution or changes in Biological Oxygen Demand (BOD), loss of taxa of water plants which require low nutrient levels or eutrophication of floodplain fen habitats. These impacts could potentially affect Annex II European designated species such as white clawed crayfish, Desmoulins whorl snail, brook lamprey or bullhead, directly or indirectly and may also result in the loss of Annex I habitats such as Ranunculion fluitantis and Callitriche-Batrachion vegetation.

Atmospheric Pollution

3.4.39 The main airborne pollutants of concern in the context of their potential to give rise to adverse impacts upon European sites are oxides of nitrogen (NO_x), ammonia (NH₃) and sulphur dioxide (SO₂).

3.4.40 The primary pollutants SO₂, NO and NO₂ are oxidised in the atmosphere to form SO₄²⁻ and NO₃⁻ respectively, while NH₃ reacts with these oxidised components to form NH₄⁺ (ammonium). These pollutants known as aerosols can travel long distances, and together with primary pollutants can be deposited in the form of wet or dry deposition⁷⁰.

3.4.41 The Air Pollution Information System (APIS) provides a useful summary of the main pollutants, the effects they have on vegetation and other features for which European sites might be designated. Concentrations and deposition of air pollutants are assessed against a range of criteria to protect both human health and the environment. Environmental criteria include critical loads⁷¹ for nitrogen deposition (kg Nitrogen ha⁻¹ year⁻¹) and acid deposition and critical levels for ammonia (µg m⁻³), sulphur dioxide (µg m⁻³), nitrogen dioxide (µg m⁻³), and ozone (ppb hours). There are some critical loads for heavy metals but these are not currently used to assess impacts. There are no critical levels or loads for other pollutants but in some cases there are other assessment criteria such as environmental quality standards (EQS) and environmental assessment levels (EAL) which are not relevant to the present study.

3.4.42 NO_x can have a directly toxic effect upon vegetation, but in addition to this, higher concentrations of NO_x or ammonia within the atmosphere will lead to greater rates of nitrogen deposition to soils, leading to an increase in soil fertility, which can have a serious deleterious effect on the

⁷⁰ <http://www.apis.ac.uk/starters-guide-air-pollution-and-pollution-sources>

⁷¹ http://www.apis.ac.uk/overview/issues/overview_Cloudslevels.htm

quality of semi-natural, nitrogen-limited terrestrial habitats. Most SAC sites are designated for the vegetation they support, and this is generally vegetation which would respond adversely to nutrient input, including increased input of Total Nitrogen. Both SO₂ and NO_x can lead to acid deposition and acidification of vegetation.

3.4.43 Housing development would be likely to give rise to increased levels of NO_x arising from increased vehicle movements. Ammonia release is generally associated with increased numbers of agricultural livestock and certain industrial processes, including the production of energy from waste, and is unlikely to arise as a direct consequence of the Great Norwich Growth Plan.

3.4.44 The table below summarises the main airborne pollutants and discusses the mechanisms by which these might potentially impact upon European sites.

Pollutant	Source	Potential effects on European sites	Significance
Sulphur Dioxide SO ₂	SO ₂ emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil, and to a lesser extent, motor vehicles.	Both wet and dry deposition of SO ₂ acidifies soils and freshwater, and consequently alters the species composition of vegetation and hence associated animal communities. Some habitats will be more at risk than others depending on soil type and buffering capacity. The significance of impacts depends on levels of deposition and the sensitivity of the habitat.	It is not anticipated that the development of the Growth Area would necessitate construction of new power-producing facilities and the demographic of local industry is unlikely to shift towards the types of processes which would result in high levels of combustion. Total SO ₂ emissions have decreased substantially in the UK since the 1980s and SO ₂ deposition is not considered to have potential to give rise to significant effects on vegetation and is not considered to be a significant factor in the context of this study
Ammonia (NH ₃)	Ammonia is released following decomposition of animal wastes. Levels will increase with expansion in numbers of livestock and certain specific industrial processes, including the production of energy from waste	Ammonia can give rise to an adverse effect on vegetation through deposition and the consequent eutrophication of vegetation, leading to changes in the species composition of vegetation and hence associated animal communities. Some habitats will be more at risk than others depending on the ability of the vegetation type to 'absorb' nutrients without adverse change taking place.	The nature of the industries associated with employment in the Greater Norwich Growth Area are as yet uncertain, but are likely to be in keeping with other local industry types: distribution, warehousing, and service industries in the B1 and B8 use classes. Significant release of NH ₃ is unlikely to arise as a direct consequence of the Great Norwich Growth Plan and is not considered to be a significant factor in the context of this study.
Nitrogen oxides (NO _x)	Nitrogen oxides (nitrates (NO ₃), nitrogen dioxide (NO ₂) and nitric acid (HNO ₃)) are produced through combustion processes. About one	Deposition of nitrogen oxides can lead to both soil and freshwater acidification. Some habitats will be more at risk than others depending on soil type and buffering capacity.	It is not anticipated that the development of the Growth Area would necessitate construction of new power-producing facilities, but domestic and commercial

Pollutant	Source	Potential effects on European sites	Significance
	quarter of the UK's emissions are from power stations, one-half from motor vehicles, and the rest from other industrial and domestic combustion processes.	Mosses, liverworts and lichens, which received their nutrients directly from the atmosphere are particularly vulnerable to elevated NOx levels and grey dune and heathland ecosystems are perhaps the most sensitive. In addition, NOx can cause eutrophication of soils and water. This alters the species composition of plant communities and hence associated animal communities. Some habitats will be more at risk than others depending on ability of the vegetation type to 'absorb' nutrients without adverse change taking place.	heating and vehicle emissions could potentially be substantial given the number of proposed homes. The significance of impacts will depend on the background level, levels of deposition and the sensitivity of the habitat. NOx contributes to total N deposition – see below.
Total Nitrogen (N)	The pollutants that contribute to nitrogen deposition derive mainly from NOx and NH3 emissions.	Species-rich plant communities with relatively high proportions of slow-growing perennial species, bryophytes and lichens are most at risk from N eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N at the expenses of slow-growing species. The eventual impacts include changes in species composition, reduction of plant diversity, loss of sensitive species and an increased rate of succession in wetland ecosystems.	The significance of impacts will depend on levels of deposition and the sensitivity of the habitat, however background levels of Total N deposition across east Norfolk and north Suffolk is typically already within the critical load range for many of the sensitive habitats in the area ⁷² and in some instances exceed the upper end of the range ⁷³ . Total N is considered to be a potential significant factor in the context of this study for developments in close proximity to European sites with nutrient sensitive vegetation.
Ozone (O ₃)	A secondary pollutant generated by photochemical reactions from NOx and volatile organic compounds (VOCs). These are mainly released by the combustion of fossil fuels. Reducing ozone pollution is believed to require action at international level to reduce levels of the	Concentrations of O3 above 40 ppb can be toxic to wildlife. Increased ozone concentrations may lead to a reduction in growth and altered species composition in seminatural plant communities.	Background levels in the region are typically below 30ppb ⁷⁴ . Significant combustion of oil and coal is unlikely to arise as a direct consequence of the Great Norwich Growth Plan and O ₃ is not considered to be a significant factor in the context of this study.

⁷² <http://www.pollutantdeposition.ceh.ac.uk/content/nitrogen-compounds>

⁷³ <http://www.apis.ac.uk/search-location>

⁷⁴ <https://uk-air.defra.gov.uk/assets/documents/reports/aqeg/aqeg-ozone-report.pdf>

Pollutant	Source	Potential effects on European sites	Significance
	precursors that form ozone.		

- 3.4.45 The distance over which additional traffic movements might give rise to emissions to air such as Nitrogen oxides NO_x which have the potential to result in adverse impact upon vegetation or water quality has not been investigated as part of the various studies carried out on the Growth Area to date, but other studies have shown that the greatest level of impact is closest to the road network and that, for NO_x, levels have fallen to the background level within 200m of the road.
- 3.4.46 A Natural England literature search study⁷⁵ into the effects of specific road transport pollutants, found that, combining evidence from two fumigation experiments and a transect study suggests that NO_x is the key phytotoxic component of exhaust emissions. While no new papers relating to roadside buffer zones were identified from recent literature, one group of researchers noted that based on their data and the literature, new road building and road expansion should avoid a buffer zone of up to 100–200m from sensitive sites, particularly those where bryophytes are an important component of habitats.
- 3.4.47 It is therefore surmised that the area affected by traffic emissions to air can be assumed to closely follow existing road corridors within the Growth Area and it is also assumed that any future road construction would be largely within the Growth Area and hence any impacts would be largely experienced within the Inner Zone.
- 3.4.48 The vegetation communities occurring within the study area and potentially at risk from atmospheric nitrogen deposition are as follows. It can be seen that dune systems are particularly vulnerable.

Habitat type (EUNIS code)	Critical load (CL) range (kgN/ha/yr)
Marine habitats	
Mid-upper saltmarshes (A2.53)	20-30
Pioneer & low-mid saltmarshes (A2.54 and A2.55)	20-30
Coastal habitats	
Shifting coastal dunes (B1.3)	10-20
Coastal stable dune grasslands (grey dunes) (B1.4)	8-15
Coastal dune heaths (B1.5)	10-20
Moist to wet dune slacks (B1.8)	10-20
Inland surface waters	
Dune slack pools (permanent oligotrophic waters) (C1.16)	10-20
Permanent dystrophic lakes, ponds and pools (C1.4)	3-10
Mire, bog and fen habitats	

⁷⁵ <https://publications.naturalengland.org.uk/file/5064684469223424>

Valley mires, poor fens and transition mires (D2)	10-15
Rich fens (D4.1)	15-30
Grasslands and tall forb habitats	
Non-Mediterranean dry acid and neutral closed grassland (E1.7)	10-15
Low and medium altitude hay meadows (E2.2) (includes floodplain grazing marsh)	20-30
<i>Molinia caerulea</i> meadows (E3.51)	15-25
Heathland, scrub & tundra	
<i>Erica tetralix</i> dominated wet heath (lowland)	10-20
Dry heaths (F4.2)	10-20
Forest habitats (general):	
Broadleaved woodland (G1)	10-20

Direct impacts

- 3.4.49 Although broad-brush strategic mapping of the Growth Area suggests some overlap between distributional alternatives and European designated sites, it is assumed that in practice there would be no direct landtake. Similarly, it is assumed that development close to the European site changing the ecological functioning of the site such as fragmenting habitats, would not occur because the housing would not be located immediately adjacent to European sites or on key corridors of wildlife movement between European sites.

3.5 European sites unlikely to be affected by recreational impacts

- 3.5.1 It is not likely that there would be a significant effect from recreational impacts on six European sites. These sites are tabulated below, and the reasons why recreational impact is considered unlikely are given in the second column.

European site	Reason for no recreational impact
Paston Great Barn SAC	Small site with no public access
Overstrand Cliffs SAC	More-or-less vertical cliff which, although open to the public, in practice is rarely walked upon
Dews Pond SAC	Small site with no public access
Southern North Sea cSAC	Offshore site with no pedestrian access and low levels of boating activity
Outer Thames Estuary SPA / pSAC extension	Offshore site with no pedestrian access and low levels of boating activity
Haisborough, Hammond and Winterton SCI	Offshore site with no pedestrian access and low levels of boating activity

3.6 European sites potentially affected by recreational impacts

3.6.1 European sites potentially affected by recreational impacts are tabulated below. Distances from development at which recreational impacts might occur are noted.

