



East Pye Solar Shadow Habitats Regulations Assessment

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<u>Shadow Habitats Regulations Assessment.</u> <u>Revision 2</u>	<u>Contents page changed to include Appendix C.</u> <u>Page 12 changed to refer to Appendix C.</u> <u>Appendix C added.</u>	<u>Citation/Natura 2000 data sheets for each European site considered within this document included as Appendix C.</u>	<u>Response to Section 51 advice.</u>

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~~Appendix A European Sites~~

~~Appendix B Conservation Objectives and Threats Affecting Site Integrity~~

1 Introduction

1.1 Overview

- 1.1.1 This report presents the results of a shadow Habitats Regulations Assessment ('sHRA') for East Pye Solar (hereafter referred to as the 'Scheme').
- 1.1.2 The sHRA is intended to provide the information necessary for the Secretary of State (SoS) (advised by the Planning Inspectorate) to make their assessment of the Scheme as the Competent Authority.

1.2 Order Limits

- 1.2.1 The Order Limits cover 1,212.3 hectares ('ha') of land located within the administrative areas of South Norfolk Council (SNC) and Norfolk County Council (NCC). The Order Limits are shown on **Location Plan [EN0110014/APP/2.1]**.
- 1.2.2 The Order Limits for the Scheme constitute the maximum area of land potentially required for the construction, operation (and maintenance) and decommissioning of the Scheme.

1.3 The Scheme

- 1.3.1 The Scheme comprises the construction, operation and maintenance, and decommissioning of a Solar photovoltaic (PV) electricity generating station with a total capacity exceeding 100 megawatts (MW) and associated development including a Battery Energy Storage System (BESS), up to three 132kV Project Substations and up to three 400kV Project Substations, Grid Connection Infrastructure and a new National Grid Substation. A description of the Scheme can be found in **Environmental Statement (ES) Volume 1, Chapter 4 – The Scheme [EN0110014/APP/6.1.4]**.
- 1.3.2 The Scheme would be located within the Order Limits (shown on the **Location Plan [EN0110014/APP/2.1]** and **Works Plan [EN0110014/APP/2.3]** submitted as part of the DCO Application and secured by Article 3 of the **draft DCO [EN0110014/APP/3.1]**). This provides the parameters which have been used to determine impacts to European Sites or their qualifying features, both on and off site.
- 1.3.3 The Order Limits contain all elements of the Scheme comprising the Solar PV Arrays, 132kV and 400kV Project Substations, the National Grid Substation, the BESS, Grid Connection Infrastructure, interconnecting cables within the Cable Route Corridor (CRC), Mitigation and Enhancement Areas and Highway Works.

- 1.3.4 The construction of the Scheme is anticipated to commence in 2028 for a period of approximately 24 months. On this basis, it is expected that the Scheme could be completed by 2030 and energised in 2031.

1.4 Legislative Context

- 1.4.1 The 'Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 1)' (hereafter referred to as 'the Habitats Regulations') transposed certain aspects of 'the Habitats Directive' (Council Directive 92/43/EEC) (Ref 2) and 'the Wild Birds Directive' (Ref 3) (Directive 2009/147/EC) (together known as the 'Nature Directives') (including various amendments) into domestic law.
- 1.4.2 To make such legislation operable following the UK departure from the European Union (i.e., from 1 January 2021), changes were made to the Conservation of Habitats and Species Regulations 2017 (as amended) by the 'Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019' (Ref 4). Most of these changes relate to the transfer of functions from the European Commission to the relevant domestic authorities, with all other processes and terms remaining unchanged, such that the strict protection afforded to sites, habitats and species, including wild birds, continues through the Habitats Regulations (as amended).
- 1.4.3 Of relevance to HRA, the Habitats Regulations 2017 (as amended), with changes made by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, provides for the designation and protection of important ecological sites already designated under the Nature Directives, including Special Areas of Conservation (SAC) and Special Protection Areas (SPA) and any further sites designated under these Regulations (together forming a new 'National Site Network' in the UK), as well as Ramsar sites (which, per the National Planning Policy Framework and The Overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 5) should be protected in the same way as SAC and SPA).
- 1.4.4 Where a project is likely to have a significant effect on European Sites, there is also a requirement (in accordance with Regulations 63 of the Conservation of Habitats and Species Regulations 2017 (as amended), for the Competent Authority to make an 'Appropriate Assessment' of the implications of that project on a European Site in view of that European Site's Conservation Objectives, i.e., to undertake a HRA. The Competent Authority must for the purposes of the assessment consult the appropriate nature conservation body.

- 1.4.5 The HRA process involves the completion of an initial 'Screening' stage, followed by an 'Appropriate Assessment' if the project is considered likely to have a significant impact on a European Site. In the light of the conclusions of the assessment, the Competent Authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site.
- 1.4.6 In line with Regulation 64 of the Conservation of Habitats and Species Regulations 2017 (as amended), if the Competent Authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest, it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site.

1.5 Planning Context

- 1.5.1 The Scheme is classed as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008 (Ref 6) and as such, requires a Development Consent Order (DCO) to proceed. In addition to the HRA, the DCO Application is underpinned by an Environmental Impact Assessment (EIA) which is set out in the ES and includes an assessment on biodiversity in **ES Volume 1, Chapter 8 - Ecology and Biodiversity [EN0110014/APP/6.1.8]**, associated figures **[EN0110014/APP/6.2.8.1 – 6.2.8.6]** and appendices **[EN0110014/APP/6.3.8.1 – 6.3.8.10]**. EIA is a separate and standalone requirement from the HRA.

National Planning Policy

- 1.5.2 NPS EN-1 (Ref 5) states that:

'4.2.32 Where, following Appropriate Assessment, CNP Infrastructure has residual adverse impacts on the integrity of sites forming part of the UK national site network, either alone or in combination with other plans or projects, the Secretary of State will consider making a derogation under the Habitats Regulations'.

- 1.5.3 Crucially for an HRA derogation, the SoS will consider the particular circumstances of any plan or project, but starting from the position that energy security and decarbonising the power sector to combat climate change:

'4.2.34 Requires a significant number of deliverable locations for CNP Infrastructure and for each location to maximise its capacity. This NPS imposes no limit on the number of CNP infrastructure projects that may be consented. Therefore, the fact that there are other potential plans or projects deliverable in different locations to meet the need for CNP Infrastructure is unlikely to be treated as an alternative solution. Further, the existence of another way of developing the proposed plan or project which results in a

significantly lower generation capacity is unlikely to meet the objectives and therefore be treated as an alternative solution; and

Are capable of amounting to imperative reasons of overriding public interest (IROPI) for HRAs, and, for MCZ assessments, the benefit to the public is capable of outweighing the risk of environmental damage, for CNP Infrastructure’.

1.5.4 NPS EN-1 (Ref 5) goes on to state that:

‘4.2.35 For HRAs, where an applicant has shown there are no deliverable alternative solutions, and that there are IROPI, compensatory measures must be secured by the Secretary of State as the competent authority, to offset the adverse effects to site integrity as part of a derogation.’

1.5.5 NPS EN-1 (Ref 5) states that the applicant must provide all the information necessary to inform the SoS to consider the plan or project i.e. an ‘Applicant Assessment’. The Applicant Assessment for the Habitat Regulations sets out how the applicant should seek the advice of the Statutory Nature Conservation Body (SNCB) and provide the SoS with information they may require making this assessment.

1.5.6 NPS EN-1 (Ref 5) also sets out the sites which are protected by international conventions and which an HRA will be required, in addition to SAC and SPA but also:

‘(a) Potential Special Protection Areas and possible Special Areas of Conservation;

(b) Listed or proposed Ramsar sites; and

(c) Sites identified, or required, as compensatory measures for adverse effects on any of the other sites covered by this paragraph’.

1.5.7 Further in paragraph 5.4.51 of NPS EN-1 (Ref 5) the SoS decision making, with regards to Habitats Regulations states that:

‘The Secretary of State must consider whether the project is likely to have a significant effect on a protected site which is part of the National Site Network (a habitat site), a protected marine site, or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or projects.’

1.5.8 NPS EN-3 (Ref 7) provides an approach for the SoS to assess potential biodiversity impacts for Critical National Priority (‘CNP’) Infrastructure solar photovoltaic projects in paragraphs 2.10.67 to 2.10.84.

1.6 Purpose of HRA

- 1.6.1 As outlined previously, in accordance with Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended), it is the duty of the Competent Authority, in this case the SoS, to determine whether the Scheme will have a likely significant effect on a European Site (whether alone or 'in-combination' with other plans or projects), in view of that European Site's 'Conservation Objectives', i.e., to undertake a HRA.
- 1.6.2 'Conservation Objectives' provide a framework which should inform any HRA (which may include an Appropriate Assessment) that a Competent Authority may be required to make under the legislation. In addition, they can be used to inform any measure necessary to conserve or restore the European Site and/or to prevent the deterioration or significant disturbance of its qualifying features.
- 1.6.3 This sHRA is intended to provide the information necessary for the SoS State (advised by the Planning Inspectorate) to make their assessment of the Scheme as the Competent Authority.

2 Methods

2.1 Overview

2.1.1 This document has been prepared based on the methodology set out by UK Government Guidance on Habitats Regulations for NSIPs (Ref 8). These guidelines outline three stages to the HRA process:

1. Screening – to check if the proposal is likely to have a significant effect on the site's conservation objectives. If not, you do not need to go through the appropriate assessment or derogation stages.
2. Appropriate Assessment – to assess the likely significant effects of the proposal on the qualifying features of the European sites, in view of the site's conservation objectives and identify ways to avoid or minimise any effects.
3. Derogation – to consider if proposals that would have an adverse effect on the integrity of a European site qualify for an exemption.

2.2 Zone of Influence

2.2.1 There is no clear guidance on which European Sites should be taken into consideration in the HRA for a plan or project. Where a European Site includes mobile species as qualifying interests, it is necessary to consider potential likely significant effects (LSEs) that could occur in areas used by these species outside the boundary of the European Site. As such, areas of land outside a European Site, which contribute to the status of its qualifying interests and Conservation Objectives may also require consideration. This is described as the 'Zone of Influence' (Zol).

2.2.2 The Zol was established as 10km from the Order Limits which is deemed to be sufficient in the context of potential impacts from the Scheme, when considering the potential impact pathways and sensitivity of European Site designated features. A desk-based study was carried out to identify the presence of European Sites within this the Zol and is included in **ES Volume 1, Chapter 8 - Ecology and Biodiversity [EN0110014/APP/6.1.8]**.

2.3 HRA Stages

Stage 1: Screening

2.3.1 The Screening Stage involves the identification of the European Sites, (including Ramsar Sites) (Ref 9), which could potentially be affected by the Scheme and their determining interests; and whether the Scheme could result in an LSE, either alone or in combination with other plans and projects.

- 2.3.2 HRA case law (the “Dilly Lane” case, 2008 (Ref 10)) determined that mitigation measures that were ‘incorporated into the project’ or which ‘formed part of the project’ could be taken into account at the screening ‘likely significant effect’ test stage of HRA (as long as they were effective). The ruling judge accepted that certain facets of a project, which are intended to avoid or reduce negative impacts on a European site (i.e. mitigation), can still be regarded as ‘incorporated into the project’ if they are promoted that way by the developer.
- 2.3.3 However, another ruling (Court of Justice of the European Union (“CJEU”) People Over Wind and Sweetman v Coillte Teoranta (C-323/17)) (Ref 11) concluded that mitigation measures intended to avoid or reduce impacts on a European Site could not be regarded as part of the ‘Project’ and thus should not be taken into account at the Screening Stage of HRA when judging whether likely significant effects on the integrity of a European Site could occur.
- 2.3.4 It is considered reasonable, in the light of the second ruling, that any measures inherently part of the Scheme (described as ‘embedded mitigation’ in this report) which are not specifically incorporated into the scheme for ecological reasons, but reduce ecological effects, can be considered at the HRA screening stage. If there is reliance on mitigation measures as part of the Scheme, that would not have been put in place without the presence of a European Site, an Appropriate Assessment is required. This also aligns with the ruling of the 2023 C-721/21 Eco Advocacy CLG v An Bord Pleanála case that clarified that standard design features (e.g. standard drainage measures) not specifically aimed at reducing impacts on a protected site can be considered during HRA Screening.

Stage 2: Appropriate Assessment

- 2.3.5 In the event that LSEs are identified at the Screening Stage, on the basis of objective information, or uncertainty remains, the Competent Authority should proceed to the next stage of assessment. During Stage 2 (Appropriate Assessment) an assessment of whether there will be an adverse effect on the integrity (Ref 12) of the European Site concerned, and the consideration of measures to address this effect, is required. The Precautionary Principle should be applied, with the focus being on objectively demonstrating, with supporting evidence, that there will be no adverse effects on the integrity of the European Site. Where this is not possible, adverse effects must be assumed.
- 2.3.6 The ‘Precautionary Principle’ (Ref 13) provides that where the threat of serious or irreversible environmental damage exists, a lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

- 2.3.7 Only where appropriate measures can be put in place and the Competent Authority considers that the likely significant effects of the Scheme, alone or in combination with other projects or plans, will not adversely affect the integrity of the European Site, can consent be granted.
- 2.3.8 Where it is not possible to identify suitable measures to address the identified effects (such that there remains the potential for a likely significant effect to adversely effect on the integrity of the European Site), or uncertainty remains, consideration of Stage 3 – Derogation.

Stage 3: Derogation

- 2.3.9 Derogation exemptions are assessed against three legal tests, as follows:
1. There are no feasible alternative solutions that would be less damaging or avoid damage to the site.
 2. The proposal needs to be carried out for imperative reasons of overriding public interest.
 3. The necessary compensatory measures can be secured.

2.4 HRA Approach and Rationale

- 2.4.1 In section 3 of this sHRA, the relevant European Sites are identified, their features of interest documented, along with potential pressures or threats, and their Conservation Objectives. This provides a baseline from which to consider potential impacts and impact pathways.
- 2.4.2 Section 4 presents the Stage 1 Screening Assessment which assesses the threats or pressures to the Europeans Sites where, and on the basis of objective information, an assessment of whether there will be LSE to the European Site.
- 2.4.3 The approach for the in-combination assessment is such that where no impact pathways are identified and / or there is no appreciable effect (Ref 14) resulting from the Scheme, then there is no mechanism by which perceivable in-combination effects with other projects or plans could occur. Where impact pathways or appreciable effects are identified, the potential for LSE in-combination with other projects or plans is considered. Conclusions are then drawn as to whether LSE on the identified European Sites are anticipated.
- 2.4.4 Where LSEs on European Sites identified during Screening cannot be ruled out, either alone or 'in-combination', Stage 2 Appropriate Assessment outlines further detail relating to the specific nature of the impact, the mitigation to be implemented and the resultant effect on the integrity of the European Site, in light of that mitigation. Where there is potential for in combination effects, further detail is also provided.

- 2.4.5 Only where appropriate measures can be put in place and the Competent Authority considers that the likely significant effects of the Scheme will not adversely affect the integrity of the European Site, can consent be granted.
- 2.4.6 If Natural England (NE), as the statutory advisor on terrestrial nature conservation issues, advise the Competent Authority that the Scheme is likely to affect the integrity of one or more of the European Sites, the Scheme will then have to demonstrate that there are no viable alternatives, and that the Scheme is required for imperative reasons of overriding public interest (IROPI).
- 2.4.7 Appropriate compensation to address the 'loss', is needed for these latter stages, if consent is to be granted.

2.5 Evidence Gathering

- 2.5.1 Data to inform this sHRA was derived from desk-based study data and breeding bird survey results presented in **ES Volume 1, Chapter 8 - Ecology and Biodiversity [EN0110014/APP/6.1.8]**, as well as a review of the Joint Nature Conservation Committee (JNCC) website for both SACs (Ref 15) and SPAs (Ref 16) and Natura 2000 – Standard Data Forms and the Greater Norwich Local Plan. Further assessment of threats was derived from Site Improvement Plans (SIPS) (Ref 17) for each of the SAC's identified.
- 2.5.2 To assess the potential impacts on ecological receptors as a result of changes in other environmental factors, this sHRA is also informed by hydrological and air quality assessments. These assessments are provided in **ES Volume 1, Chapter 13 - Air Quality [EN0110014/APP/6.1.13]** and **ES Volume 1, Chapter 9 - Water Environment [EN0110014/APP/6.1.9]** and associated appendices.

2.6 Consultation

- 2.6.1 The response from NE to the statutory consultation for the Scheme (and Preliminary Environmental Information Report (PEIR)) on the 5 August 2025, stated the following in respect of the Habitats Regulations:

'Internationally designated sites

The internationally designated sites relevant to this application are:

- *Norfolk Valley Fens Special Area of Conservation (SAC)*
- *Broadland Ramsar*
- *Broadland Special Protection Area (SPA)*
- *The Broads SAC*

The application site is in close proximity to European designated sites (also commonly referred to as Natura 2000 sites) and therefore has the potential to affect their interest features. European sites are afforded protection under the Conservation of Habitats and Species Regulations 2017, as amended (the 'Habitats Regulations').

Paragraph 8.1.13 Chapter 8, Ecology and Biodiversity, Page 18 states that Likely Significant Effect (LSE), will be considered in a shadow Habitat Regulations Assessment (HRA) screening report, and if required a Shadow Appropriate Assessment report. This will be submitted as part of the DCO application. Natural England will provide comment on the HRA when it is available to review.

Norfolk Valley Fens SAC

Norfolk Valley Fens SAC is located 7.4km north-west. Flordon Common is a component site of the Norfolk Valley Fens SAC and is 2.4km north-west of sub-Site 4A. The feature may be sensitive to changes in water quality. In our previous response (our ref 499672, dated 10 February 2025), we advised that impacts on water quality will need to be assessed as the proposed development may be hydrologically connected to the SAC. 1.2.2 Table 8.4, Chapter 8, page 26 states that work is currently underway to establish hydrological linkage and detailed assessment of this will be included within the Environmental Statement (ES). Natural England advise that construction methods used in watercourse crossings are assessed for their impact on water quality.

The Cable Route Corridor (CRC) cables will be retained in-situ beneath the ground during the operational period and following the decommissioning period and disturbance is unlikely to occur. Natural England agrees that the assessment of impacts in relation to the CRC during these periods can be scoped out. (table 8.3, Chapter 8, page 22). Please refer to our more detailed comments on soil management during the decommissioning phase in paragraph 8.3.6 of this letter.

Broadland Ramsar, Broadland SPA and The Broads SAC

There are five parcels of land that are within 10km of the Broads SAC and Broadland Ramsar. There are also several water courses in close proximity of the site. Natural England previously advised (our ref 499672, dated 10 February 2025) that further assessment is required to determine if the 5 parcels are hydrologically linked to the SAC and Ramsar. Consideration should also be given to any possible effects of the cable works upon watercourses linked to the SAC and Ramsar (e.g. methodology used for watercourse crossings). Table 8.4 page 26 states that these sites will remain scoped in for hydrological impacts which Natural England supports.

Table 8.3 states that the CRC cables will remain in situ beneath the ground during the operational period and following the decommissioning period and therefore impact has been scoped out of further assessment. Natural

England agrees that impacts can be scoped out. Please refer to our more detailed comments on soil management during the decommissioning phase in paragraph 8.3.6 of this letter.

Avian impact has been scoped out of the construction, operational and decommissioning phases as qualifying mobile species populations SPA/Ramsar (namely Whooper swan and Bewick's swan), are considered highly unlikely to regularly utilise habitats within and surrounding the Sites, due to unsuitable topography, and separation distance. (table 8.3 page 22). There are expansive areas of low-lying floodplains associated with the Yare and Chet catchments within and immediately surrounding the SPA/Ramsar site. Natural England agrees the risk of impact is relatively low and can be screened out from further assessment. However, we advise that full justification and evidence for this conclusion is provided in the HRA.'

- 2.6.2 NE also advised that the Scheme's construction traffic flows should be screened against the 1,000 annual average daily traffic (AADT) or 200 Heavy Duty Vehicle (HDV) screening criteria for roads within 200m of a designated ecological site in accordance with 'Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations' (Ref 18).

3 Site Details

3.1 Overview

- 3.1.1 In this section the relevant European Sites are identified, their features of interest documented, along with potential pressures or threats, and their Conservation Objectives. This provides a baseline from which to consider potential impacts and impact pathways.

3.2 Zone of Influence

- 3.2.1 The Zol has been identified as 10km for European Sites. The Sites considered are shown in **Figure 3.1** below and summarised in **Table 3.1** along with their Site Code obtained from the JNCC website for SACs (Ref 19) and SPAs (Ref 20), distance from the Scheme and reason for designation. Full details of their designation and any component Site of Special Scientific Interest ('SSSI') is also provided within **Appendix A.** [The Citation/Natura 2000 data sheets for each European site considered are provided within Appendix C.](#)
- 3.2.2 Where a European Site includes mobile species as qualifying interests, it is necessary to consider potential LSE that could occur in areas used by these species outside the boundary of the European Site, referred to as Functionally Linked Land (FLL). As such, areas of land outside a European Site, which contribute to the status of its qualifying interests and Conservation Objectives, may also require consideration.

Functionally Linked Land

- 3.2.3 In this report, FLL is used in the context of a published report submitted to NE (Ref 21):

'... the term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore 'linked' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status.'