European site	Potential recreational impact
River Wensum SAC	Aquatic interest is not affected by bankside recreation and public access to the river is in any case very limited. Boating is very limited in the SAC but encouraged downstream beyond the SAC in Norwich
Norfolk Valley Fens SAC	These are a group of small scattered fens, with limited value for walking / dog walking except for very local users, and varied access arrangements and parking facilities. Those fens with public access are likely to be visited by those within 1km only.
The Broads SAC / Broadland SPA/Ramsar	<p>Many of the habitats present in the designated sites of the broads are wet or very wet and unlikely to be favoured for recreation, with public useage almost entirely restricted to well managed nature reserves which feature boat-trails, footpaths and boardwalks. Most car parks serving the Broads / Broadland are located in villages, where walking is not the prime attraction, or associated with nature reserves where visitors are well managed. Recreational impact might occur where there is a large car park providing access to habitat used by SPA birds where a nature conservation organisation is not managing the land as a nature reserve, but these locations are rare. Such localised examples might, for example include minor disturbance to bird species on Halvergate by people walking out from public car parks in Yarmouth, but such usage is restricted for the most part to long-distance walkers along the footpath and there is no access to habitats at marsh level. Other recreational impact would occur where development is within walking distance of a Broadland site, such as in adjacent or close-by villages, with, again, access being restricted to floodbank footpaths.</p> <p>The number of boats on the Broads is controlled by Broads Authority, a Competent Authority under the Habitats Regulations. Boat numbers are out of the control of the Greater Norwich Development Partnership.</p>
Breydon Water SPA / Ramsar	Although a 'coastal' site, this is not an attractive site for family recreational purposes as access requires either a boat trip or a walk from Great Yarmouth Railway Station or from public parking within the town in order to gain

	<p>access it. There are very limited circular walk opportunities, the only option including crossing and then walking alongside the busy A47 for a short distance. Walks alongside Breydon are considered to be of recreational value for locally-based users within 1km only.</p>
Great Yarmouth North Denes SPA	<p>This site has an attractive beach in association with other coastal amenities and people over 20km distant are likely to visit the area at least occasionally. Car parks, including free beach-front parking, are readily available.</p>
Winterton – Horsey Dunes SAC	<p>The site has an attractive beach and circular walk options including a long-distance trail taking in the fragile dune system, with other major attractions including the seal colony; and people over 20km distant are likely to visit at least occasionally. Car parks are readily available.</p>
Waveney and Little Ouse Valley Fens SAC	<p>The Redgrave and South Lopham Fen component of the SAC is attractive to many visitors, and visitors are actively encouraged by the landowner and site manager, Suffolk Wildlife Trust. A modest increase in visitors would be acceptable as paths through the site are routed so as to avoid vulnerable habitats. Sensitive vegetation away from the path network is in any case avoided by visitors as usually wet and uncomfortable to walk on.</p> <p>Other component fens are small, and scattered fens, with limited value for walking / dog walking except for very local users, and varied access arrangements and parking facilities. Where parking exists, there is usually a managed access scheme in place. Those fens with public access are likely to be visited by those within 1km only</p>
Redgrave and South Lopham Fen Ramsar	<p>The Redgrave and South Lopham Fen component of the SAC is attractive to many visitors, and visitors are actively encouraged by the landowner and site manager, Suffolk Wildlife Trust. A modest increase in visitors would be acceptable as paths through the site are routed so as to avoid vulnerable habitats. Sensitive vegetation away from the path network is in any case avoided by visitors as usually wet and uncomfortable to walk on.</p>
Breckland SPA / SAC	<p>Research has shown that even at honeypot sites, nesting of woodlark and nightjar continues. Modest increases in recreation are unlikely to affect these species. Nesting sites for stone-curlew are either closed for public access (heathland sites) in the nesting season, or are on farmland with no public access so</p>

	<p>disturbance would not occur. No likely recreational effect except in circumstances where a large increase in visitors to a little-disturbed part of the SPA would occur such as a large allocation adjacent to Breckland.</p> <p>Trampling of SAC vegetation is generally low, with visitors from distance often visiting a few honeypot visitor centres outside the SAC e.g. High Lodge visitor centre, West Stow Heath Country Park.</p>
Benacre to Easton Bavents SAC / SPA	<p>Despite being remote from towns and villages, and with limited parking, this site is (in the experience of the report authors) already very popular with, and vulnerable to disturbance effects from visitors travelling from Norwich and Broadland towns and villages. The visitors then use several local circular walking routes, including a long-distance trail, which take in sections of coastal reedbed, heathland and dune systems. Some increase in recreational effect could occur as a consequence of major development in the southern Broads area or from site allocations in close proximity.</p>
The Wash and North Norfolk Coast SAC	<p>The site is an attractive and accessible coast and people over 20km distant are likely to visit at least occasionally. Car parks are readily available.</p>
North Norfolk Coast SPA / SAC / Ramsar	<p>The site is a very attractive and accessible coast with a range of habitats and landscapes, and including a variety of circular walk options and a long-distance path, and people over 20km distant are likely to visit at least occasionally. Car parks are readily available.</p>

3.7 Conclusion of assessment of likely significant effect ('screening' stage)

3.7.1 It is concluded that the emerging Local Plan, with the information currently available, may be likely to have a significant effect upon one or more European sites. The Local Plan is not necessary for, or connected with, nature conservation management of European sites. It is concluded that an appropriate assessment of impacts is necessary.

4 Screening of policies

4.1 Identification of policies for further assessment

4.1.1 Not all policies in the Local Plan are likely to have a significant effect upon one or more European sites. For example, a policy which sets the proportion of affordable housing would not have a significant effect; it is assumed that the impact of housing would not vary between affordable or open-market houses.

4.2 Screening of distributional alternatives for housing

4.2.1 The distributional alternatives for housing are likely to have a significant effect on a European site, at the level of information available, and so further assessment is necessary.

4.3 Screening of other policies

4.3.1 Other policies are at an early stage of development and the GNLP asks a series of questions, for example regarding

- Definition of, and strategic planning for city centre
- Retail uses in existing locations / buildings
- Housing commitments, air quality, new hotel in the city centre
- Town centre retail policy
- Rural economy
- Mobile telephone and broadband coverage
- Urban design
- Affordable housing, care homes, caravan and houseboats,
- Climate change, air quality, flooding, environmental, landscape, energy, water

4.3.2 It is considered that these policies in themselves do not contain a pathway to create an impact on any European site and there is no firm proposal to assess.

4.3.3 Options for the maintenance or reduction of supply in employment land are of limited interest, because employment land, if not situated close to European sites where there may be a pollution impact, generally do not generate recreational pressure upon European sites.

4.3.4 Transport interventions/improvements necessary to deliver growth might impact European sites. It remains to be decided whether GNLP will identify strategic improvements required or whether these will be included in the Norwich Area Transportation Strategy. There are currently no proposals which can be assessed but any proposal may become apparent as the plan progresses.

4.4 Screening of policies in combination with each other

4.4.1 Analysis of any policies having additive or subtractive cumulative impacts. At this stage of policy development there are no known cumulative impacts.

4.5 Screening of the Local Plan in combination with other Plans

4.5.1 A key requirement of the Habitats Regulations is to determine whether the Plan is likely to have a significant effect when considered in combination with other plans and projects. This ensures that the cumulative effects of incremental impacts, whose effects may not be significant when individually assessed, are appropriately assessed where there is potential for significant cumulative impacts.

4.5.2 This element of the assessment is particularly relevant where there are likely to be indirect effects from other developments within Norfolk and north Suffolk, such as those resulting from visitor pressure on European sites, emissions to air, waste water discharges, and the effects of increased demand on water resources. This report has identified the potential for such effects and the

precautionary approach requires that these are assessed in combination with the effects of development proposals for adjoining local authority areas.

4.5.3 For the purpose of screening therefore, it is necessary to consider the effects of the Plan in combination with Adopted and Emerging Local Plans which will determine the scale and location in Breckland, North Norfolk, Waveney and Great Yarmouth. In these areas, the effects of existing urban areas may already be an issue and there is therefore potential for adverse effects on European sites to arise in combination with the effects of the Greater Norwich Local Plan.

4.5.4 The GNLP assessment therefore requires consideration in combination with the following Plans:

- Breckland Core Strategy and Development Management Policies 2009 and emerging Local Plan
- Breckland Site Specific Policies and Proposals Development Plan Document 2012
- Great Yarmouth Local Plan Core Strategy 2015 and emerging Local Plan Part 2
- North Norfolk Core Strategy (adopted 2008) and emerging Local Plan
- The Waveney Core Strategy Development Plan Document (adopted 2009) and Development Management Policies (adopted 2011) and emerging Local Plan

4.5.5 Potential significant effects of the GNLP in combination with these plans include the following:

- Impacts resulting from in-combination effects associated with water abstraction on internationally designated wetland sites;
- Water quality impacts resulting from in-combination effects associated with waste water discharges on internationally designated wetland sites;
- Air quality impacts associated with increased traffic generation resulting from development on internationally designated sites that support vegetation sensitive to NO_x, SO₂ or total Nitrogen;
- Increased disturbance and visitor pressure resulting from in-combination effects on the wetland, grassland/heathland and coastal sites.

4.5.6 It is not likely that there will be a significant in-combination effect due to the scale and location of proposed development within the Mid Suffolk Local Plan, as this district is more rural in character, and because of the intervening distance between the proposed strategic growth locations and the administrative boundary with South Norfolk.

4.5.7 Similarly, it is not considered that there will be a significant in-combination effect due to the scale and location of proposed development within the Borough Council of King's Lynn & West Norfolk, Suffolk Coastal District Council, West Suffolk Council (Forest Heath District Council and St Edmundsbury Borough Council), South Holland District Council, Boston Borough Council, or East Lindsey District Council.

4.5.8 In relation to the Broads area, there are no proposed site allocations and it is therefore unlikely there will be a significant in-combination effect as a result of development within the Broads Authority's administrative area.

4.6 Structure of the Appropriate assessment

4.6.1 Chapter 5 of this assessment provides further detailed assessment of each policy or option at a level appropriate to the stage of the plan. Potential adverse impacts are identified, and mitigation to remove those adverse impacts is given where appropriate.

4.7 Potential mitigation

4.7.1 Likely impacts upon European sites that might result from the proposed growth have been considered and potential mitigation measures to prevent them, have been provided. However, it should be borne in mind that this is an early stage of assessment, and there will inevitably be changes as further detail of the emerging GNLP becomes available. Such measures are:

- Locating strategic growth areas to maximise the distance between these growth areas and water-sensitive internationally designated sites, such as the River Wensum SAC, the Broads SAC and the Norfolk Valley Fens SAC.
- Locating strategic growth areas to maximise the distance between these sites and recreational pressure-sensitive designated sites, such as Winterton-Horsey Dunes SAC.
- To prevent increased urbanisation of the countryside, ensure there is minimal new vehicular access to European sites from development, and ensure a minimum 1km offset of new development from European sites.
- To alleviate recreational pressure on European sites alternative recreational opportunities should be provided. This could take the form of a new country park containing woodland, small and large waterbodies (where feasible and subject to aircraft safeguarding constraints, open grassland or potentially inland beach functions (if feasible) nearer the strategic development sites. Country Park facilities are already planned for an area north-east of Norwich and will alleviate recreational pressure from currently-planned growth in the east, north-east and northern sectors of the Norwich urban fringe. Additional or extended Country Park facilities are likely to be needed to alleviate additional recreational pressure from additional growth planned in the Greater Norwich Local Plan.
- To alleviate recreational pressure at specific recreation-sensitive European sites, discuss site-specific issues and agree mitigation requirements for that European site with Natural England and other conservation stakeholders, including RSPB, Norfolk Wildlife Trust and the National Trust (depending upon interest feature and land ownership). Mitigation may potentially include requirement for funding for relocation of parking, signage or wardening etc. Requirement for mitigation is likely to be dependent upon the specific interest features of the European site and proximity to that site (refer to Appendix 2) and also proportionate to the scale of development and predicted increase in visitors from new residents of the Growth Area, relative to other visitors (visitors from outside Norwich City, and day visitors from outside Norfolk).