Figure 3.1: Statutory Designated Sites

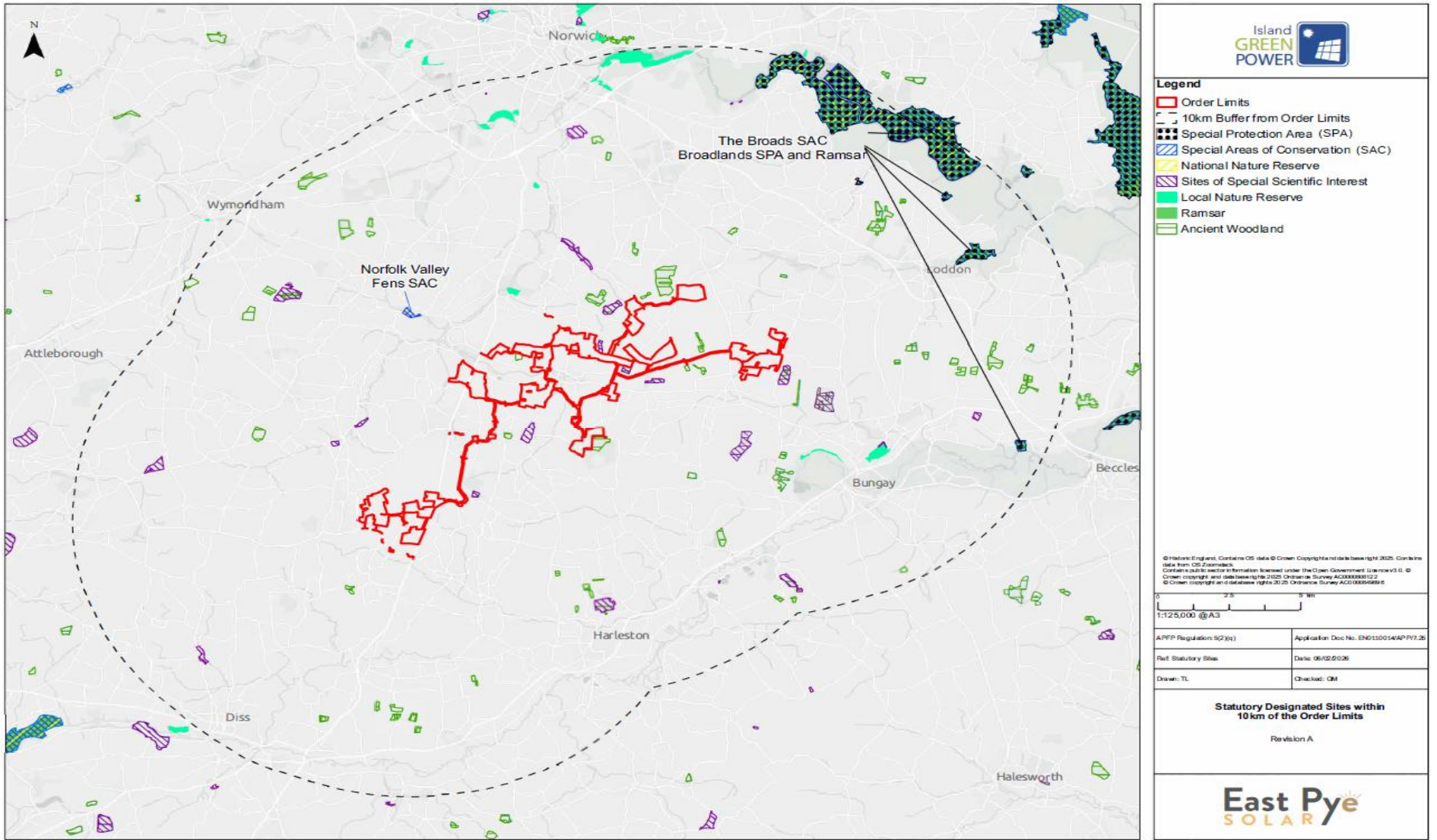


Table 3.1: European Designated Sites Present within 10km of the Order Limits

Site Name	JNCC Site Code	Approximate Distance and Direction from Closest Sub-Site	Approximate Distance and Direction from Closest CRC	Reason for Designation
Norfolk Valley Fens SAC	UK0012892	2.38km NW of sub-Site 4A	3.2km NW of CRC11	Designated for containing numerous Annex I habitats including calcareous fens and European dry heaths which support Annex II species Desmoulin's whorl-snail <i>Vertigo moulinsiana</i> and Narrow-mouthed whorl snail <i>Vertigo angustior</i> .
The Broads SAC	UK0013577	6.65km NE of sub-Site 10E	6.85km NE of CRC14	Designated for containing numerous Annex I habitats including calcareous fens and nutrient-rich lakes. These habitats support Annex II species including Desmoulin's whorl-snail, Little whirlpool ram's-horn snail <i>Anisus vorticulus</i> Fen orchid <i>Liparis loeselii</i> and Otter <i>Lutra lutra</i> .
Broadland SPA	UK9009253	6.65km NE of sub-Site 10E (Ref 22)	6.85km NE of CRC14	Designated for supporting nationally important numbers of Annex I species Bittern <i>Botaurus stellaris</i> , Bewick's swan <i>Cygnus columbianus bewickii</i> , Whooper swan <i>Cygnus cygnus cygnus</i> , Marsh Harrier <i>Circus aeruginosus</i> , Hen Harrier <i>Circus cyaneus</i> and Ruff <i>Philomachus pugnax</i> .
Broadland Ramsar	UK11010	6.65km NE of sub-Site 10E (Ref 23)	6.85km NE of CRC14	Designated for containing numerous Annex I habitats including calcareous fens. These habitats support Annex II species including Desmoulin's whorl-snail, Fen orchid and Otter. The site supports outstanding assemblages of rare plants and invertebrates including nine British Red Data Book plants and 136 British Red Data Book invertebrates.

Site Name	JNCC Site Code	Approximate Distance and Direction from Closest Sub-Site	Approximate Distance and Direction from Closest CRC	Reason for Designation
				The Ramsar also supports species/populations at levels of international importance, including Bewick's swan, Eurasian wigeon <i>Anas Penelope</i> , Gadwall <i>Anas strepera strepera</i> and Northern shoveler <i>Anas clypeata</i> .

- 3.2.4 A summary of the relevant Conservation Objectives published by NE and threats which affect site integrity are presented in **Appendix B**. The threats for each of the European Sites is shown in **Table 3.2** as identified through the JNCC Standard Forms, where relevant.
- 3.2.5 In addition, NE's SIPS provide a high-level overview of the issues (both current and predicted) affecting the condition of the interest features of the European Sites and outline the priority measures required to improve the condition of the features. They do not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.

Table 3.2: Threats and Pressures for the Identified European Sites

Identified Pressure or Threat	Norfolk Valley Fens SAC	The Broads SAC	Broadland SPA	Broadland Ramsar (Ref 24)
Water Pollution	X	X	X	X
Inappropriate cutting/mowing	X			
Climate change		X	X	X
Invasive species	X	X	X	X
Siltation		X	X	X
Inappropriate water levels	X	X	X	X
Hydrological changes	X	X	X	X
Water abstraction	X	X	X	X
Change in land management	X	X	X	X
Inappropriate ditch management		X	X	X
Inappropriate scrub control	X	X	X	X

Identified Pressure or Threat	Norfolk Valley Fens SAC	The Broads SAC	Broadland SPA	Broadland Ramsar (Ref 24)
Change in species distributions	X	X	X	X
Public access/disturbance		X	X	X
Undergrazing	X	X	X	X
Overgrazing	X			
Drainage		X	X	X
Direct impact from third party (Ministry of Defence)		X	X	X
Inappropriate coastal management		X	X	X
Air pollution: impact of atmospheric nitrogen deposition	X	X	X	X

3.2.6 **Table 3.3** considers whether there are any conceivable impact pathways by which the Scheme could give rise to the threats / pressures for which the European Sites are identified to be at risk. Only sites where the risk applies are specifically named.

Table 3.3: Rationale for Identified Potential Threats and Pressures on European Site Qualifying Features Arising from the Scheme

Identified Pressure or Threat	Rationale for Threat or Pressure Arising from the Scheme	Potential Pathway
Water Pollution	The Scheme has potential to affect European Sites through water pollution, siltation, inappropriate water levels and other hydrological changes. During consultation, NE requested that the HRA provides further detail on hydrological links to the European Sites. This is provided in Section 4 below.	Yes
Siltation		Yes
Inappropriate water levels		Yes
Hydrological changes		Yes
Water abstraction	No water abstraction is required to facilitate the Scheme, either during the construction or operation (and maintenance) and decommissioning.	None
Drainage	The Scheme would be located over 6km from the Broads SAC, Broadlands SPA and Ramsar and therefore will not have any influence on the drainage processes at these European Sites.	None
Inappropriate cutting/mowing	The land management being implemented by the Scheme will be restricted to the Order Limits and accordingly will not change the management of habitats within the European Sites.	None
Change in land management		None
Inappropriate ditch management		None

Identified Pressure or Threat	Rationale for Threat or Pressure Arising from the Scheme	Potential Pathway
Undergrazing		None
Overgrazing		None
Inappropriate scrub control		None
Invasive species	Three stands of Japanese knotweed <i>Fallopia japonica</i> were recorded within Site 3 and significant areas of giant hogweed <i>Heracleum mantegazzianum</i> were recorded within Sub-Site 5A. The location of these stands of invasive plant species is over 5km from the closest components of the SACs, SPA and Ramsar within the Zol and therefore the risk of spread is low, especially as there will be no movement of soils offsite. Standard control measures will be put in place during the construction, operation (and maintenance) and decommissioning phases to prevent the spread of these invasive species offsite; detailed within the Outline Landscape and Ecology Management Plan [EN0110014/APP/7.4] . Measures will include habitat protection buffers, toolbox talks, employment of an Ecological Clerk of Works (ECoW) and traffic management measures.	None
Climate change	The Scheme will facilitate the increase in renewable energy production. As a result, the Scheme is likely to have significant beneficial impacts on greenhouse gas emissions, as detailed within ES Volume 1 Chapter 6: Climate Change . Accordingly, the Scheme will not contribute to process that affect climate change, and therefore there are no predicted impacts on qualifying species.	None
Change in species distributions	The Scheme has potential to affect European Sites through changes in habitat availability for qualifying species, namely mobile avian species supported by Broadland SAC and Broadland Ramsar. Given the separation distance between the Order Limits and the European Sites, the Scheme will not directly impact any habitats located within the European Sites and is unlikely to directly affect the distributions of the qualifying species of the European Sites. As requested by NE in their consultation response, this sHRA provides full justification and evidence for the assumption that the Scheme will not impact mobile qualifying avian species. This is provided in Section 4 below.	Yes
Public access/disturbance	Temporary closures of Public Rights of Way (PRoWs) have potential to affect local permissive routes during the construction phase of the Scheme, albeit it is highly unlikely that users would be rerouted to The Broads SAC or Broadland SPA/Ramsar given the distance of separation between the Scheme and these European Sites. The Scheme will not change the accessibility of the European Sites to the public, nor will it increase the recreational pressure on the European Sites by resulting in any significant increase in people working or living in the local vicinity.	None

Identified Pressure or Threat	Rationale for Threat or Pressure Arising from the Scheme	Potential Pathway
Direct impact from third party (Ministry of Defence)	The threat identified by NE relates to the disturbance caused by police/military aircraft on birds at Cantley Marshes (SSSI component of The Broads SAC), located approximately 9.6km from the Order Limits. No MoD or RAF training grounds are located within the ZOI and the Scheme will have no influence aircraft activities in the area. As discussed above, the Scheme will not result in any public access/disturbance to the European Sites and therefore in-combination effects are not anticipated.	None
Inappropriate coastal management	The Scheme is located over 20km from the coast and the nature of the Scheme is such that no changes to coastal management will be caused.	None
Air pollution: impact of atmospheric nitrogen deposition	Parts of The Broads SAC and Broadland Ramsar are within 200m of major roads in the area including the A47 New Road (approximately 15km from the Order Limits), and the A146 Beccles Road (approximately 16km from the Order Limits). Accordingly, and in order to respond to consultation comments from NE, the potential for the Scheme to impact the European Sites through atmospheric nitrogen deposition is provided in Section 4 below.	Yes

4 Screening Assessment

4.1 Overview

4.1.1 As detailed in **Tables 3.2** and **3.3** above, the following potential impact pathways related to threats or pressures identified on European Sites within the Zol have been identified:

- Water pollution/siltation/inappropriate water levels/hydrological changes;
- Change in species distributions; and
- Air pollution: impact of atmospheric nitrogen deposition.

4.2 Water Pollution/Siltation/Inappropriate Water Levels/Hydrological Changes

4.2.1 An assessment has been made of the hydrological connectivity between European Sites and the Order Limits, which is set out in **ES Volume 3, Appendix 9.1 - Flood Risk Assessment and & Outline Surface Water Drainage Strategy [EN0110014/APP/6.3.9.1]**. The European Sites are located at a distance from the Scheme and are situated at a higher elevation, and/or are within a different catchment such that no hydrological connectivity has been identified.

4.2.2 Accordingly, there are no hydrological links which would allow pollution, siltation, changes in water levels or hydrological changes to the European Sites as a result of works during construction, operation (and maintenance) or decommissioning. As such there will be no LSE to the European Sites from pollution, siltation, changes in water levels or hydrological changes from the Scheme in isolation, or in-combination with other plans or projects.

4.3 Change in Species Distributions

4.3.1 Whilst NE agreed during consultation that impacts to qualifying bird species were unlikely and could be screened out, they nonetheless expected a full justification and explanation of this assumption within the HRA. Accordingly, this is provided below. All other qualifying features are either not considered mobile (e.g. snails) or are species with smaller territories/ranges than birds (e.g. otter) and have not been considered further in relation to impacts that may affect distribution.

4.3.2 As detailed in **Table 3.1** above, there are two European Sites with mobile avian qualifying species within the Zol; Broadland SPA and Broadland Ramsar. The qualifying mobile species are considered individually below.

Bittern

- 4.3.3 Broadland SPA is designated for supporting at least 10% of Great Britain's breeding population of Bittern. Bitterns are reliant on extensive, mature reedbed habitat which contains a mixture of reed edge and open water areas (Ref 25). Bitterns depend on reedbed and adjacent open water for their entire life cycle, including nesting, breeding and hunting.
- 4.3.4 Habitats within the Order Limits include arable crops, grassland, small parcels of woodland, boundary hedgerows and small ponds. No extensive reedbeds are present or have been identified near to the Order Limits. As such habitats within the Order Limits are not suitable to support this qualifying species.