4.8 Recommendations for further study

- 4.8.1 In reviewing the evidence base surrounding the relevant local planning authority documents, and in considering the potential impacts and cumulative impacts that may affect European sites, the need for an up to date Water Cycle Study has been identified. This would identify the location, type and volume of water abstraction required to supply planned new development or other water source if appropriate and take into account the findings of recent studies and any updates to groundwater modelling.

5 Assessment of the seven distributional housing alternatives

5.1 Introduction

- 5.1.1 The potential impacts of housing in zones of 1km, 8km and 20km of European sites is discussed in sections 3.2 and 3.4 above. Figure 02 shows zones of influence around European sites and Figure 03 to Figure 07 shows the diagrammatic representations of the distributional alternatives in relation to those zones of influence. The zones of influence merge, so that although 1km zones around European sites are readily visible, most of the Greater Norwich area is within 8km of one or more European sites and all is within 20km of a European site. The only part of Greater Norwich over 8km from any European sites is an area in the south, including from Spooner Row south to Dickleburgh and Harleston, and eastwards to the Suffolk border near Bungay. Superficially, the impact on European sites would be least if development was focussed in this area. However, the impact zones used in this manner are a blunt instrument, and impacts can vary, for example recreational impacts will not occur within 8km of a European site with no public access and water resources issues will not affect a European site if it is not water-dependent or situated in a different water catchment.
- 5.1.2 In discussing recreational impacts, it is also assumed that new allocations will be provided with recreational green space to standard local authority requirements.
- 5.1.3 Figure 08 shows a 20km zone of influence measured from popular coastal European sites. This largely includes the northern and eastern parts of Greater Norwich. Figure 09 shows the location of car parks that can be used to access European sites, based on local knowledge and an inspection of 1:25,000 OS maps. This mapping may not be fully comprehensive: for example it does not include laybys, roadside parking at village greens, and other locations where informal parking occurs.

5.2 Assessment of growth common to all options

- 5.2.1 Growth is proposed which is common to all options, i.e. it is proposed to be allocated within the Local Plan together with one of the options below. This growth:
- maximises delivery on previously developed land within Norwich and the built-up areas of the fringe parishes (1,700 homes);
 - maintains and enhances the vitality of smaller settlements by ensuring a minimum level of growth in main towns and key service centres (1,000 homes), service villages (1,000 homes) and other villages (200 homes), some of which may be on previously developed land;

Recreational impact

- 5.2.2 Delivery within Norwich and the built-up areas of the fringe parishes (Colney, Costessey, Cringleford, Trowse, Thorpe St Andrew, Sprowston, Old Catton, Hellesdon, Drayton and Taverham and the remainder of the Growth Triangle) would be outside the theoretical zones of influence of European sites potentially affected by recreational impact. However, the scale of growth and the attractiveness of these 'honeypot' sites is such that there are likely to be a number of visits made to coastal European sites,
- 5.2.3 Growth in main towns (Aylsham, Diss, Harleston and Wymondham) would be outside the theoretical zones of influence of European sites potentially affected by recreational impact. However, the scale of growth and the attractiveness of these 'honeypot' sites is such that there are likely to be a number of visits made to coastal European sites,
- 5.2.4 Growth in key service centres, service villages and other villages includes growth in locations which could be adjacent or within 1km walking distance of The Broads / Broadland European sites, for example at Acle, Blofield, Brundall, Loddon/Chedgrave, Wroxham, Cantley, Coltishall, Reedham, Salhouse, Halvergate, Postwick with Witton, Strumpshaw. This growth could potentially have an impact on The Broads / Broadland European sites dependent upon the exact location of the allocation and the availability of alternative recreation facilities. Growth could also be close to other European sites and the scale of that growth is currently unknown, leading to

potential impacts. At this stage the amount of growth relative to sensitive locations is unclear. Growth in key service centres, service villages and other villages is generally further than the 20km theoretical zones of influence of European sites potentially affected by recreational impact. However, the scale of growth and the attractiveness of these 'honeypot' sites is such that there are likely to be a number of visits made to coastal European sites. 20km from coastal European sites but the scale of growth is that there is likely to be a number of occasional visits made to coastal European sites potentially resulting in impact.

5.3 Assessment of option 1 - Urban concentration close to Norwich

5.3.1 This option would concentrate all 5,000 additional dwellings close to Norwich in the form of urban extensions or in some of the closest villages. To deliver this option the number of additional dwellings might be distributed as:

- around 1,000 in the Broadland Growth Triangle
- around 1,000 in the north-west fringe parishes of Horsford, Taverham, Drayton and Hellesdon
- around 1,000 in the western fringe
- around 1,500 in South West parishes of Cringleford, Little Melton and Hethersett;
- around 500 in distributed among smaller villages or villages slightly more distant such as Horsham St. Faith, Spixworth, Poringland, Swardeston, and Mulbarton.

5.3.2 Figure 03 shows the distributional alternative in relation to European sites. The urban concentration close to Norwich contains within its boundaries part of River Wensum SAC and parts of The Broads SAC / Broadland Ramsar/SPA. As an initial sift, it is assumed that housing allocations would not be made within 1km of these areas to avoid urbanisation issues, access issues and air quality impacts although at a detailed site level there may be barriers such as railway lines, major roads or watercourses which reduce problems arising from urbanisation and public access. It is also further than 20km from popular coastal recreation sites which are European sites, so there would be additional but occasional use of coastal European sites.

Recreational impact

5.3.3 The 3500 dwellings that could be located on the north-west, west and south-west margins of Norwich down to Wymondham are situated so that it would not be an easy drive for regular recreational visits to the Broads / Broadland European sites thus suggesting that a recreational impact would not occur here. The 1000 dwellings that could be located to the north-east of Norwich are marginally outside the 20km zone of influence of the popular coastal European sites and over 1km from The Broads / Broadland sites. Occasional trips are likely to be undertaken to the north Norfolk and eastern coastal sites, with a potential impact, but an impact on the Broads / Broadland is unlikely.

5.3.4 The smaller villages are outside 1km buffer zones from European sites.

5.3.5 Detailed locations for growth would need to take into account the accessible European sites within 8km, which in practice means the location of car parks for European site access. European sites within 8km include parts of Norfolk Valley Fens SAC, River Wensum SAC and parts of The Broads SAC / Broadland Ramsar/SPA. The River Wensum SAC is generally less vulnerable to recreational impact, and riverside walks along footpaths generally would not affect features qualifying the site for its designation. There are several car parks that could be used for access to River Wensum SAC. The parts of Norfolk Valley Fens SAC within 8km generally are small wetlands with variable access arrangements and, even if rights of way are present, are unlikely to attract many visitors such as regular dog walkers. There are car parks at Reepham and Marsham which might provide access to the Norfolk Valley Fens, but at no other parts of that SAC within 8km. Likewise, Broads / Broadland car park access is generally well managed and there are a number of accessible car parks in the zone of influence in areas already managed for public access.

5.3.6 Impacts from increases in regular recreational use of European sites (for example, Broads sites, Norfolk Valley Fens, River Wensum) as greenspace would be low, although there remains the

possibility of increased (but not necessarily regular) visits to popular coastal European sites thus increasing visitor pressure in those locations. To reduce the demand for visits to coastal sites, Country Park facilities extended or additional to the current proposed Country Park (Section 4.7) would be needed. This would be located so that it is more easily accessible than the coast to residents of proposed growth in this option.

- 5.3.7 The recent River Wensum Draft Strategy (July 2017) by River Wensum strategy partnership, which is downstream of River Wensum SAC, includes an increase in accessibility and recreation to the river in and around Norwich. This will also contribute to reducing demand for recreation on European sites.

Water cycle impact

- 5.3.8 Allocations in this area, if selected, would need to be accompanied by a water cycle study to demonstrate no harm to the water environment of European sites, in relation to water abstraction and to waste water both in isolation and in combination with other development.

5.4 Assessment of option 2 – transport corridors

- 5.4.1 This Option would concentrate most of the additional 5,000 dwellings in the main transport corridors. There is a degree of overlap with Option 1 as urban fringe locations tend to be well served by transport corridors. To deliver this option the number of additional dwellings might be distributed as:

- around 1,000 in the Broadland Growth Triangle;
- around 200 in the north-west fringe parishes of Horsford, Taverham, Drayton and Hellesdon;
- around 500 in the A47/Dereham Rd corridor (West fringe);
- around 1,500 in A11 corridor (South West fringe parishes of Cringleford, Little Melton and Hetherset; and Wymondham);
- around 800 on the A140(S) in Diss and the villages on the A140 (other than Long Stratton where there are significant constraints to growth beyond current commitments);
- a new settlement on one of the main corridors delivering around 1000 dwellings in the plan period. It would be expected to grow significantly after 2036 with the final scale dependent on the characteristics of the location and access to services;

- 5.4.2 It is assumed that there would be no growth above baseline on the A47(E) reflecting proximity to the Broads and significant existing commitments.

- 5.4.3 Figure 04 shows the distributional alternative in relation to European sites. The transport corridors contain within its boundaries part of River Wensum SAC, parts of The Broads SAC / Broadland Ramsar/SPA and parts of Norfolk Valley Fens SAC. As an initial sift it is assumed that housing allocations would not be made within 1km of these areas to avoid urbanisation issues, access issues and air quality impacts although at a detailed site level there may be barriers such as railway lines, major roads and watercourses, which reduce urbanisation and access problems.

Recreational impact

- 5.4.4 The 2200 dwellings that could be located on the north-west, west and south-west margins of Norwich down to Wymondham are situated so that it would not be an easy drive for regular recreational visits to the Broads / Broadland European sites thus suggesting that a recreational impact would not occur.

- 5.4.5 The 1000 dwellings that could be located to the north-east of Norwich are marginally outside the 20km zone of influence of the popular coastal European sites and over 1km from The Broads / Broadland sites. Broads sites are unlikely to be affected by increases in recreation; access to Broads sites is limited except at well-managed sites such as nature reserves.

- 5.4.6 Distribution of 800 dwellings in Diss and A140 villages would be suitable locations, outside the 1km buffer for European sites. There are no parts of Norfolk Valley Fens with car parks in the

8km zone of influence around the A140 and A11 allocations. Redgrave and South Lopham Fens Ramsar, and Waveney-Little Ouse Valley Fens SAC, are close to Diss, but parts open to visitors are managed to attract visitors and have capacity for modest increases.

- 5.4.7 A new settlement in one of the transport corridors would have variable impact on European sites, depending on the location within the transport corridors chosen. If it were on the A140 north of Norwich, for example, it would bring development closer to the north Norfolk coast and potentially within the 20km zone of influence, thus causing a more significant increase in visitor pressure. A new settlement on the A47 (E) is ruled out and a new settlement on the A1151 (north-east) is not possible as the land is already occupied by the Broadland growth triangle. This leaves a new settlement to be on the A140 (S) in addition to the Diss and other villages allocations, A47 (W) beyond the western fringe of the urban area, or on the A11 (S) in addition to the 1500 already considered.
- 5.4.8 Transport corridors contain a small area of land in the south of the Greater Norwich area, around Spooner Row which is outside 8km from any European site. The allocation of housing in that area would avoid recreational impacts on any European sites. For example, it would be suitable for a new settlement in the A11 corridor.
- 5.4.9 Occasional trips are likely to be undertaken to the north Norfolk coast European sites. To reduce the demand for visits to coastal sites, Country Park facilities extended or additional to the current proposed Country Park (Section 4.7) would be needed. This would need to be located so that it is more easily accessible than the coast to residents of proposed growth in this option.
- 5.4.10 The recent River Wensum Draft Strategy (July 2017) by River Wensum strategy partnership, which is downstream of River Wensum SAC, includes an increase in accessibility and recreation to the river in and around Norwich. This will also contribute to reducing demand for recreation on European sites for allocations around Norwich.