Bewick's swan

- 4.3.5 Broadland SPA and Ramsar are both designated for supporting internationally important numbers of wintering Bewick's swan. Bewick's swan winter roosting sites are found in coastal lagoons and bays and freshwater lakes and reservoirs. Winter foraging grounds are typically focussed on wet pasture with increasing sightings on arable land.
- 4.3.6 The migratory patterns of Bewick's swans have changed considerably since the time of SPA and Ramsar designation, with very small numbers still migrating to Great Britain to overwinter (Ref 26). No wetland habitat is present within the Order Limits and there is a considerable distance between the Order Limits and the SPA and Ramsar. It is considered likely that the small numbers of Bewick's swans that overwinter in Norfolk would choose to roost and forage in more optimal habitats than those within the Order Limits, especially considering the undulating topography of the land. Accordingly, it is considered highly unlikely that the Scheme would have any impact on the distribution of Bewick's swan nor undermine the conservation objectives of the European Sites in respect of this qualifying species.

Whooper swan

- 4.3.7 Broadland SPA is designated for supporting 1.8% of Great Britain's wintering population of Whooper swan. Winter roosting sites are found in sheltered open freshwater lakes and other wetlands. Winter foraging grounds include open water and arable farmland (Ref 27).
- 4.3.8 No wetland habitat is present within the Order Limits, and there is a considerable distance between the Order Limits and the SPA. As with Bewick's swan, it is considered likely that the Whooper swans that overwinter in Norfolk would choose to roost and forage in more optimal habitats than those within the Order Limits, especially considering the undulating topography of the land. Accordingly, it is considered highly unlikely that the Scheme would have any impact on the distribution of

Whooper swan nor undermine the conservation objectives of the European Sites in respect of this qualifying species.

Marsh harrier

- 4.3.9 Broadland SPA is designated for supporting 10.2% of Great Britain's breeding population of Marsh harrier. Breeding marsh harrier primarily inhabit marshland and reedbeds but are also found hunting over farmland (Ref 28).
- 4.3.10 A data search of the area within 5km of the Order Limits identified no historic records for Marsh harrier. Breeding bird surveys conducted at the Order Limits in 2024 and 2025 also recorded no Marsh harrier, suggesting that the Order Limits does not support this species during the breeding season. Accordingly, it is considered highly unlikely that the Scheme would have any impact on the distribution of Marsh harrier nor undermine the conservation objectives of the European Sites in respect of this qualifying species.

Hen harrier

- 4.3.11 Broadland SPA is designated for supporting 2.9% of the Great Britain's overwintering population of Hen harrier. Hen harrier winter habitat includes coastal marshes, river valleys, fenland and nearby farmland.
- 4.3.12 No marshland, fenland or river valleys are present within or adjacent to the Order Limits, and there is a considerable distance between the Order Limits and the SPA. It is considered likely that Hen harrier home ranges would be centred on semi-natural habitats not found within the Order Limits, such as the Chet river valley located approximately 4.3km to the east of the Order Limits. Whilst a Hen harrier home range may extend up to 10km (Ref 29), it is considered that there are abundant similar opportunities for hunting Hen harrier in arable farmland in addition to those present within the Order Limits. Accordingly, it is considered highly unlikely that the Scheme would have any impact on the distribution of Hen harrier nor undermine the conservation objectives of the European Sites in respect of this qualifying species.

Ruff

- 4.3.13 Broadland SPA is designated for supporting 6.4% of Great Britain's overwintering population of Ruff. Ruff is a wading bird that is primarily found in tidal and wetland habitats and occasionally found in wet grasslands (Ref 30).
- 4.3.14 As there are no tidal or wet grassland habitats within or adjacent to the Order Limits, it is considered highly unlikely that this qualifying species would be present.

Eurasian wigeon

- 4.3.15 Broadland Ramsar site is designated for supporting 1.6% of Great Britain's overwintering population of Eurasian wigeon. Eurasian wigeon winter roosting sites are found in open water and marshland habitats. Winter foraging grounds are typically in flooded fields or wet grassland adjacent to open water roost sites (Ref 31).
- 4.3.16 As there are no open water or marshland habitats within or adjacent to the Order Limits, it is considered highly unlikely that this qualifying species would be present.

Gadwall

- 4.3.17 Broadland Ramsar site is designated for supporting 3.1% of Great Britain's overwintering population of Gadwall. Gadwall is a duck that relies on open water habitat (Ref 32).
- 4.3.18 As there are no open water or marshland habitats within or adjacent to the Order Limits, it is considered highly unlikely that this qualifying species would be present.

Northern shoveler

- 4.3.19 Broadland Ramsar site is designated for supporting 1.6% of Great Britain's overwintering population of Northern shoveler. Overwintering habitats include a variety of wetlands and open water (Ref 33), and they rely on shallow water for foraging.
- 4.3.20 As there are no open water or marshland habitats within or adjacent to the Order Limits, it is considered highly unlikely that this qualifying species would be present.

Change in Species Distributions - Conclusion

- 4.3.21 As set out in the sections above, habitats within the Order Limits are either not suitable to support qualifying bird species of the European Sites, or due the ecology of the species it is considered highly unlikely that the qualifying species would be present.
- 4.3.22 As such there will be no LSE to the European Sites from changes in species distributions from the Scheme in isolation, or in-combination with other plans or projects.

4.4 Air Pollution: Impact of Atmospheric Nitrogen Deposition

- 4.4.1 An assessment of potential increases in road traffic emissions from the Scheme at ecological receptors has been undertaken, as set out in **ES Volume 1, Chapter 13 - Air Quality [EN0110014/APP/6.1.13]**. This assessment demonstrates that increases in traffic on roads within 200m of the European Sites are below the relevant screening thresholds of 1,000 total AADT or 200 HDV AADT (Ref 34). This is true for the Scheme in isolation, and in-combination with other plans and projects.
- 4.4.2 Accordingly, changes to traffic flows associated with the Scheme are below published screening criteria and therefore will not result in likely significant effects to any European Site within the Zol through nitrogen deposition.

4.5 Screening Assessment Conclusion

- 4.5.1 A number of potential impact pathways have been identified between the Scheme and the identified European Sites within the Zol. However, information presented within this section in relation to hydrology, qualifying bird species and air quality demonstrates that LSE are not expected to any of the identified European Sites from the Scheme in isolation, or in-combination with other plans or projects. Accordingly, this HRA does not proceed to Appropriate Assessment stage.

5 Conclusion

- 5.1.1 This sHRA identified the following European Sites within 10km of the Scheme with the potential to be affected by the Project:
- Norfolk Valley Fens SAC;
 - The Broads SAC;
 - Broadland SPA; and
 - Broadland Ramsar.
- 5.1.2 The relevant threats/vulnerabilities identified for the qualifying features of these European Sites as a result of the Scheme were identified to relate to:
- Water pollution/siltation/inappropriate water levels/hydrological changes;
 - Change in species distributions; and
 - Air pollution: impact of atmospheric nitrogen deposition.
- 5.1.3 The screening assessment found no mechanism for impacts arising at the identified European Sites via these pathways. As such, no Likely Significant Effects have been identified at Norfolk Valley Fens SAC, The Broads SAC, Broadland SPA and Broadland Ramsar, either alone or in-combination with any other plan or project.
- 5.1.4 The sHRA does not proceed to Appropriate Assessment stage.

References

- Ref 1. HM Government (2017) The Conservation of Habitats and Species Regulations (2017) No. 1012
- Ref 2. Council Directive 92/43/EEC. 1992 No. 43. on the Conservation of natural habitats and of wild fauna and flora ('The Habitats Directive, 1992').
- Ref 3. Directive 2009/147/EC. 2009 No. 147. of the European Parliament and of the Council on the Conservation of Wild Birds ('The Birds Directive, 2009').
- Ref 4. HM Government (2019). The Conservation of habitats and Species (Amendment) (EU Exit) Regulations 2019. o. 579
- Ref 5. HM Government (2025). Department for Energy Security & Net Zero (DESNZ). Overarching National Policy Statement for Energy (EN-1)
- Ref 6. HM Government (2008). Planning Act 2008 c. 29
- Ref 7. HM Government (2025). DESNZ. National Policy Statement for Renewable Energy Infrastructure (EN-3)
- Ref 8. HM Government (2024). Planning Inspectorate Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments
- Ref 9. For the avoidance of doubt, the European Sites considered within this HRA report include the following, in accordance with the Habitats Regulations and the NPPF: Special Protection Areas (including Marine Components), potential Special Protection Areas, Special Areas of Conservation (including Marine Components), candidate Special Areas of Conservation, listed or proposed Ramsar sites.
- Ref 10. EWHC 1204 (2008) R (Hart District Council v ((1) The Secretary of State for Communities and Local Government (2) Luckmore Ltd (3) Barrat Homes Ltd) v ((1) Taylor Wimpey Developments Ltd (2) Natural England Interested Parties
- Ref 11. Judgement of the Court (seventh Chamber) 12 April 2018 Case C-323/17
- Ref 12. For the purpose of this assessment, 'site integrity' of a European Site is defined as being 'the coherence of its ecological structure and function across its whole area which enables it to sustain the habitats, complex of habitats and/or population levels of the species for which it was classified (or designated)' (UK Government, 2019).
- Ref 13. HM Government (2023). Department for Environment, Food & Rural Affairs (DEFRA). Environmental Principles Policy statement (updated January 2023)
- Ref 14. An 'appreciable effect' is an effect resulting in noticeable changes to a receptor.

- Ref 15. Joint Nature Conservation Committee. SACs in England Available at <https://sac.jncc.gov.uk/site/england> Accessed January 2026
- Ref 16. Joint Nature Conservation Committee. Special Protections Areas (SPAs) List of Sites <https://jncc.gov.uk/our-work/list-ofspas/#england> Accessed January 2026
- Ref 17. Natural England Site Improvement Plans: East of England <https://publications.naturalengland.org.uk/category/4873023563759616> Accessed January 2026
- Ref 18. Natural England (2018) Natural England's Approach to Advising Competent Authorities on the Assessment of Road Traffic Emissions under the Habitats Regulations (NEA001) <https://publications.naturalengland.org.uk/publication/4720542048845824>
- Ref 19. Joint Nature Conservation Committee. SACs in England Available at <https://sac.jncc.gov.uk/site/england> Accessed January 2026
- Ref 20. Joint Nature Conservation Committee. Special Protections Areas (SPAs) List of Sites <https://jncc.gov.uk/our-work/list-ofspas/#england> Accessed January 2026
- Ref 21. Chapman, C. & Tyldesley, D. (2016). Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions. Natural England Commissioned Reports, Number 207
- Ref 22. The Broadland SPA is located within 10km of the following Site sub-Sites: 7k (9.18km NE), 7l (9.33km NE), 8a (9.45km NE), 8b (9.04km NE), 9 (6.86km NE), 10a (8.08km NE), 10b (7.18km NE), 10c (7.80km NE), 10d (7.44km NE), 10e (6.65km NE).
- Ref 23. The Broadland Ramsar site is located within 10km of the following Site sub-Sites: 7k (9.18km NE), 7l (9.33km NE), 8a (9.45km NE), 8b (9.04km NE), 9 (6.86km NE), 10a (8.08km NE), 10b (7.18km NE), 10c (7.80km NE), 10d (7.44km NE), 10e (6.65km NE).
- Ref 24. The Ramsar Information Sheet (RIS) for Broadland Ramsar identifies no Adverse factors affecting the site's ecological character. However, on a precautionary basis, it has been assumed that the same threats and pressures affecting Broadland SPA will affect Broadland Ramsar. <https://jncc.gov.uk/jncc-assets/RIS/UK11010.pdf>
- Ref 25. Schofield, C. (2013) Reedbeds and bittern: An assessment of current status in Greater Lincolnshire. Available at <https://glnp.org.uk/images/uploads/news/reedbed-and-bittern-report-march-2013.pdf> Accessed January 2026
- Ref 26. <https://www.rspb.org.uk/birds-and-wildlife/bewicks-swan>

- Ref 27. <https://www.rspb.org.uk/birds-and-wildlife/whooper-swan>
- Ref 28. Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B., Thompson, D. (2013) Raptors: A field guide for surveys and monitoring. Third Edition. Available at <https://raptormonitoring.org/wp-content/uploads/2015/05/Raptors-2014-Part-2.pdf> Accessed January 2026
- Ref 29. Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B., Thompson, D. (2013) Raptors: A field guide for surveys and monitoring. Third Edition. Available at <https://raptormonitoring.org/wp-content/uploads/2015/05/Raptors-2014-Part-2.pdf> Accessed January 2026
- Ref 30. <https://www.shropshirewildlifetrust.org.uk/wildlife-explorer/birds/wading-birds/ruff>
- Ref 31. Portugal, S. and Guillemain, M. (2011) Vigilance patters of wintering Eurasian Wigeon: female benefits from male low-cost behaviour. J Ornithol.
- Ref 32. <https://www.bto.org/learn/about-birds/birdfacts/gadwall>
- Ref 33. <https://www.fws.gov/species/northern-shoveler-anas-clypeata>
- Ref 34. Natural England (2018). NE Internal Guidance – Approach to Advising Competent Authorities on Road Traffic Emissions and HRAs V1.4 Final - June 2018

Appendix A European Sites

A.1.1 A summary of the European Sites considered within this sHRA is set out below. For each European Site the closest component Site of Special Scientific Interest (SSSI) is also presented.

Site	Distance to Closest Site and CRC	Reason for Designation	Nearest Component SSSI
Norfolk Valley Fens SAC	2.38km NW of sub-Site 4A and 3.2km NW of CRC11	Annex I habitats that are a primary reason for selection of this site 7230 Alkaline fens Norfolk Valley Fens is one of two sites selected in East Anglia, in eastern England, where the main concentration of lowland Alkaline fens occurs. This site comprises a series of valley-head spring-fed fens. Such spring-fed flush fens are very rare in the lowlands. Most of the vegetation at this site is of the small sedge fen type, mainly referable to M13 <i>Schoenus nigricans</i> – <i>Juncus subnodulosus</i> mire, but there are transitions to reedswamp and other fen and wet grassland types. The individual fens vary in their structure according to intensity of management and provide a wide range of variation. There is a rich flora associated with these fens, including species such as grass-of-Parnassus <i>Parnassia palustris</i>, common butterwort <i>Pinguicula vulgaris</i>, marsh helleborine <i>Epipactis palustris</i> and narrow-leaved marsh-orchid <i>Dactylorhiza traunsteineri</i>. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>. 4030 European dry heaths. 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites). 6410 <i>Molinia</i> 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> * Priority feature. 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>)* Priority feature. Annex II species that are a primary reason for selection of this site 1014 Narrow-mouthed whorl snail <i>Vertigo angustior</i>	Flordon Common SSSI

Site	Distance to Closest Site and CRC	Reason for Designation	Nearest Component SSSI
		Norfolk Valley Fens represents narrow-mouthed whorl snail <i>Vertigo angustior</i> in East Anglia. At Flordon Common a strong population occurs in flushed grassland with yellow iris <i>Iris pseudacorus</i> maintained by light grazing. 1016 Desmoulin's whorl snail <i>Vertigo moulinsiana</i> Norfolk Valley Fens is one of several sites representing Desmoulin's whorl snail <i>Vertigo moulinsiana</i> in East Anglia. Within Norfolk Valley Fens there are a number of marginal fens around pingos – pools that formed in hollows left when large blocks of ice melted at the end of the last Ice Age. These are very ancient wetlands and several support strong populations of <i>V. moulinsiana</i> as part of a rich assemblage of Red Data Book and Nationally Scarce species in standing water habitat.	
The Broads SAC	6.65km NE of sub-Site 10E and 6.85km NE of CRC14	Annex I habitats that are a primary reason for selection of this site 3140 Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. The Broads is the richest area for charophytes in Britain (Stewart 1996). Twenty species have been recorded, which represents over 65% of the British flora. The core of this interest is the Thurne Broads and particularly Hickling Broad which is the richest site in the UK. Sixteen species have been recorded within Hickling Broad, a large shallow brackish lake. Within the Broads examples of <i>Chara</i> vegetation are also found within fen pools (turf ponds) and fen and marsh ditch systems. The Broads supports a number of rare and local charophyte species, including <i>Chara aspera</i>, <i>C. baltica</i>, <i>C. connivens</i>, <i>C. contraria</i>, <i>C. curta</i>, <i>C. intermedia</i>, <i>C. pedunculata</i>, <i>Nitella mucronata</i>, <i>Nitellopsis obtusa</i>, <i>Tolypella glomerata</i> and <i>T. intricata</i>. 3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation The Broads in East Anglia contain several examples of southern natural eutrophic lakes. Although artificial, having arisen from peat digging in medieval times, these lakes and the ditches in areas of fen and drained marshlands support relict vegetation of the original Fenland flora, and collectively this site contains one of the richest assemblages of rare and local aquatic species in the UK. The stonewort – pondweed – water-milfoil – water-lily Characeae – Potamogeton – Myriophyllum – Nuphar associations are well-represented, as are club-rush – common reed Scirpo – Phragmitetum associations. Some Broads, such as Martham North, Martham South and Upton Broad, have escaped the problem of enrichment that has so affected the flora and fauna on many of the other Broads. Others, such as Hickling Broad, are recovering from these effects as a result of remedial measures. Martham North, Martham	Yare Broads and Marshes SSSI

Site	Distance to Closest Site and CRC	Reason for Designation	Nearest Component SSSI
		South, Upton and Hickling Broad contain holly-leaved naiad <i>Najas marina</i>, a national rarity. The dyke (ditch) systems support vegetation characterised by water-soldier <i>Stratiotes aloides</i>, whorled water-milfoil <i>Myriophyllum verticillatum</i> and broad-leaved pondweed <i>Potamogeton natans</i>. 7140 Transition mires and quaking bogs The Broads contain examples of transition mire in a flood plain in the south-eastern part of the UK, where the habitat is rare. The areas of transition mire, mainly of M5 <i>Carex rostrata</i> – <i>Sphagnum squarrosum</i> mire, M9 <i>Carex rostrata</i> – <i>Calliergon cuspidatum/giganteum</i> mire and S27 <i>Carex rostrata</i> – <i>Potentilla palustris</i> tall-herb fen, are relatively small, having developed in re-vegetated peat-cuttings as part of a complex habitat mosaic of fen, carr and open water. 7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * Priority feature. This flood plain mire site in East Anglia has the largest example of calcareous fens in the UK and possibly the largest occurrence in the EU outside Sweden. The <i>Cladium</i> habitat occurs in a diverse set of conditions that maintain its species-richness, including managed <i>Cladium</i> fen, contacts between <i>Cladium</i> beds and small sedge mires, and situations where <i>Cladium</i> occurs at the limits of its ecological range. The habitat type forms large-scale mosaics with other fen types, open water and woodland, and important associated plant species are the Annex II 1903 Fen orchid <i>Liparis loeselii</i> (found at Upton Fen), marsh helleborine <i>Epipactis palustris</i>, lesser tussock-sedge <i>Carex diandra</i>, slender sedge <i>C. lasiocarpa</i> and fibrous tussock-sedge <i>C. appropinquata</i>. 7230 Alkaline fens The Broads is one of two sites selected for Alkaline fens in East Anglia, in eastern England, where a main concentration of lowland fen occurs. There are areas of short sedge fen (both M13 <i>Schoenus nigricans</i> – <i>Juncus subnodulosus</i> mire and M9 <i>Carex rostrata</i> – <i>Calliergon cuspidatum/giganteum</i> mire), which in places form a mosaic with S24 <i>Phragmites australis</i> – <i>Peucedanum palustris</i> fen. There are complex zonations present and many differences exist between the individual fens that comprise the site. The fens are principally of the flood plain mire type. The site contains a range of rare and local plant species, including the Annex II 1903 Fen orchid <i>Liparis loeselii</i>, lesser tussock-sedge <i>Carex diandra</i> and slender sedge <i>C. lasiocarpa</i>.	

Site	Distance to Closest Site and CRC	Reason for Designation	Nearest Component SSSI
		91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)* Priority feature The complex of sites in the Broads of East Anglia contains the largest blocks of alder <i>Alnus glutinosa</i> wood in England. Within the complex complete successional sequences occur from open water through reedswamp to alder woodland, which has developed on fen peat. There is a correspondingly wide range of flora, including a number of uncommon species such as marsh fern <i>Thelypteris palustris</i>. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) Annex II species that are a primary reason for selection of this site. 1016 Desmoulin's whorl snail <i>Vertigo moulinsiana</i> The Broads is the main stronghold of Desmoulin's whorl snail <i>Vertigo moulinsiana</i> in East Anglia and is one of several sites selected in this part of its range. Several large populations are known, associated with standing and flowing water and ditch systems. This is a very important area for its wetland invertebrate fauna, and many Red Data Book and Nationally Scarce species occur here. 1903 Fen orchid <i>Liparis loeselii</i>. The Broads in eastern England provide representation of the Fenland form of fen orchid <i>Liparis loeselii</i> in the eastern part of its UK range. Three small populations of var. <i>loeselii</i> are known to occur on this site, and 242 plants were found in 1996. 4056 Ramshorn snail <i>Anisus vorticulus</i>. <i>Anisus vorticulus</i> occurs across a range of sites in southern and eastern England. The Broads is one of the three main population centres for this species in the UK. Annex II species present as a qualifying feature, but not a primary reason for site selection 1355 Otter <i>Lutra lutra</i>	
Broadland SPA	6.65km NE of sub-Site 10E and 6.85km NE of CRC14	ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports: ▪ <i>Botaurus stellaris</i> (Europe - breeding) at least 10% of the GB breeding population three year mean 1996-1998. ▪ <i>Circus aeruginosus</i> 10.2% of the GB breeding population, year mean, 1987/8-1991/2.	Yare Broads and Marshes SSSI

Site	Distance to Closest Site and CRC	Reason for Designation	Nearest Component SSSI
		Over winter the area regularly supports: ▪ Circus cyaneus 2.9% of the GB population 5 year peak mean 1987/8-1991/2. ▪ Cygnus columbianus bewickii (Western Siberia/North-eastern & North-western Europe) at least 8.2% of the GB population count, as at 1996/7. ▪ Cygnus cygnus (Iceland/UK/Ireland) 1.8% of the GB population count, as at 1996/7. Philomachus pugnax 6.4% of the GB population 5 year mean 1987/88-1991/2. ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: ▪ Anas strepera (North-western Europe) 0.8% of the population 5 year peak mean, 1991/2-1995/6.	
Broadland Ramsar	6.65km NE of sub-Site 10E and 6.85km NE of CRC14	Ramsar criterion 2 The site supports a number of rare species and habitats within the biogeographical zone context, including the following Habitats Directive Annex I feature. H7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae. Calcium-rich fen dominated by great fen sedge (saw sedge). H7230 Alkaline fens Calcium-rich springwater-fed fens. H91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) Alder woodland on floodplains, and the Annex II species. S1016 Vertigo moulinsiana Desmoulin's whorl snail. S1355 Lutra lutra Otter. S1903 Liparis loeselii Fen orchid. The site supports outstanding assemblages of rare plants and invertebrates including nine British Red Data Book plants and 136 British Red Data Book invertebrates. Ramsar criterion 6 Qualifying Species/populations (as identified at designation). Species with peak counts in winter: Tundra swan, Cygnus columbianus bewickii, NW Europe 196 individuals, representing an average of 2.4% of the GB population (5 year peak mean 1998/9-2002/3).	Yare Broads and Marshes SSSI

Site	Distance to Closest Site and CRC	Reason for Designation	Nearest Component SSSI
		Eurasian wigeon, <i>Anas penelope</i>, NW Europe 6769 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3). Gadwall, <i>Anas strepera strepera</i>, NW Europe 545 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1998/9-2002/3). Northern shoveler, <i>Anas clypeata</i>, NW & C Europe 247 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3). Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter: ▪ Pink-footed goose, <i>Anser brachyrhynchus</i>, Greenland, Iceland/UK 4263 individuals, representing an average of 1.7% of the population (5 year peak mean 1998/9-2002/3). ▪ Greylag goose, <i>Anser anser anser</i>, Iceland/UK, Ireland 1007 individuals, representing an average of 1.1% of the population (Source period not collated).	