Water cycle impact

- 5.4.11 Allocations in this area, if selected, would need to be accompanied by a water cycle study to demonstrate no harm to the water environment of European sites, in relation to water abstraction and to waste water both in isolation and in combination with other development.

5.5 Assessment of option 3 – Cambridge – Norwich tech corridor

- 5.5.1 To deliver this option the 5,000 additional dwellings could be distributed as:
- around 300 in the north-west fringe parishes of Horsford, Taverham, Drayton and Hellesdon providing a degree of growth in part of the Broadland urban fringe;
 - around 1,000 in the West fringe – which lies between the Norwich Research Park and the Food Enterprise Zone (FEZ) area;
 - around 1,500 in existing settlements on the A11 corridor (South West fringe parishes of Cringleford, Little Melton and Hetherset; and Wymondham);
 - a new settlement in the A11 corridor delivering around 1000 dwellings in the plan period. It would be expected to grow significantly after 2036 with the final scale dependent on the characteristics of the location and access to services;
 - around 200 at Hingham which is a key service centre reasonably close to the A11 corridor and with some history of tech industries;
 - around 500 in Diss and nearby villages
- 5.5.2 Figure 05 shows the distributional alternative in relation to European sites. The Cambridge to Norwich tech corridor contains within the Greater Norwich boundaries part of River Wensum SAC, and no other European sites. As an initial sift it is assumed that housing allocations would not be made within 1km of these areas to avoid urbanisation issues, access issues and air quality impacts although at a detailed site level there may be barriers such as railway lines, major roads and watercourses which reduce urbanisation and access problems. The Norwich to Cambridge tech corridor is outside the 20km buffer from popular coastal European sites.

Recreational impact

- 5.5.3 The 2800 dwellings that could be on the north-west, west and south-west margins of Norwich down to Wymondham are situated so that it would not be an easy drive for regular recreational visits to the Broads / Broadland European sites thus suggesting that a large recreational impact would not occur.
- 5.5.4 The Cambridge – Norwich tech corridor contains a small area of land in the south of Greater Norwich, around Spooner Row which is outside 8km from any European site. The allocation of housing in that area would avoid recreational impacts on any European sites. For example, it would be suitable for the new settlement in the A11 corridor. Much of the central and southern portion of the Cambridge-Norwich tech corridor is in the 8km buffer zone from River Wensum SAC and parts of Norfolk Valley Fens SAC only. The River Wensum SAC is generally less vulnerable to recreational impact, and riverside walks along footpaths generally would not affect features qualifying the site for its designation. There are several car parks that could be used for access to River Wensum SAC. The parts of Norfolk Valley Fens SAC within 8km generally are small wetlands with variable access arrangements and, even if rights of way are present, are unlikely to attract many visitors such as regular dog walkers. There are no car parks associated with Norfolk Valley Fens sites within the 8km zone of influence.
- 5.5.5 Distribution of 700 dwellings in Diss (and villages) and Hingham would be suitable locations, outside the 1km buffer for European sites. Redgrave and South Lopham Fens Ramsar, and Waveney-Little Ouse Valley Fens SAC lie close to Diss, but those parts which are open to visitors are managed to attract visitors and have capacity for modest increases.
- 5.5.6 Occasional trips are likely to be undertaken to the north Norfolk coast European sites from this option. To reduce the demand for visits to coastal sites, Country Park facilities extended or additional to the current proposed Country Park (Section 4.7) would be needed. This would need to be located so that it is more easily accessible than the coast to residents of proposed growth in this option.
- 5.5.7 This distributional alternative, especially the central and southern parts, is a strong candidate for development which would have minimal impact upon European sites.

Water cycle impact

- 5.5.8 Allocations in this area, if selected, would need to be accompanied by a water cycle study to demonstrate no harm to the water environment of European sites, in relation to water abstraction and to waste water both in isolation and in combination with other development.

5.6 Assessment of options 4 and 5 -Dispersal, and Dispersal with a new settlement

5.6.1 To deliver option 4, the 5,000 additional dwellings could be distributed as:

- around 300 in the north and north-west fringe parishes of Horsham and Newton St Faiths, Horsford, Taverham, Drayton and Hellesdon. Providing a degree of growth in part of the Broadland urban fringe;
- around 500 dwellings in the west fringe;
- around 500 in existing settlements on the A11 corridor (South West fringe parishes of Cringleford, Little Melton and Hetherset; and Wymondham);
- around 400 distributed across 4 towns/KSCs in South Norfolk (Diss, Harleston, Hingham and Loddon);
- 3,300 additional dwellings in Service and Other Villages (making a total of 4,500 in these settlements). The distribution of growth between these villages would be dependent on a range of factors including availability of sites, location, access to services, and deliverability

5.6.2 To deliver option 5, the 5,000 additional dwellings could be similarly distributed but with 1000 dwellings removed from Service and Other Villages and reallocated to a new settlement somewhere in the area delivering around 1000 dwellings in the plan period. It would be expected to grow significantly after 2036 with the final scale dependent on the characteristics of the location and access to services.

5.6.3 These options are shown in Figure 06, with the dispersal option indicatively shown, but the location of a new settlement not shown as it could be anywhere in the Greater Norwich area. Assessment of these options is difficult, as the allocation of housing to Service and Other Villages across the area means that housing could be allocated almost anywhere in the Plan Area. Basic assumptions are that housing allocations would not be made within 1km of these areas to avoid urbanisation issues, access issues and air quality impacts although at a detailed site level there may be barriers such as railway lines, major roads or watercourses which reduce urbanisation and access problems. The options are partly outside and partly inside the 20km buffer from popular coastal European sites.

Recreational impacts

5.6.4 Recreational impacts are hard to assess, as much of the housing could be almost anywhere in the Greater Norwich area. Dispersal could result in housing allocations close to European sites being lower in number than other options, as some of the housing could be elsewhere in Greater Norwich. Alternatively, it could result in a higher likelihood of at least some of the allocations being within 8km of more sensitive European sites, as the dispersed nature of the options means that at least some are likely to be within 8km of a European site. With a large number of smaller allocations it may prove difficult to provide the economies of scale for a sufficiently large greenspace offering features which might attract people away from the coast.

5.6.5 The 1300 dwellings situated to the north, north-west, west and south-west of Norwich would be located such that it would not be an easy drive for regular recreational visits to the Broads / Broadland European sites, thus suggesting that a large recreational impact would not occur.

5.6.6 Distribution of 400 dwellings in Diss, Harleston and Hingham would be suitable locations, outside the 1km buffer for European sites. Redgrave and South Lopham Fens Ramsar is close to Diss, but is managed to attract visitors and has capacity for modest increases. Loddon is within the 1km buffer of the Broads / Broadland sites and connected to these by a public right of way, so appears unsuitable for a housing allocation.

5.6.7 Growth in key service centres, service villages and other villages includes growth in locations adjacent or within 1km walking distance of The Broads / Broadland European sites, for example at Acle, Blofield, Brundall, Loddon/Chedgrave, Wroxham, Cantley, Coltishall, Reedham, Salhouse, Halvergate, Postwick with Witton, Strumpshaw. This growth could potentially have an impact on

The Broads / Broadland European sites dependent upon the exact location of the allocation and the availability of alternative recreation facilities. At this stage the amount of growth is unclear for the sensitive locations. Growth in key service centres, service villages and other villages is generally further than 20km from coastal European sites but the scale of growth is that there is likely to be a number of occasional visits made to coastal European sites potentially resulting in impact.

5.6.8 Occasional trips are likely to be undertaken to the north Norfolk coast European sites from any locations of growth. To reduce the demand for visits to coastal sites, Country Park facilities extended or additional to the current proposed Country Park (Section 4.7) would be needed. This would need to be located so that it is more easily accessible than the coast to residents of proposed growth in these options.

5.6.9 A new settlement could be in any part of Greater Norwich, respecting the basic assumptions and requiring assessment of recreational impacts and possibly necessitating the provision of a sufficiently large Country Park-type facility sufficient to attract people away from the coast. If the new settlement were to be in the southern part of Greater Norwich, outside the 8km buffer zone for European sites and outside the 20km buffer zone for coastal European sites, the mitigation requirement would be reduced.

Water cycle impact

5.6.10 Allocations in this area, if selected, would need to be accompanied by a water cycle study to demonstrate no harm to the water environment of European sites, in relation to water abstraction and to waste water both in isolation and in combination with other development.

5.7 Assessment of options 6 and 7 -Dispersal plus urban growth, and Dispersal plus urban growth and a new settlement

5.7.1 Option 6 would be similar to Option 5 but would locate more growth in the urban fringe (within the Broadland growth triangle) rather than in a new settlement. To deliver this option the 5,000 additional dwellings could be distributed as:

- around 1,000 in the Broadland Growth Triangle;
- around 300 in the north and north-west fringe parishes of Horsham and Newton St Faiths, Horsford, Taverham, Drayton and Hellesdon. Providing a degree of growth in part of the Broadland urban fringe;
- around 500 dwellings in the west fringe;
- around 500 in existing settlements on the A11 corridor (South West fringe parishes of Cringleford, Little Melton and Hetherset; and Wymondham);
- around 400 distributed across 4 towns/KSCs in South Norfolk (Diss, Harleston, Hingham and Loddon);
- 2,300 additional dwellings in Service and Other Villages (making a total of 3,500 in these settlements). The distribution of growth between these villages would be dependent on a range of factors including availability of sites, location, access to services, and deliverability

5.7.2 To deliver option 7, the 5,000 additional dwellings could be similarly distributed but with 1000 dwellings removed from Service and Other Villages and reallocated to a new settlement somewhere in the area delivering around 1000 dwellings in the plan period. It would be expected to grow significantly after 2036 with the final scale dependent on the characteristics of the location and access to services.

5.7.3 These options are shown in Figure 07, with the dispersal option indicatively shown, but the location of a new settlement not shown as it could be anywhere in the Greater Norwich area. Urban growth would be similar to Option 1, but with lesser amounts of housing.

5.7.4 Assessment of these options is difficult, as the allocation of housing to existing settlements across the area means that housing could be allocated almost anywhere in the Plan Area. Basic

assumptions are that housing allocations would not be made within 1km of these areas to avoid urbanisation issues, access issues and air quality impacts although at a detailed site level there may be barriers such as railway lines, major roads and watercourses which reduce urbanisation and access problems. The options are partly outside and partly inside the 20km buffer from popular coastal European sites.

Recreational impacts

- 5.7.5 The 1300 dwellings that could be on the north, north-west, west and south-west of Norwich would be situated such that it would not be an easy drive for regular recreational visits to the Broads / Broadland European sites, thus suggesting that a recreational impact would not occur. The 1000 dwellings proposed for the north-east of Norwich are marginally outside the 20km zone of influence of the popular coastal European sites and over 1km from The Broads / Broadland. Occasional trips are likely to be undertaken to the north Norfolk coast European sites.
- 5.7.6 There are no car parks in the 8km zone of influence for Norfolk Valley Fens SAC.
- 5.7.7 Distribution of 400 dwellings in Diss, Harleston and Hingham would be suitable locations, outside the 1km buffer for European sites. Redgrave and South Lopham Fens Ramsar is close to Diss, but is managed to attract visitors and has capacity for modest increases. Loddon is within the 1km buffer of the Broads / Broadland sites and connected by a public right of way, so appears unsuitable for a housing allocation.
- 5.7.8 Growth in key service centres, service villages and other villages includes growth in locations which could be adjacent or within 1km walking distance of The Broads / Broadland European sites, for example at Acle, Blofield, Brundall, Loddon/Chedgrave, Wroxham, Cantley, Coltishall, Reedham, Salhouse, Halvergate, Postwick with Witton, Strumpshaw. This growth could potentially have an impact on The Broads / Broadland European sites dependent upon the exact location of the allocation and the availability of alternative recreation facilities. At this stage the amount of growth is unclear for the sensitive locations. Growth in key service centres, service villages and other villages is generally further than 20km from coastal European sites but the scale of growth is that there is likely to be a number of occasional visits made to coastal European sites potentially resulting in impact.
- 5.7.9 To reduce the demand for visits to coastal sites from any of these options, Country Park facilities extended or additional to the current proposed Country Park (Section 4.7) would be needed. This would need to be located so that it is more easily accessible than the coast to residents of proposed growth in these options.
- 5.7.10 A new settlement could be in any part of Greater Norwich, respecting the basic assumptions and requiring assessment of recreational impacts and possibly necessitating the provision of a sufficiently large greenspace with water sufficient to attract people away from the coast. If the new settlement were to be in the south of Greater Norwich, outside the 8km buffer zones, for European sites and outside the 20km buffer zone for coastal European sites, the mitigation requirement would be reduced.

Water cycle impact

- 5.7.11 Allocations in this area, if selected, would need to be accompanied by a water cycle study to demonstrate no harm to the water environment of European sites, in relation to water abstraction and to waste water both in isolation and in combination with other development.

Summary

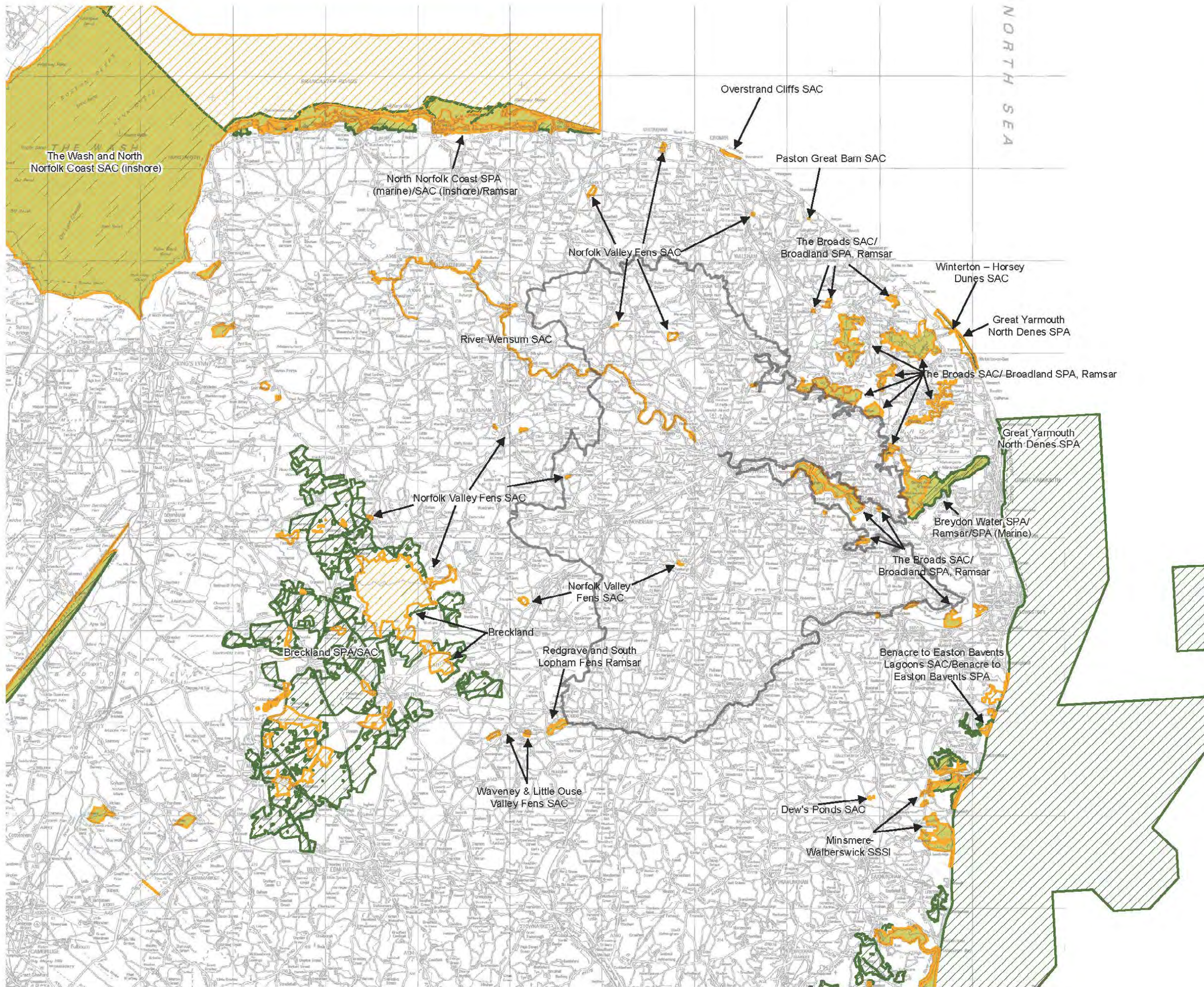
- 5.7.12 A summary table of impacts of reach growth option is included in Appendix 1.

6 Consultations

6.1 Consultations carried out and summary of responses

- 6.1.1 The Habitats Regulations Assessment of Greater Norwich Local Plan is subject to consultation with the public, including key stakeholders such as nature conservation bodies, and with Natural England as the statutory consultee. Comments are welcomed and revisions may be made to later versions of the Habitats Regulations Assessment as a result.

Figures



Key

-  Greater Norwich Boundary
-  Special Areas of Conservation
-  Special Protection Areas
-  RAMSAR

E16845 Greater Norwich Local Plan

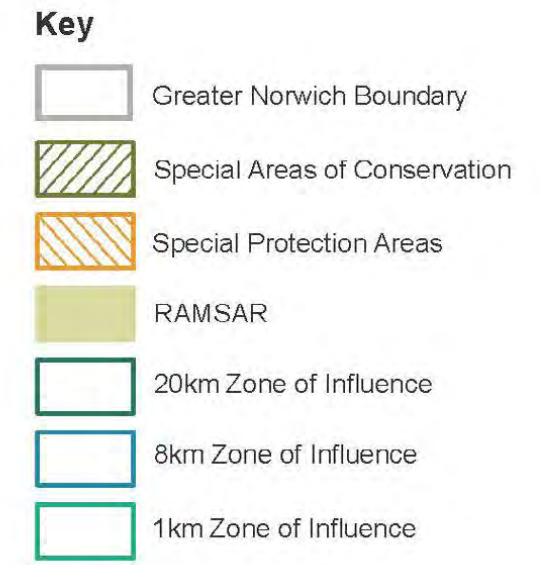
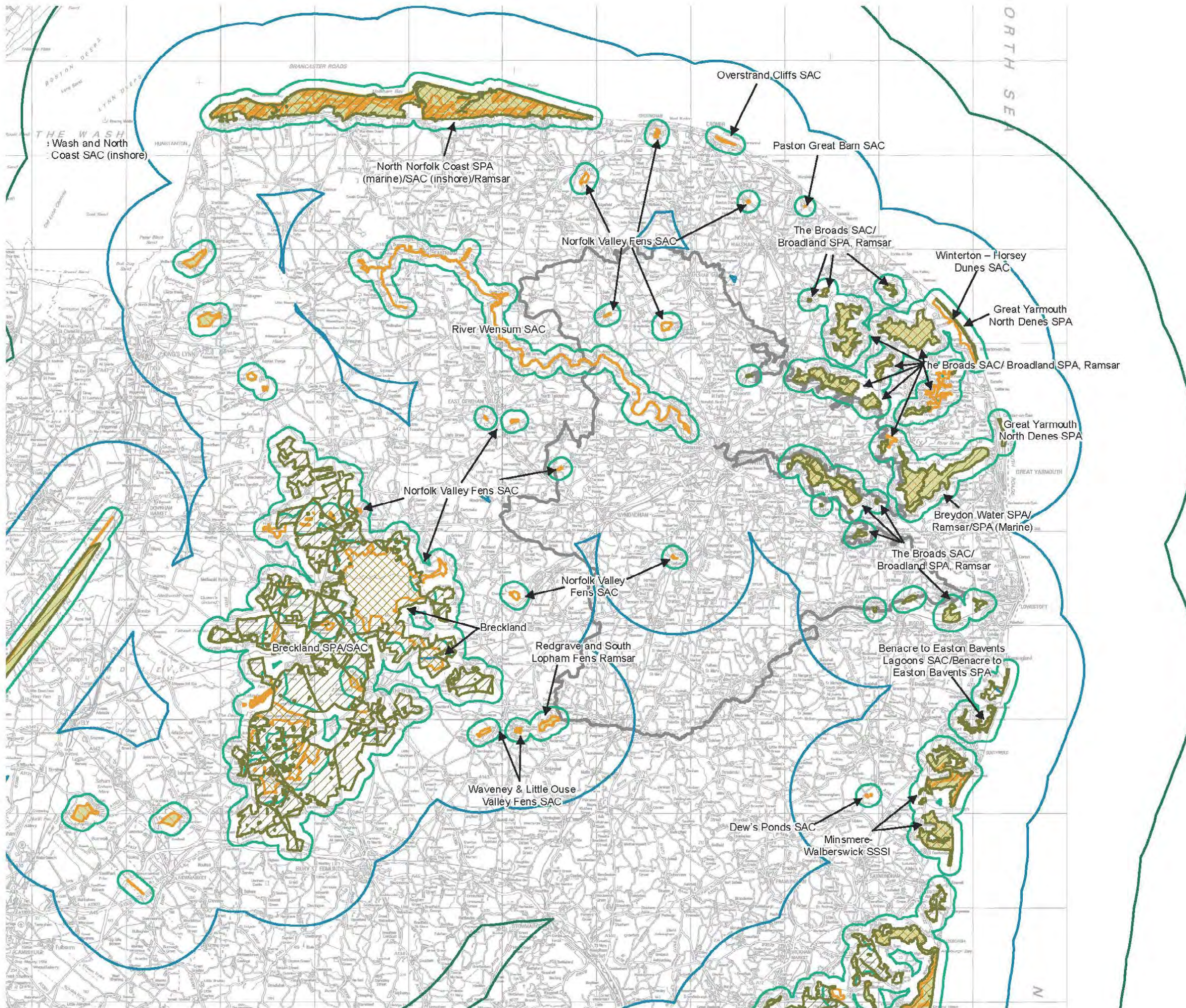
European site locations