Appendix B Conservation Objectives and Threats Affecting Site Integrity

B.1.1 Summary of the relevant Conservation Objectives for each of the European Sites, along with a summary of the factors affecting their integrity from Standard Forms and Natural England SIPS.

Site	Relevant Conservation Objectives (from Natural England Conservation Objectives)	Threats Affecting Site Integrity (from Natura Standard Data Form and SIPS, as Required)
Norfolk Valley Fens SAC	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; ▪ 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. Qualifying Features: ▪ H4010. Northern Atlantic wet heaths with <i>Erica tetralix</i>; Wet heathland with cross-leaved heath ▪ H4030. European dry heaths ▪ H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>); Dry grasslands and scrublands on chalk or limestone ▪ H6410. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>); Purple moor-grass meadows ▪ 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*	▪ Water Pollution ▪ Inappropriate cutting/mowing ▪ Invasive species ▪ Inappropriate water levels ▪ Hydrological changes ▪ Water abstraction ▪ Change in land management ▪ Inappropriate scrub control ▪ Change in species distributions ▪ Undergrazing ▪ Overgrazing ▪ Air pollution: impact of atmospheric nitrogen deposition

Site	Relevant Conservation Objectives (from Natural England Conservation Objectives)	Threats Affecting Site Integrity (from Natura Standard Data Form and SIPS, as Required)
	▪ S1014. <i>Vertigo angustior</i>; Narrow-mouthed whorl snail S1016. <i>Vertigo moulinsiana</i>; Desmoulin's whorl snail	
The Broads SAC	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; ▪ 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. Qualifying Features: ▪ H3140. Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.; Calcium-rich nutrient-poor lakes, lochs and pools ▪ H3150. Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation; Naturally nutrient-rich lakes or lochs which are often dominated by pondweed ▪ H6410. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>); Purple moor-grass meadows ▪ H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable 'quaking' surface ▪ 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* ▪ S1016. <i>Vertigo moulinsiana</i>; Desmoulin's whorl snail	▪ Water Pollution ▪ Climate change ▪ Invasive species ▪ Siltation ▪ Inappropriate water levels ▪ Hydrological changes ▪ Water abstraction ▪ Change in land management ▪ Inappropriate ditch management ▪ Inappropriate scrub control ▪ Change in species distributions ▪ Public access/disturbance ▪ Undergrazing ▪ Drainage ▪ Direct impact from third party (Ministry of Defence) ▪ Inappropriate coastal management ▪ Air pollution: impact of atmospheric nitrogen deposition

Site	Relevant Conservation Objectives (from Natural England Conservation Objectives)	Threats Affecting Site Integrity (from Natura Standard Data Form and SIPS, as Required)
	▪ S1355. <i>Lutra lutra</i>; Otter ▪ S1903. <i>Liparis loeselii</i>; Fen orchid ▪ S4056. <i>Anisus vorticulus</i>; Little whorlpool ▪ ram's-horn snail	
Broadland SPA	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; ▪ 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. Qualifying Features: ▪ A021 <i>Botaurus stellaris</i>; Great bittern (Breeding) ▪ A037 <i>Cygnus columbianus bewickii</i>; Bewick's swan (Non-breeding) ▪ A038 <i>Cygnus cygnus</i>; Whooper swan (Non-breeding) ▪ A050 <i>Anas penelope</i>; Eurasian wigeon (Non-breeding) ▪ A051 <i>Anas strepera</i>; Gadwall (Non-breeding) ▪ A056 <i>Anas clypeata</i>; Northern shoveler (Non-breeding) ▪ A081 <i>Circus aeruginosus</i>; Eurasian marsh harrier (Breeding) ▪ A082 <i>Circus cyaneus</i>; Hen harrier (Non-breeding) ▪ A151 <i>Philomachus pugnax</i>; Ruff (Non-breeding)	▪ Water Pollution ▪ Climate change ▪ Invasive species ▪ Siltation ▪ Inappropriate water levels ▪ Hydrological changes ▪ Water abstraction ▪ Change in land management ▪ Inappropriate ditch management ▪ Inappropriate scrub control ▪ Change in species distributions ▪ Public access/disturbance ▪ Undergrazing ▪ Drainage ▪ Direct impact from third party (Ministry of Defence) ▪ Inappropriate coastal management ▪ Air pollution: impact of atmospheric nitrogen deposition
Broadland Ramsar	None available.	No threats identified in Standard Data Form. No SIP available.

Appendix C Citations/Natura 2000 Data Sheets

STANDARD DATA FORM for sites within the 'UK national site network of European sites'

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the [Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 \(2011/484/EU\)](#).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the [SPA homepage](#) and [SAC homepage](#) on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

<https://jncc.gov.uk/>



NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE UK0012892
SITENAME Norfolk Valley Fens

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- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. SITE MANAGEMENT](#)

1. SITE IDENTIFICATION

1.1 Type B	1.2 Site code UK0012892	Back to top
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1.3 Site name

Norfolk Valley Fens

1.4 First Compilation date 1995-06	1.5 Update date 2015-12
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1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee
Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:

Date site proposed as SCI:	1995-06
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.8561111111	52.52666667

2.2 Area [ha]:

616.48

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
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UKH1	East Anglia
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2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

3.1 Habitat types present on the site and assessment for them

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Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A B C D	A B C		
						Representativity	Relative Surface	Conservation	Global
4010 <i>I</i>			6.78	0	G	C	C	B	C
4030 <i>I</i>			75.83	0	G	A	C	B	C
6210 <i>I</i>			10.48	0	G	C	C	B	C
6410 <i>I</i>			12.95	0	G	B	C	B	C
7150 <i>I</i>			1.23	0	G	D			
7210 <i>I</i>	X		14.18	0	G	C	B	B	C
7230 <i>I</i>			61.65	0	M	A	C	A	A
91E0 <i>I</i>	X		6.78	0	G	C	C	B	C

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A B C D	A B C		
						Min	Max				Pop.	Con.	Iso.	Glo.
M	1355	Lutra lutra			p				P	DD	D			
A	1166	Triturus cristatus			p				P	DD	D			
I	1014	Vertigo angustior			p				R	DD	B	B	A	B
I	1016	Vertigo moulinsiana			p				P	DD	C	B	C	B

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

4.1 General site character

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Habitat class	% Cover
N09	5.0
N16	30.0
N06	5.0
N08	30.0
N10	5.0
N07	25.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: nutrient-poor,acidic,peat,basic 2 Terrestrial: Geomorphology and landscape: lowland,valley

4.2 Quality and importance

Northern Atlantic wet heaths with *Erica tetralix* for which the area is considered to support a significant presence. European dry heaths for which the area is considered to support a significant presence. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) for which the area is considered to support a significant presence. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) for which the area is considered to support a significant presence. Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* for which the area is considered to support a significant presence. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Alkaline fens for which this is considered to be one of the best areas in the United Kingdom. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) for which the area is considered to support a significant presence. *Vertigo moulinsiana* for which this is considered to be one of the best areas in the United Kingdom. *Vertigo angustior* for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
H	A03		I
H	H02		B
H	J02		B
H	K02		I

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
H	A04		I
H	A02		I
H	B02		I

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): <http://publications.naturalengland.org.uk/category/6490068894089216>

<http://publications.naturalengland.org.uk/category/3212324>

http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

5.1 Designation types at national and regional level:

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Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
☒	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the [official European Union guidelines for the Standard Data Form](#) (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glaucio-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippophya• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist scree of the montane to alpine levels (Thlaspietalia rotundifoliae)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robur-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, scree and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representativity	57
B	Good representativity	57
C	Significant representativity	57
D	Non-significant presence representativity	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code
-----	--	------------------

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic resources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Norfolk Valley Fens
Unitary Authority/County:	Norfolk
SAC status:	Designated on 1 April 2005
Grid reference:	TL937960
SAC EU code:	UK0012892
Area (ha):	616.21
Component SSSI:	Badley Moor, Dereham SSSI, Booton Common SSSI, Buxton Heath SSSI, Coston Fen, Runhall SSSI, East Walton Common and Adcock's Common SSSI, Flordon Common SSSI, Foulden Common SSSI, Great Cressingham Fen SSSI, Holt Lowes SSSI, Potter and Scarning Fens SSSI, Sheringham and Beeston Regis Common SSSI, South Repps Common SSSI, Swangey Fen, Attleborough SSSI, Thompson Water, Carr and Common SSSI

Site description:

This site comprises a series of valley-head spring-fed fens. Such spring-fed flush fens are very rare in the lowlands. The spring-heads are dominated by the small sedge fen type, mainly referable to black-bog-rush – blunt-flowered rush (*Schoenus nigricans* – *Juncus subnodulosus*) mire, but there are transitions to reedswamp and other fen and wet grassland types. The individual fens vary in their structure according to intensity of management and provide a wide range of variation. There is a rich flora associated with these fens, including species such as grass-of-Parnassus *Parnassia palustris*, common butterwort *Pinguicula vulgaris*, marsh helleborine *Epipactis palustris* and narrow-leaved marsh-orchid *Dactylorhiza traunsteineri*.

In places the calcareous fens grade into acidic flush communities on the valley sides. Purple moor-grass *Molinia caerulea* is often dominant with a variety of mosses including thick carpets of bog-moss *Sphagnum* spp. Marshy grassland may be present on drier ground and purple moor-grass is again usually dominant but cross-leaved heath *Erica tetralix* can be frequent. Alder *Alnus glutinosa* forms carr woodland in places by streams. Wet and dry heaths and acid, neutral and calcareous grassland surround the mires.

Within the Norfolk Valley Fens there are a number of marginal fens associated with pingos – pools that formed in hollows left when large blocks of ice melted at the end of the last Ice Age. These are very ancient wetlands and several support strong populations of Desmoulin's whorl snail *Vertigo moulinsiana* as part of a rich assemblage of rare and scarce species in standing water habitat. At Flordon Common a strong population of narrow-mouthed whorl snail *Vertigo angustior* occurs in flushed grassland with yellow iris *Iris pseudacorus*.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Alkaline fens. (Calcium-rich springwater-fed fens)
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*). (Alder woodland on floodplains)*
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. (Calcium-rich fen dominated by great fen sedge (saw sedge))*
- European dry heaths
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). (Purple moor-grass meadows)
- Northern Atlantic wet heaths with *Erica tetralix*. (Wet heathland with cross-leaved heath)
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). (Dry grasslands and scrublands on chalk or limestone)

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Narrow-mouthed whorl snail *Vertigo angustior*
- Desmoulin's whorl snail *Vertigo moulinsiana*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0012892
Date of registration: 14 June 2005
Signed: [REDACTED]
On behalf of the Secretary of State for Environment,
Food and Rural Affairs

STANDARD DATA FORM for sites within the 'UK national site network of European sites'

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the [Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 \(2011/484/EU\)](#).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the [SPA homepage](#) and [SAC homepage](#) on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

<https://jncc.gov.uk/>



NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE UK0013577

SITENAME The Broads

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- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. SITE MANAGEMENT](#)

1. SITE IDENTIFICATION

1.1 Type B	1.2 Site code UK0013577	Back to top
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1.3 Site name

The Broads

1.4 First Compilation date 1996-01	1.5 Update date 2015-12
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1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee
Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:

Date site proposed as SCI:	1996-01
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude

1.603611111

Latitude

52.73527778

2.2 Area [ha]:

5889.43

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code

Region Name

UKH1

East Anglia

2.6 Biogeographical Region(s)

Atlantic (100.0
%)