Figure 01

Scale 1:400,000 @ A3

August 2017





E16845 Greater Norwich Local Plan

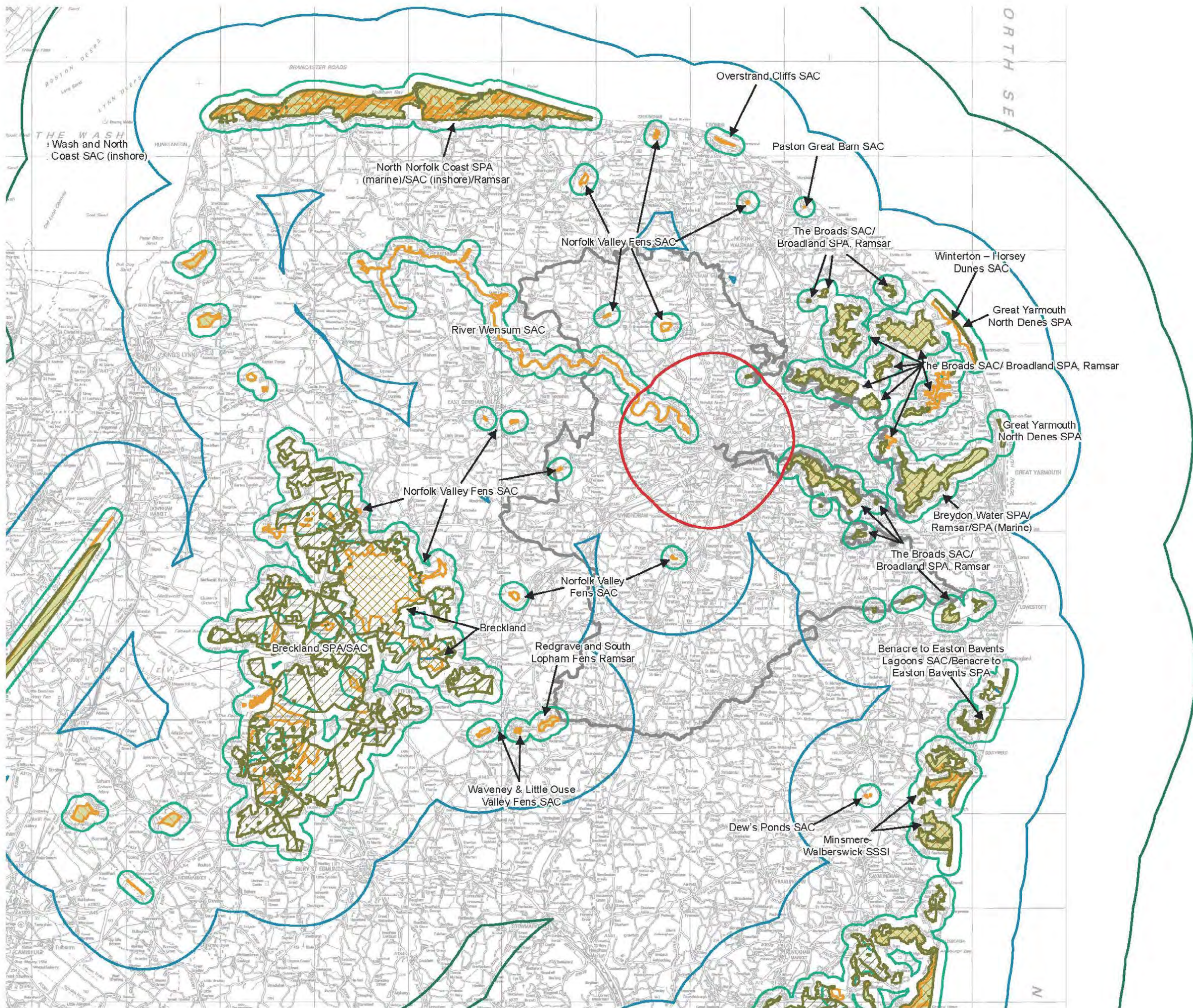
European site locations with zone of influence

Figure 02

Scale 1: 400,000 @ A3

August 2017





- Key**
-  Greater Norwich Boundary
 -  Special Areas of Conservation
 -  Special Protection Areas
 -  RAMSAR
 -  20km Zone of Influence
 -  8km Zone of Influence
 -  1km Zone of Influence
 -  Urban concentration area

E16845 Greater Norwich Local Plan

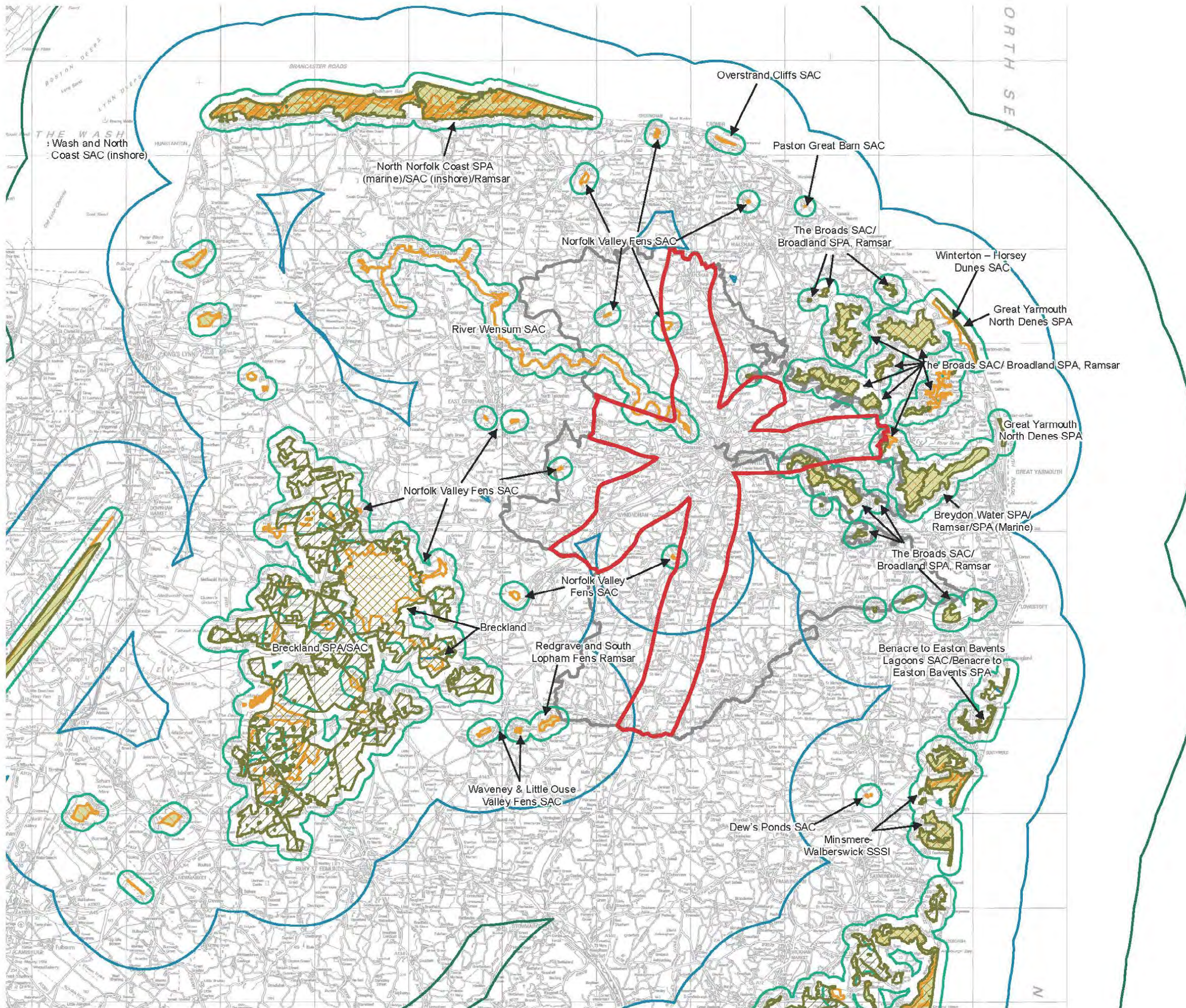
Option 1 - Urban Concentration (Close to Norwich)

Figure 03

Scale 1:400,000 @A3

August 2017





- Key**
-  Greater Norwich Boundary
 -  Special Areas of Conservation
 -  Special Protection Areas
 -  RAMSAR
 -  20km Zone of Influence
 -  8km Zone of Influence
 -  1km Zone of Influence
 -  Transport corridor

E16845 Greater Norwich Local Plan

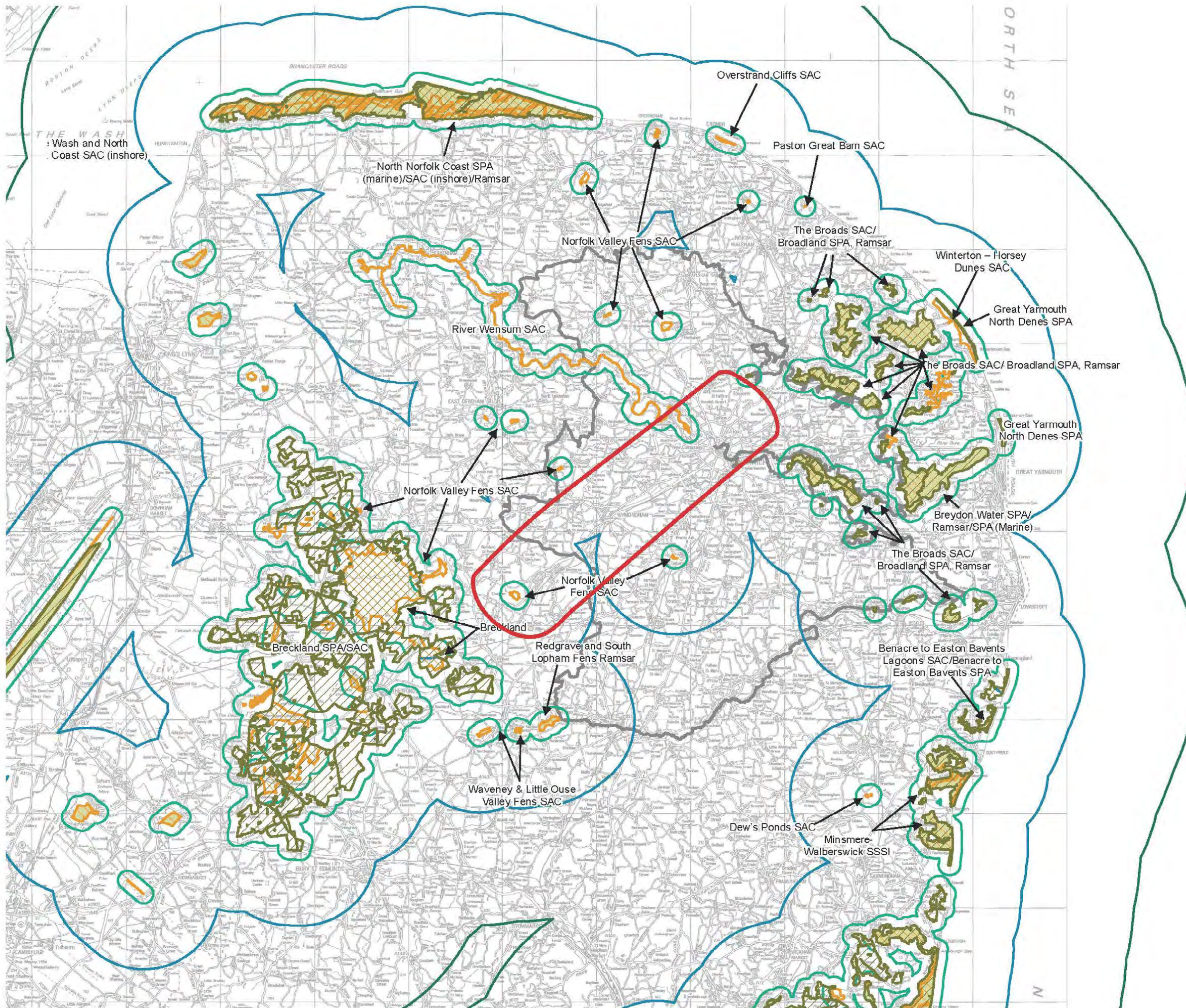
Option 2 - Transport Corridors

Figure 04



Scale 1:400,000 @A3

August 2017





Key

-  Greater Norwich Boundary
-  Special Areas of Conservation
-  Special Protection Areas
-  RAMSAR
-  20km Zone of Influence
-  8km Zone of Influence
-  1km Zone of Influence
-  Cambridge - Norwich Tech corridor