3. ECOLOGICAL INFORMATION

3.1 Habitat types present on the site and assessment for them

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Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A B C D	A B C		
						Representativity	Relative Surface	Conservation	Global
3140 			175.51	0	G	A	A	A	A
3150 			292.12	0	G	A	B	A	B
6410 			58.31	0	G	B	C	A	C
7140 			5.89	0	G	B	C	A	B
7210 	X		209.07	0	G	A	A	A	A
7230 			5.89	0	G	A	C	A	B
91E0 	X		763.27	0	G	A	B	A	A

- PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- NP:** in case that a habitat type no longer exists in the site enter: x (optional)

- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A B C D	A B C		
						Min	Max				Pop.	Con.	Iso.	Glo.
I	4056	Anisus vorticulus			p				P	DD	B	B	C	B
P	1903	Liparis loeselii			p	251	500	i		M	C	B	A	B
M	1355	Lutra lutra			p	23	23	i		G	C	A	C	C
A	1166	Triturus cristatus			p				P	DD	D			
I	1016	Vertigo moulinsiana			p				P	DD	C	A	C	A

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

4.1 General site character

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Habitat class	% Cover
N08	1.0
N09	1.0
N10	39.0
N16	24.0
N07	19.0
N06	16.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: nutrient-poor,alluvium,basic,nutrient-rich,clay,peat 2 Terrestrial: Geomorphology and landscape: floodplain,lowland,valley

4.2 Quality and importance

Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. for which this is considered to be one of the best areas in the United Kingdom. Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation for which this is considered to be one of the best areas in the United Kingdom. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinia caerulea) for which the area is considered to support a significant presence. Transition mires and quaking bogs for which this is considered to be one of the best areas in the United Kingdom. Calcareous fens with Cladium mariscus and species of the Caricion davallianae for which this is considered to be one of the best areas in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Alkaline fens for which this is considered to be one of the best areas in the United Kingdom. Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) for which this is considered to be one of the best areas in the United Kingdom. Liparis loeselii for which this is one of only three known outstanding localities in the United Kingdom. which is known from 15 or fewer 10 x 10 km squares in the United Kingdom. Lutra lutra for which the area is considered to support a significant presence. Vertigo moulinsiana for which this is considered to be one of the best areas in the United Kingdom. Anisus vorticulus for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
H	M01		B
H	I01		B
H	H02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
H	A06		I
H	D05		I
H	A04		I
H	B02		I
H	D05		I
H	A02		I

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): <http://publications.naturalengland.org.uk/category/6490068894089216>

<http://publications.naturalengland.org.uk/category/3212324>

http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

5.1 Designation types at national and regional level:

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Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0	UK01	35.7		

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
☒	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the [official European Union guidelines for the Standard Data Form](#) (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glaucio-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippophya• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietalia rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion roburi-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representativity	57
B	Good representativity	57
C	Significant representativity	57
D	Non-significant presence representativity	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code
-----	--	------------------

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic resources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name: The Broads

Unitary Authority/County: Norfolk, Suffolk

SAC status: designated on 1 April 2005
Anisus vorticulus added: 11 February 2011

Grid reference: TG438209

SAC EU code: UK0013577

Area (ha): 5865.60

Component SSSI: Alderfen Broad SSSI, Ant Broads and Marshes SSSI, Barnby Broad and Marshes SSSI, Broad Fen, Dilham SSSI, Bure Broads and Marshes SSSI, Burgh Common and Muckfleet Marshes SSSI, Calthorpe Broad SSSI, Cantley Marshes SSSI, Crostwick Marsh SSSI, Damgate Marshes, Acle SSSI, Decoy Carr, Acle SSSI, Ducan's Marsh, Claxton SSSI, Geldeston Meadows SSSI, Hall Farm Fen, Hemsby SSSI, Halvergate Marshes SSSI, Hardley Flood SSSI, Limpenhoe Meadows SSSI, Ludham to Potter Heigham Marshes SSSI, Poplar Farm Meadows, Langley SSSI, Priors Meadows, Hickling SSSI, Shallam Dyke Marshes, Thurne SSSI, Smallburgh Fen SSSI, Sprat's Water and Marshes, Carlton Colville SSSI, Stanley and Alder Carrs, Aldeby SSSI, Trinity Broads SSSI, Upper Thurne Broads and Marshes SSSI, Upton Broad and Marshes SSSI, Yare Broads and Marshes SSSI

Site description:

The Broads in East Anglia contain several examples of naturally nutrient-rich lakes. Although artificial, having been created by peat digging in medieval times, these lakes and the ditches in areas of fen and drained marshlands support relict vegetation of the original Fenland flora, and collectively this site contains one of the richest assemblages of rare and local aquatic species in the UK. The stonewort – pondweed – water-milfoil – water-lily (*Characeae* – *Potamogeton* – *Myriophyllum* – *Nuphar*) associations are well-represented, as are club-rush – common reed *Scirpo* – *Phragmitetum* associations. The dyke (ditch) systems support vegetation characterised by water-soldier *Stratiotes aloides*, whorled water-milfoil *Myriophyllum verticillatum* and broad-leaved pondweed *Potamogeton natans* as well as being a stronghold of little whirlpool ram's-horn snail *Anisus vorticulus* and Desmoulin's whorl snail *Vertigo moulinsiana* in East Anglia. The range of wetlands and associated habitats also provides suitable conditions for otters *Lutra lutra*.

The Broads is the richest area for stoneworts (charophytes) in Britain. The core of this interest is the Thurne Broads and particularly Hickling Broad, a large shallow brackish lake. Within the Broads examples of *Chara* vegetation are also found within fen pools (turf ponds) and fen and marsh ditch systems. The Broads supports a number of rare and local charophyte species, including *Chara aspera*, *C. baltica*, *C. connivens*, *C. contraria*, *C. curta*, *C. intermedia*, *C. pedunculata*, *Nitella mucronata*, *Nitellopsis obtusa*, *Tolypella glomerata* and *T. intricata*.

The complex of sites contains the largest blocks of alder *Alnus glutinosa* wood in England. Within the complex complete successional sequences occur from open water through reedswamp to alder woodland, which has developed on fen peat. There is a correspondingly wide range of flora, including uncommon species such as marsh fern *Thelypteris palustris*.

This site contains the largest example of calcareous fens in the UK. The great fen-sedge *Cladium mariscus* habitat occurs in a diverse set of conditions that maintain its species-richness, including small sedge mires, and areas where great fen-sedge occurs at the limits of its ecological range. The habitat type forms large-scale mosaics with other fen types, fen-meadows (with purple moor-grass *Molinia caerulea*), open water and woodland, and contains important associated plants such as fen orchid *Liparis loeselii*, marsh helleborine *Epipactis palustris*, lesser tussock-sedge *Carex diandra*, slender sedge *C. lasiocarpa* and fibrous tussock-sedge *C. appropinquata*. There are also areas of short sedge fen (both black bog-rush – blunt-flowered rush *Schoenus nigricans* – *Juncus subnodulosus* mire and bottle sedge – moss *Carex rostrata* – *Calliergon cuspidatum/giganteum* mire), which in places form a mosaic with common reed – milk-parsley *Phragmites australis* – *Peucedanum palustris* fen. The Broads also contain examples of transition mire, that are relatively small, having developed in re-vegetated peat-cuttings as part of the complex habitat mosaic of fen, carr and open water.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Alkaline fens. (Calcium-rich spring water-fed fens)
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*). (Alder woodland on floodplains)*
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. (Calcium-rich fen dominated by great fen sedge (saw sedge))*
- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. (Calcium-rich nutrient-poor lakes, lochs and pools)
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). (Purple moor-grass meadows)
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation. (Naturally nutrient-rich lakes or lochs which are often dominated by pondweed)
- Transition mires and quaking bogs. (Very wet mires often identified by an unstable 'quaking' surface)

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Desmoulin's whorl-snail *Vertigo moulinsiana*
- Little whirlpool ram's-horn snail *Anisus vorticulus*
- Fen orchid *Liparis loeselii*
- Otter *Lutra lutra*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0013577
Date of registration: 11 February 2011

Signed: [Redacted]
On behalf of the Secretary of State for
Environment, Food and Rural Affairs

STANDARD DATA FORM for sites within the 'UK national site network of European sites'

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the [Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 \(2011/484/EU\)](#).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the [SPA homepage](#) and [SAC homepage](#) on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

<https://jncc.gov.uk/>



NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE UK9009253

SITENAME Broadland

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- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. SITE MANAGEMENT](#)

1. SITE IDENTIFICATION

1.1 Type A	1.2 Site code UK9009253	Back to top
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1.3 Site name

Broadland

1.4 First Compilation date 1994-09	1.5 Update date 2015-12
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1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee
Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1994-09
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/ukxi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/ukxi/2011/625/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

1.6

52.73222222

5508.88

0.0

0.0

2.5 Administrative region code and name

Region Name

UKH1	East Anglia
------	-------------

2.6 Biogeographical Region(s)

Atlantic (100.0%)

3. ECOLOGICAL INFORMATION

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3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

[illegible]

B	A151	Philomachus pugnax		w	96	96	i		G	B		C	
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- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

4.1 General site character

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Habitat class	% Cover
N10	41.0
N06	10.0
N07	25.0
N08	13.0
N02	2.5
N16	8.5
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: sedimentary,peat,basic,clay,nutrient-rich 2 Terrestrial: Geomorphology and landscape: valley,lowland,floodplain

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports: Botaurus stellaris (Europe - breeding) at least 10% of the GB breeding population Three year mean 1996-1998 Circus aeruginosus 10.2% of the GB breeding population 5 year mean, 1987/8-1991/2 Over winter the area regularly supports: Circus cyaneus 2.9% of the GB population 5 year peak mean 1987/8-1991/2 Cygnus columbianus bewickii (Western Siberia/North-eastern & North-western Europe) at least 8.2% of the GB population Count, as at 1996/7 Cygnus cygnus (Iceland/UK/Ireland) 1.8% of the GB population Count, as at 1996/7 ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Anas strepera (North-western Europe) 0.8% of the population 5 year peak mean, 1991/2-1995/6

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
H	I01		B
H	H02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
H	D05		I
H	A06		I
H	A02		I

H	M01		B
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H	D05		I
H	A04		I
H	B02		I

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): <http://publications.naturalengland.org.uk/category/6490068894089216>

<http://publications.naturalengland.org.uk/category/3212324>

http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	39.8	UK04	100.0		

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
☒	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the [official European Union guidelines for the Standard Data Form](#) (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glaucio-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippophya• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist scree of the montane to alpine levels (Thlaspietalia rotundifoliae)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robur-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, scree and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representativity	57
B	Good representativity	57
C	Significant representativity	57
D	Non-significant presence representativity	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code
-----	--	------------------

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic resources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

**EC Directive 79/409 on the Conservation of Wild Birds
Broadland Special Protection Area Norfolk & Suffolk**

Consultation proposal: Addition of Cantley Marshes Site of Special Scientific Interest and a further part of Halvergate Marshes SSSI.

Status: Broadland SPA classified on 21 September 1994. Extension classified June 1998.

Boundary: see maps.

Reason for extensions:

Broadland SPA, which includes these extensions, is of European importance because:

(a) It is used regularly by 1 % or more of the GB population of a species listed on Annex 1 of the Birds Directive (79/409/EEC) in any season:

Annex 1 species	5-yr peak mean from 1987/88-1991/2*	1996/1997
Bittern <i>Botaurus stellaris</i>	2-3(10-15% GB) ^M	-
Bewick's Swan <i>Cygnus columbianus bewickii</i>	495(7.1% GB) ^I	>600 8.6% GB) ^I
Whooper Swan <i>Cygnus cygnus cygnus</i>	121(2% GB) ^I	100 (1.8% GB) ^I
Marsh Harrier <i>Circus aeruginosus</i>	16(16% GB) ^F	-
Hen Harrier <i>Circus cyaneus</i>	22 (3% GB)	-
Ruff <i>Philomachus pugnax</i>	96 (6.4% GB)	-

Units of population size: M - booming males, F - breeding females, I - individual birds wintering

* Figures relate to the SPA boundary classified in 1994

(b) It is used regularly by 1 % or more of the biogeographic population of a regularly occurring migratory species (other than those listed on Annex 1) in any season:

Non-Annex 1 migratory bird species	5-yr peak mean from 1987/88-1991/92*	5-yr peak mean from 1990/91-1995/96
Wigeon <i>Anas penelope</i>	8,966(1.2% NW Europe)'	10,071 (1.34% o NW Europe)'
Gadwall <i>Anas strepera</i>	486 (4% NW Europe)'	240 (0.96% NW Europe)'
Shoveler <i>Anas clypeata</i>	675(1.7% NW Europe)'	<1% N W Europe'

Units of population size: 1- individual birds wintering

* Figures relate to the SPA boundary classified in 1994

Data sources

The Wetland Bird Survey: Wildfowl and Wader counts 1990/91 to 1995/96

Babbs, S., Cook, A.S. & Durdin, C. (1997). Broads ESA Wintering Waterfowl Survey 1996/97.