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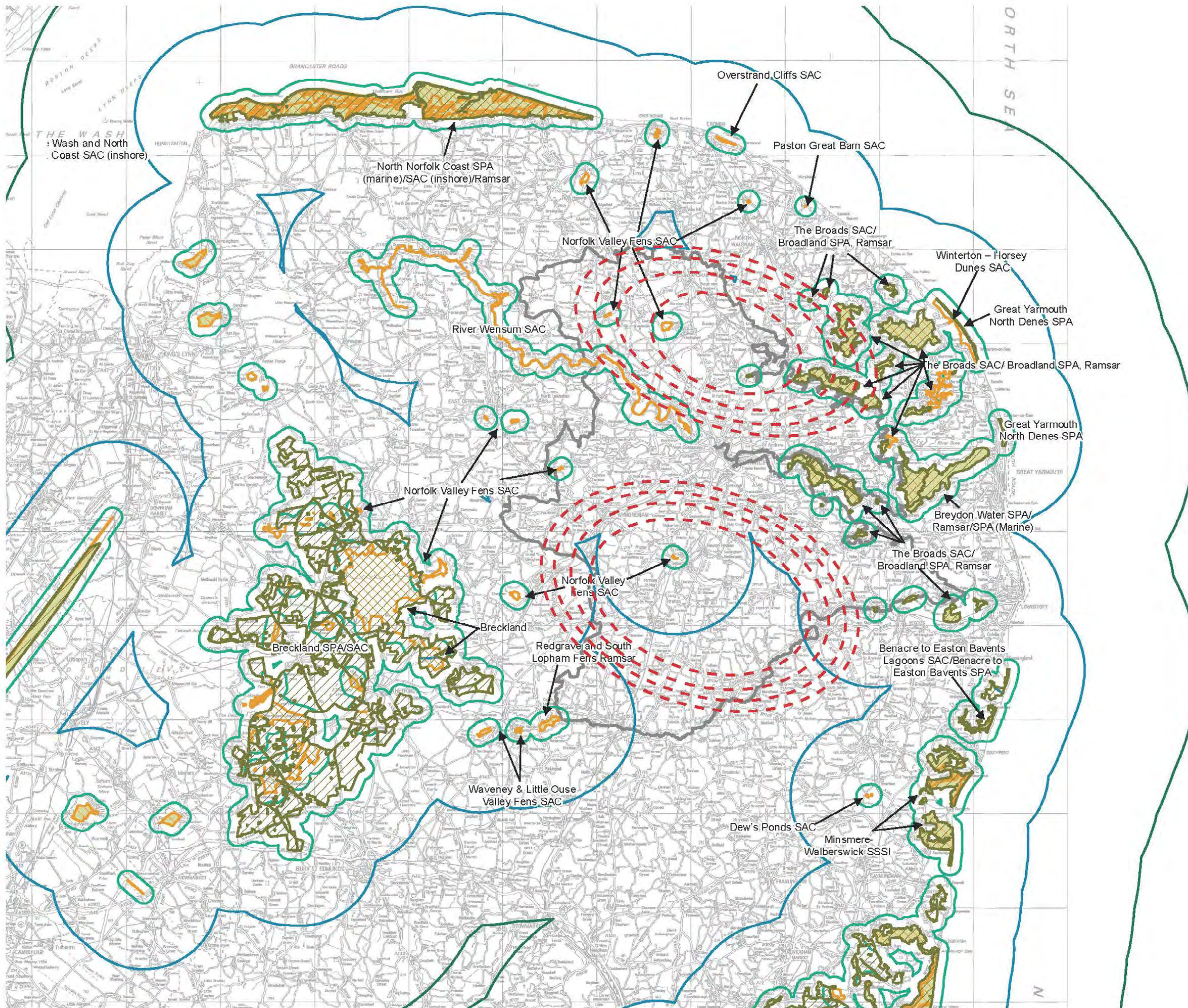
Option 3 - Supporting the Cambridge-Norwich Tech Corridor

Figure 05

Scale 1:400,000 @A3

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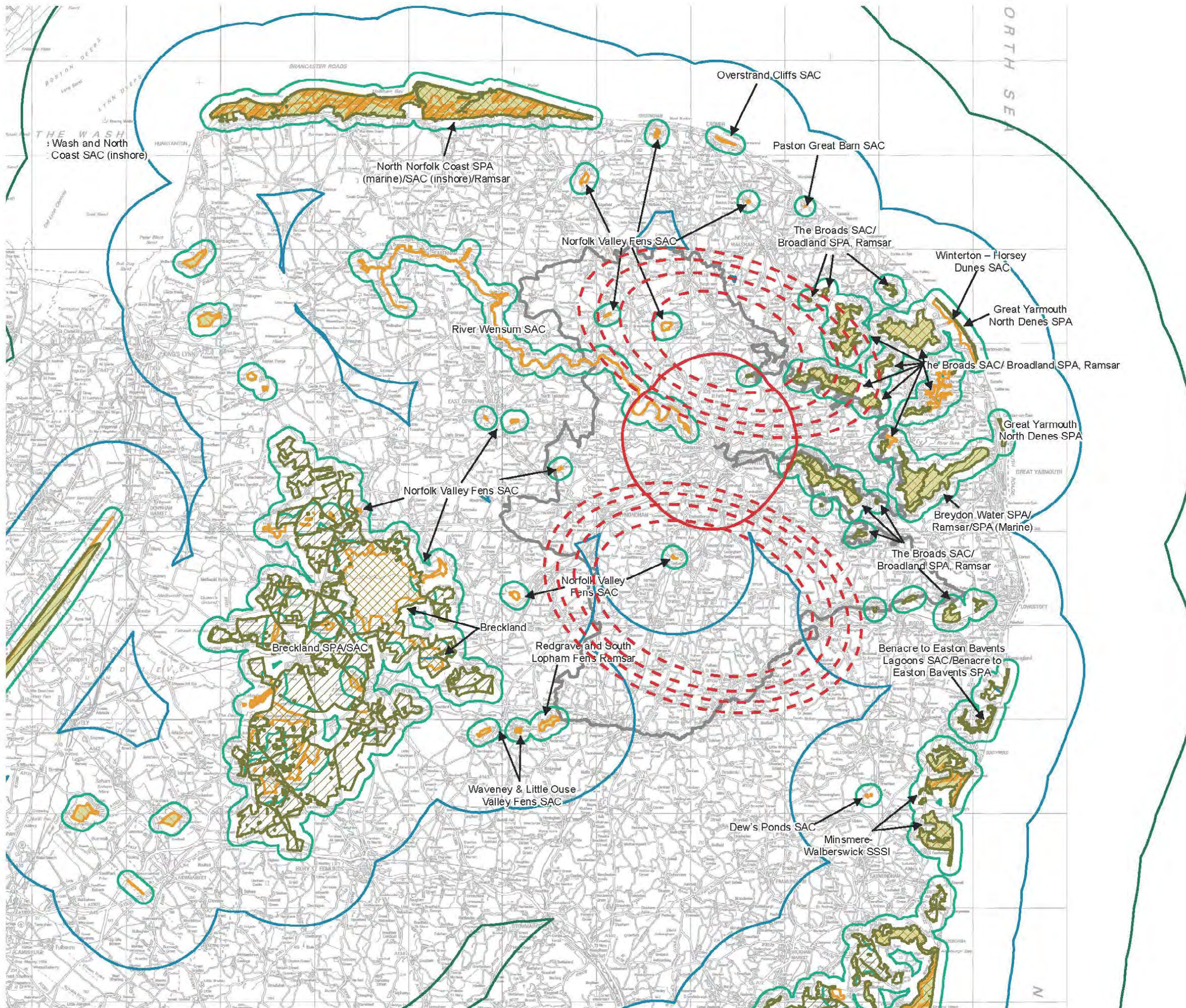
Option 4 - Dispersal
Option 5 - Dispersal plus new Settlement










Figure 06

Scale 1:4000,000 @A3

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- Key**
-  Greater Norwich Boundary
 -  Special Areas of Conservation
 -  Special Protection Areas
 -  RAMSAR
 -  20km Zone of Influence
 -  8km Zone of Influence
 -  1km Zone of Influence
 -  Urban concentration area
 -  Dispersal

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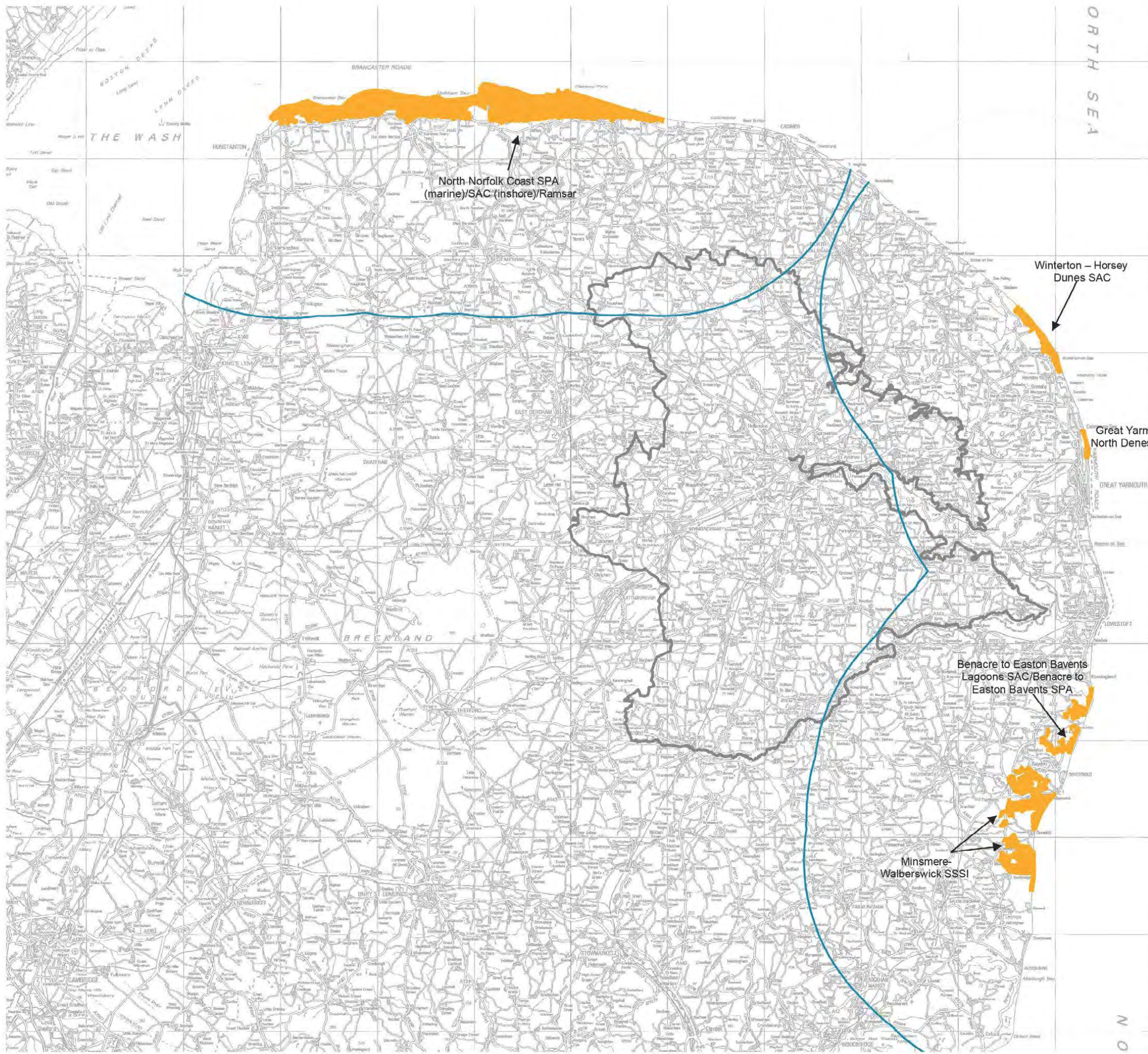
Option 6 - Dispersal plus Urban Growth
Option 7 - Dispersal, Urban Growth and New Settlement