RSPB unpublished report, Norwich.

Carter, I. & Tolhurst, S. (1994). Broadland SPA citation

Carter, I. & Tolhurst, S. (1994). Broadland Ramsar site citation

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

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DD MM YY

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

Designated: 21 September 1994

3. Country:

UK (England)

4. Name of the Ramsar site:

Broadland

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. **For RIS updates only,** changes to the site since its designation or earlier update:

a) Site boundary and area:

**** Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) **hard copy** (required for inclusion of site in the Ramsar List): yes ✓ -or- no ☐;
- ii) **an electronic format** (e.g. a JPEG or ArcView image) Yes
- iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** yes ✓ -or- no ☐;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

52 43 56 N 01 36 00 E

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Great Yarmouth

Located in eastern Norfolk, part of East Anglia.

Administrative region: Norfolk; Suffolk

10. Elevation (average and/or max. & min.) (metres): **11. Area** (hectares): 5488.61

Min. -2

Max. 4

Mean 1

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Broadland is a low-lying wetland complex straddling the boundaries between east Norfolk and northern Suffolk. The area includes the river valley systems of the Bure, Yare and Waveney and their major tributaries. The open distinctive landscape comprises a complex and interlinked mosaic of wetland habitats including open water, reedbeds, carr woodland, grazing marsh and fen meadow. The region is important for recreation, tourism, agriculture and wildlife.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

2, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 2

The site supports a number of rare species and habitats within the biogeographical zone context, including the following Habitats Directive Annex I features:

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>) and the Annex II species	Alder woodland on floodplains,
S1016	<i>Vertigo moulinsiana</i>	Desmoulin's whorl snail
S1355	<i>Lutra lutra</i>	Otter
S1903	<i>Liparis loeselii</i>	Fen orchid.

The site supports outstanding assemblages of rare plants and invertebrates including nine British Red Data Book plants and 136 British Red Data Book invertebrates.

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in winter:

Tundra swan , <i>Cygnus columbianus bewickii</i> , NW Europe	196 individuals, representing an average of 2.4% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian wigeon , <i>Anas penelope</i> , NW Europe	6769 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)
Gadwall , <i>Anas strepera strepera</i> , NW Europe	545 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1998/9-2002/3)
Northern shoveler , <i>Anas clypeata</i> , NW & C Europe	247 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Species with peak counts in winter:

Pink-footed goose , <i>Anser brachyrhynchus</i> , Greenland, Iceland/UK	4263 individuals, representing an average of 1.7% of the population (5 year peak mean 1998/9-2002/3)
Greylag goose , <i>Anser anser anser</i> , Iceland/UK, Ireland	1007 individuals, representing an average of 1.1% of the population (Source period not collated)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	acidic, basic, neutral, clay, alluvium, peat, nutrient-rich, sedimentary
Geomorphology and landscape	lowland, valley, floodplain
Nutrient status	eutrophic, highly eutrophic, mesotrophic, oligotrophic
pH	acidic, alkaline, circumneutral
Salinity	brackish / mixosaline, fresh
Soil	mainly mineral, mainly organic
Water permanence	usually permanent, usually seasonal / intermittent
Summary of main climatic features	Annual averages (Lowestoft, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/lowestoft.html) Max. daily temperature: 13.0° C Min. daily temperature: 7.0° C Days of air frost: 27.8 Rainfall: 576.3 mm Hrs. of sunshine: 1535.5

General description of the Physical Features:

Broadland is a low-lying wetland complex in eastern England. The Broads are a series of flooded medieval peat cuttings within the floodplains of five principal river systems. The area includes the river valley systems of the Bure, Yare and Waveney and their major tributaries. The distinctive open landscape comprises a complex and interlinked mosaic of wetland habitats including open water, reedbeds, carr woodland, grazing marsh and fen meadow, forming one of the finest marshland complexes in the UK. The differing types of management of the vegetation for reed, sedge and marsh hay, coupled with variations in hydrology and substrate, support an extremely diverse range of plant communities.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Broadland is a low-lying wetland complex in eastern England. The Broads are a series of flooded medieval peat cuttings within the floodplains of five principal river systems. The area includes the river valley systems of the Bure, Yare and Waveney and their major tributaries. The distinctive open landscape comprises a complex and interlinked mosaic of wetland habitats including open water, reedbeds, carr woodland, grazing marsh and fen meadow, forming one of the finest marshland complexes in the UK.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Recharge and discharge of groundwater, Flood water storage / desynchronisation of flood peaks, Maintenance of water quality (removal of nutrients)

19. Wetland types:

Inland wetland

Code	Name	% Area
U	Peatlands (including peat bogs swamps, fens)	30
TP	Freshwater marshes / pools: permanent	30
W	Shrub-dominated wetlands	15
Xf	Freshwater, tree-dominated wetlands	10
O	Freshwater lakes: permanent	10
Q	Saline / brackish lakes: permanent	3
M	Rivers / streams / creeks: permanent	2

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The peatland areas of this site support: alder woodland on the floodplain dominated by *Alnus glutinosa* and the *Betula-Dryopteris cristata* community; mixed tall-herb fen typical of calcareous conditions are dominated by *Phragmites australis* and *Cladium mariscus*. The very wet mires are dominated by *Carex* spp. and *Juncus* spp., and spring-fed fens with *Schoenus nigricans*, *Carex dioica* and *Pinguicula nigricans*. Open waters are mostly highly eutrophic; however, some plant-rich mesotrophic and eutrophic examples remain, dominated by *Chara* sp., *Najas marina* and *Ceratophyllum demersum*. The ditch systems within the drained grasslands support Magnopotamion and Hydrocharition vegetation, often with *Stratiotes aloides*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

Nationally important species occurring on the site.**Higher Plants.**

Nationally Rare:

S1903 *Liparis loeselii* Fen orchid.

S1831 *Luronium natans* Floating water-plantain.

Najas marina, *Potamogeton acutifolius*, *Dryopteris cristata*

Nationally Scarce: *Althaea officinalis*, *Dactylorhiza traunsteineri*, *Potamogeton compressus*, *Potamogeton trichoides*, *Pyrola rotundifolia*, *Sonchus palustris*, *Cicuta virosa*, *Carex appropinquata*, *Thelypteris palustris*, *Lathyrus palustris*, *Potamogeton coloratus*, *Sium latifolium*, *Stratiotes aloides*, *Myriophyllum verticillatum*.

Lower Plants.

Nationally Rare: *Chara intermedia*, *Nitellopsis obtusa*, *Chara connivens*, *Chara intermedia* and *Cinclidium stygium*

Nationally scarce: *Chara curta*, *Drepanocladus vernicosus*, *Chara pendunculata*, *Campyllum elodes*, *Chara aspera*, *Ricciocarpus natans*, *Tolypella glomerata*.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Eurasian marsh harrier , <i>Circus aeruginosus</i> , Europe	16 pairs, representing an average of 10.5% of the GB population (5 year mean 1987/8-1991/2)
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Species with peak counts in spring/autumn:

Common coot , <i>Fulica atra atra</i> , NW Europe	3112 individuals, representing an average of 1.7% of the GB population (5 year peak mean 1998/9- 2002/3)
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Species with peak counts in winter:

Great cormorant , <i>Phalacrocorax carbo carbo</i> , NW Europe	273 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9- 2002/3)
Great bittern , <i>Botaurus stellaris stellaris</i> , W Europe, NW Africa	2 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9- 2002/3)
Bean goose , <i>Anser fabalis fabalis</i> , NW Europe - wintering	238 individuals, representing an average of 59.5% of the GB population (5 year peak mean for 1996/7-2000/01)
Greater white-fronted goose , <i>Anser albifrons albifrons</i> , NW Europe	351 individuals, representing an average of 6% of the GB population (Source period not collated)
Eurasian teal , <i>Anas crecca</i> , NW Europe	2934 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9- 2002/3)
Common pochard , <i>Aythya ferina</i> , NE & NW Europe	800 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9- 2002/3)
Smew , <i>Mergellus albellus</i> , NW & C Europe	10 individuals, representing an average of 2.7% of the GB population (5 year peak mean 1998/9- 2002/3)
Hen harrier, <i>Circus cyaneus</i> , Europe	22 individuals, representing an average of 2.9% of the GB population (5 year peak mean 1987/8- 1991/2)
Water rail , <i>Rallus aquaticus</i> , Europe	23 individuals, representing an average of 5.1% of the GB population (5 year peak mean 1998/9- 2002/3)
Ruff , <i>Philomachus pugnax</i> , Europe/W Africa	82 individuals, representing an average of 11.7% of the GB population (5 year peak mean 1998/9- 2002/3)

Species Information

Species occurring at levels of international importance.

Invertebrates.

S1016	<i>Vertigo moulinsiana</i>	Desmoulin's whorl snail
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Assemblage.

This site supports a diverse assemblage of invertebrates including:

Aeshna isosceles, *Papilio machaon britannicus*.

136 British Red Data Book invertebrate species have been recorded on the site.

Nationally important species occurring on the site.**Mammals.**

S1355 *Lutra lutra* Otter

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic

Aquatic vegetation (e.g. reeds, willows, seaweed)

Archaeological/historical site

Environmental education/ interpretation

Fisheries production

Forestry production

Livestock grazing

Non-consumptive recreation

Scientific research

Sport fishing

Sport hunting

Tourism

Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? **No**

If Yes, describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	
National/Crown Estate	+	

Private	+	+
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25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Collection of non-timber natural products: commercial	+	
Commercial forestry	+	+
Cutting/coppicing for firewood/fuel	+	+
Cutting of vegetation (small-scale/subsistence)	+	+
Fishing: commercial	+	+
Fishing: recreational/sport	+	+
Permanent arable agriculture		+
Rough or shifting grazing	+	+
Permanent pastoral agriculture	+	+
Hay meadows	+	+
Hunting: recreational/sport	+	+
Sewage treatment/disposal		+
Flood control	+	+
Irrigation (incl. agricultural water supply)		+
Mineral exploration (excl. hydrocarbons)		+
Transport route		+
Domestic water supply		+
Urban development		+
Non-urbanised settlements		+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.
2. Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

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For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?

Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	+
Site management statement/plan implemented	+	
Other	+	+
Environmentally Sensitive Area (ESA)	+	+
Special Area of Conservation (SAC)	+	

b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Contemporary.

Flora.

The entire site has had a vegetation survey, primarily fen, wet woodland and open water areas, lakes plus ditch systems, and this is now on GIS.

Monitoring is undertaken on the site, particularly freshwater and fen habitats.

Completed.

Fauna.

Wintering and breeding bird survey of all drained marshland area completed, results on a GIS.

Some species survey and monitoring, e.g. *Liparis loeselii*, *Lurionium natans* and a number of molluscs.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Many nature trails and footpaths with information boards and leaflets plus five visitor centres at Ranworth, Hickling, Strumpshaw, How Hill and Carlton Colville.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities.

The area attracts large numbers of tourists predominantly during the summer, many of which are water-borne. The river and broads (lakes) both within and adjacent to the site carry large numbers of power and sail craft which results in large-scale erosion and loss of fringing reedswamp. Speed limits have been imposed, however boat numbers remains too high.

Facilities provided.

Land-based recreation within the site is well managed, directing people to facilities where boardwalks are provided.

Seasonality.

All year.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Site-relevant references

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