Figure 07

Scale 1:400,000 @A3

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Key

-  Greater Norwich Boundary
-  Popular coastal sites
-  20km buffer from popular coastal sites

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20km buffer from popular coastal sites

Figure 08

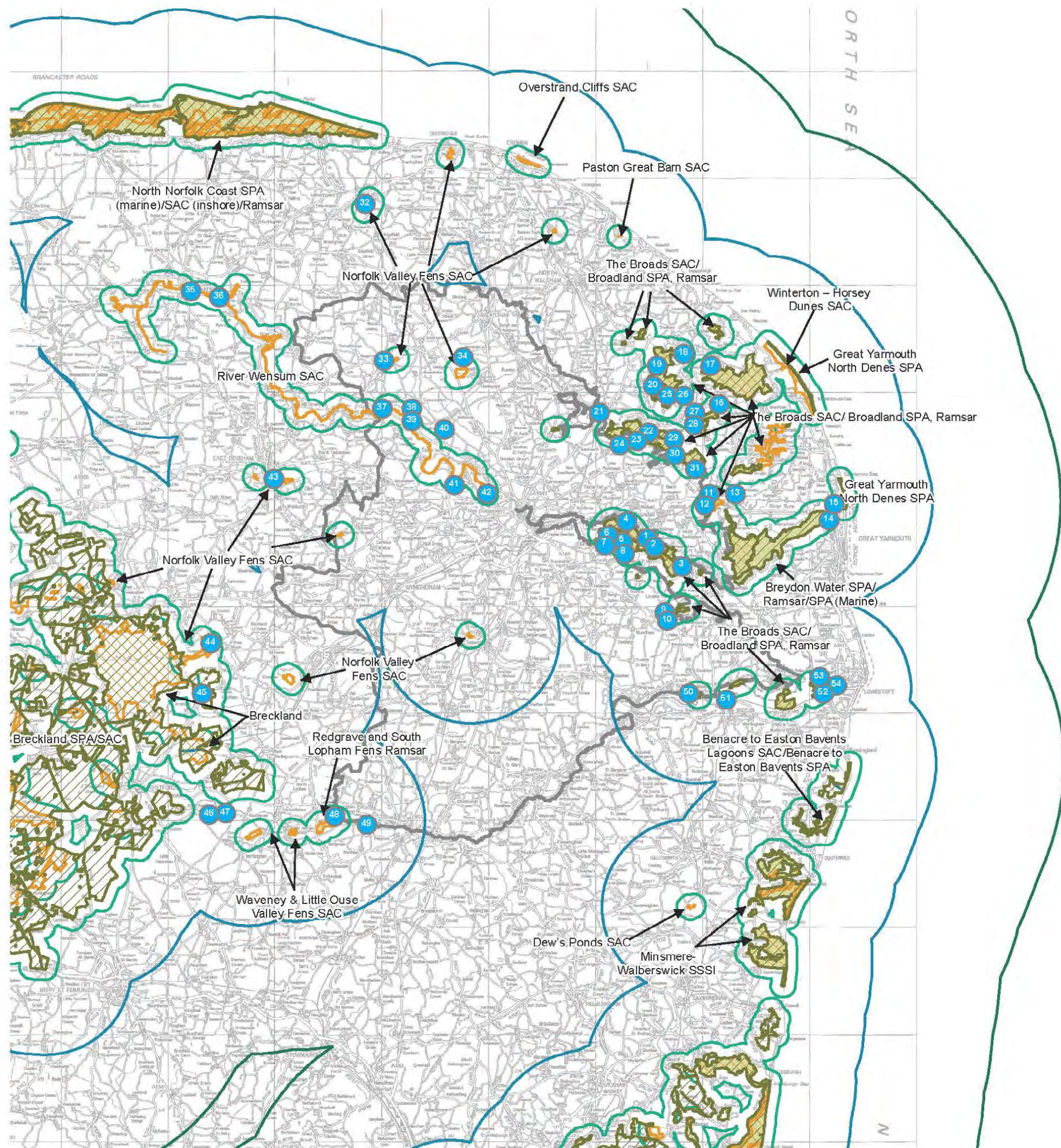
Scale 1:400,000 @ A3

September 2017



Car ParkPlace

- 1 RSPB Strumpshaw Fen
- 2 RSPB Buckenham Fen - at Buckenham station
- 3 Cantley Staithe
- 4 Brundall Station
- 5 Surlingham - Coldham Hall pub
- 6 Surlingham - Ferry House pub
- 7 Surlingham Church
- 8 Rockland St. Mary Staithe
- 9 Chedgrave
- 10 Loddon
- 11 Acle
- 12 Acle station
- 13 Stokesby Staithe
- 14 Great Yarmouth railway station and Asda
- 15 Great Yarmouth yacht station
- 16 Potter Heigham
- 17 Hickling staithe
- 18 Sutton Staithe
- 19 Barton Turf Staithe
- 20 Neatishead
- 21 Hoveton
- 22 Horning
- 23 Woodbastwick Woodforde's
- 24 Salhouse Broad
- 25 Irstead
- 26 How Hill
- 27 Ludham
- 28 St. Benet's Abbey
- 29 Ranworth Staithe
- 30 South Walsham
- 31 Upton Staithe
- 32 Holt Country Park
- 33 Reepham Market Place
- 34 Marsham Heath
- 35 Fakenham
- 36 Pensthorpe
- 37 Lenwade
- 38 Alderford Common
- 39 Attlebridge Marriot's Way
- 40 Freeland Corner
- 41 Costessey Park
- 42 Hellesdon Mill Lane
- 43 East Dereham - Dumpling Green
- 44 Thompson Common
- 45 Hockham Heath
- 46 Knettishall Heath
- 47 Knettishall Heath
- 48 Redgrave & Lopham Fen
- 49 Roydon
- 50 Geldeston Lock
- 51 Beccles - Fen Lane
- 52 Carlton Marshes
- 53 Oulton Marshes
- 54 Oulton Broad South Station



Key

- Greater Norwich Boundary
- Special Areas of Conservation
- Special Protection Areas
- RAMSAR
- 20km Zone of Influence
- 8km Zone of Influence
- 1km Zone of Influence
- Car Park

E16845 Greater Norwich Local Plan

Carparks at European Sites within 8km of Greater Norwich

Figure 09

Scale 1:400,000 @ A3

September 2017



Appendix 1

Option	Potential growth location	River Wensum SAC	Norfolk Valley Fens SAC	The Broads SAC / Broadland SPA, Ramsar	Breydon Water SPA / Ramsar	Great Yarmouth North Denes SPA	Winterton - Horsey Dunes SAC	Waveney and Little Ouse Valley Fens SAC	Redgrave and South Lopham Fen Ramsar	Breckland SPA / SAC	Benacre to Easton Bavents SAC / SPA	The Wash and North Norfolk Coast SAC	North Norfolk Coast SPA / SAC / Ramsar
growth common to all options	Previously developed land within Norwich and the built up areas of the fringe parishes (1,700 homes);	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
growth common to all options	Growth in main towns (Aylsham, Diss, Harleston and Wymondham) and key service centres (Acle, Blofield, Brundall, Hethersett, Hingham, Long Stratton, Loddon/Chedgrave, Poringland/ Framingham Earl, Reepham and Wroxham). 1,000 homes, some of which may be on previously developed land;	√?	√?	√?	√?	√?	√?	√?	√?	√?	√?	√?	√?
growth common to all options	Growth in service villages (1,000 homes) and other villages (200 homes), some of which may be on previously developed land;	√?	√?	√?	√?	√?	√?	√?	√?	√?	√?	√?	√?
1, 2, 6, 7	Broadland Growth triangle - 1000 (opt 1,2, 6, 7),	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
1,2, 3, 4, 5, 6, 7	North-west fringe parishes of Horsford, Taverham, Drayton and Hellesdon - 1000 (opt 1), 200 (opt 2), 300 (opt 3, 4, 5, 6, 7)	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
1, 2, 3, 4, 5, 6, 7	Western fringe - 1000 (opt 1, 3), 500 (opt 2, 4, 5, 6, 7)	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
1, 2, 3, 7	south-west parishes of Cringleford, Little Melton and Hethersett - 1500 (opt 1, 2, 3), 500 (opt 7)	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
4, 5, 6	south-west parishes of Cringleford, Little Melton and Hethersett, and Wymondham - 500	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
1	smaller villages or villages slightly more distant such as Horsham St. Faith, Spixworth, Poringland, Swardeston, and Mulbarton - 500	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
2, 3	Diss and A140 villages - 800 (opt 2), 500 (opt 3)	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
4, 5, 6	Diss, Harleston, Hingham and Loddon - 400	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
7	Wymondham, Diss, Harleston, Hingham and Loddon - 400	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)
2, 3, 5, 7	New settlement - 1000 (opt 2, 3, 5, 7)	?	?	?	?	?	?	?	?	?	?	?	?
3	Hingham - 200	x	x	x	x	(x)	(x)	x	x	x	x	(x)	(x)

Option	Potential growth location	River Wensum SAC	Norfolk Valley Fens SAC	The Broads SAC / Broadland SPA, Ramsar	Breydon Water SPA / Ramsar	Great Yarmouth North Denes SPA	Winterton - Horsey Dunes SAC	Waveney and Little Ouse Valley Fens SAC	Redgrave and South Lopham Fen Ramsar	Breckland SPA / SAC	Benacre to Easton Bavents SAC / SPA	The Wash and North Norfolk Coast SAC	North Norfolk Coast SPA / SAC / Ramsar
4, 5, 6, 7	Service and other villages - 3300 additional making 4500 in all (opt 4), 2300 making a total of 3500 in all (opt 5, 6), 1300 making a total of 2500 in all (opt 7)	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?

Key

- x Not within 8km of a European site and not within 20km of a coastal European site; or within 8km but no impact predicted
- (x) Further than 20km from a coastal European site but likely to provide additional occasional visits to coastal European sites.
- ✓ Within 8km of a European site or within 20km of a coastal European site; impact predicted
- ? Impact uncertain - location of growth is unspecific
- ✓? impact uncertain but likely that some growth would be within 8km of a European site

