



Cambridgeshire and Peterborough Minerals and Waste Local Plan

Habitats Regulations Assessment Scoping Report

October 2018

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Abbreviations

AA	Appropriate Assessment
CCC	Cambridgeshire County Council
cSAC	candidate SAC
DEFRA	Department for Environment, Food and Rural Affairs
HRA	Habitats Regulations Assessment
IRZ	Impact Risk Zone
JNCC	Joint Nature Conservation Committee
MPA	Minerals Planning Authority
MWLP	Minerals and Waste Local Plan
NE	Natural England
NPPF	National Planning Policy Framework
PCC	Peterborough City Council
pSPA	potential Special Protection Area
SAC	Special Areas of Conservation
SIP	Site Improvement Plan
SPA	Special Protection Areas
SSSI	Site of Special Scientific Interest
WPA	Waste Planning Authority

1. Background and Introduction

1.1 Requirement to undertake a Habitats Regulations Assessment

- 1.1.1. Habitats Regulations Assessments (HRA) must be carried out for all land use planning documents, which includes the MWLP, as required by UK legislation as set out in The Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations'). The purpose of such assessments is to ensure that the protection of European sites (which form a network termed 'Natura 2000' sites) is a full part of the planning process at all levels.
- 1.1.2. It is the responsibility of the Local Planning Authority as the 'competent authority' to ensure that Habitats Regulations Assessments are carried out in order that the integrity of European sites is maintained. The HRA process requires that European sites which could be affected by a Development Plan are identified and that potential significant effects of the Development Plan on the European sites are considered. The process of testing whether a Plan 'is likely to have a significant effect' on a European site, taking account of earlier more strategic HRA if applicable, is also referred to as 'Screening'. This is the process which determines whether more detailed steps of Appropriate Assessment need to follow. European sites are our most valuable sites for nature conservation. They are of international importance and they are often vulnerable to impacts brought about by development, whether such impacts are direct or indirect.
- 1.1.3. The Habitat Regulations set out what constitutes a 'European Site' (in Part 1, Regulation 8). The Natura 2000 network comprises of **Special Protection Areas** (SPAs) and **Special Areas of Conservation** (SACs). The Government also expects candidate SACs (cSACs), potential SPAs (pSPAs) and **Ramsar** sites to be included within the HRA¹. Ramsar sites support internationally important wetland habitats. For ease of reference, this document refers to all of the above sites as 'European sites' unless otherwise stated.

1.2 The emerging Minerals and Waste Local Plan

- 1.2.1. Cambridgeshire County Council (CCC) is the Waste Planning Authority (WPA) and Minerals Planning Authority (MPA) for the administrative area of Cambridgeshire, and Peterborough City Council (PCC) is the WPA and MPA for the unitary authority area of Peterborough.
- 1.2.2. CCC and PCC jointly prepared the current Minerals and Waste Development Plan (MWDP): the Core Strategy was adopted July 2011 and the Site Specific Proposals in February 2012. CCC and PCC have decided to jointly prepare the new Minerals

¹ NPPF (March 2012, para 118)

and Waste Local Plan (MWLP): when adopted, the new Plan will replace these existing Plans.

1.2.3. The intended timetable for the production of the MWLP is as follows:

- Preliminary Plan consultation - May 2018
- Further Draft consultation - March 2019
- Proposed Submission consultation - November 2019
- Submission of MWLP to Secretary of State - March 2020
- Adoption - November 2020

1.3 Purpose and Structure of this Scoping Report

1.3.1 No HRA work has been carried out to date on the emerging MWLP. This HRA Scoping Report represents the first stage of the HRA and as the Plan progresses the HRA will be updated. Whilst a scoping report is not a statutory requirement, i.e one that is set out in the Habitats Regulations, the purpose of this report is to seek Natural England's views, as the statutory consultation body for HRA, on the proposed approach to the HRA and the European sites identified to be considered in the Stage 1 HRA Screening.

2. Main stages of HRA, guidance and best practice

2.1 Stages of HRA

2.1.1 The HRA process is divided into three main stages as set out in **Table 2.1** below.

Table 2.1: Summary of main HRA stages

Stage	Task	Outcome
Stage 1: Screening	Description of the Plan Identification of potential effects on European sites Assessing the effects on European sites	Where effects are unlikely, prepare a 'finding of no significant effect' report. Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.
Stage 2: Appropriate Assessment	Gather information (Plan and European sites) Impact prediction Evaluation of impacts in view of conservation objectives Where impacts considered to affect qualifying features, identify alternative options Assess alternative options If no alternatives exist, define and evaluate mitigation measures where necessary	Appropriate assessment report describing the Plan, European site baseline conditions, the adverse effects of the Plan on the European site, how these effects will be avoided through, firstly, avoidance, and secondly, mitigation including the mechanisms and timescale for these mitigation measures. If significant effects remain after all alternatives and mitigation measures have been considered, proceed to Stage 3.
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify 'imperative reasons of overriding public interest' Identify potential compensatory measures	This stage should be avoided if at all possible.

2.1.2 The first step is to decide whether a Plan should be subject to HRA. This will depend on the type of Plan and on its potential effects on a European site. The first question in making the decision is; 'is the whole of the Plan directly connected with or necessary to the management of a European site for nature conservation purposes?'

If the answer is no, which is the case for the MWLP, the following sequence of stages should be undertaken:

Stage 1 – Screening

2.1.3 The process identifies whether a Plan, either alone or in combination with other plans or projects, is likely to have a significant effect on a European site. Current guidance (European Commission 2001)² on HRA recommends that the screening stage should comprise the following elements:

- Determining whether the Plan is directly connected with or necessary to the management of the site – if it is then no further assessment is necessary
- Describing the Plan and other plans and projects that, ‘in combination’, have the potential to have significant effects on a European site
- Identifying the potential effects on the site
- Assessing the likely significance of any effects

2.1.4 If the screening stage concludes that there are likely to be no significant impacts on European sites then there will be no need to progress to Stage 2.

Stage 2 - Appropriate Assessment (AA)

2.1.5 This is only required when the screening process determines that the Plan is likely to have a significant effect on a European site. An AA assesses the impacts of the proposed Plan against the conservation objectives of the qualifying features of the relevant European sites. Should the AA identify significant negative effects, alternatives should be examined to avoid any potential damaging effects. If no alternative exists, define and evaluate mitigation measures where necessary. If effects remain after all alternatives and mitigation measures have been considered, proceed to Stage 3.

Stage 3 – Assessment of Alternative Solutions

2.1.6 A Habitat Regulation Assessment only moves to this stage when significant effects on the integrity of a European site remain following the consideration of alternatives and development of mitigation measures in Stage 2. Stage 3 involves the process of identifying ‘imperative reasons of overriding public interest’. It must demonstrate that no alternatives exist and identify potential compensatory measures. This stage is a last resort and should be avoided if at all possible.

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http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf

- 2.1.7 If significant negative effects remain, a Plan may only be adopted under such circumstances if there are imperative reasons of overriding public interest, where it is deemed that the Plan should proceed.
- 2.1.8 The key stages that will be undertaken for the HRA of the Cambridgeshire and Peterborough MWLP are set out in **Appendix A**.

Precautionary Principle

- 2.1.9 The stages described above must be undertaken with the rigorous application of the precautionary principle. This requires those undertaking the exercise to be confident that the plan will not have a significant impact on relevant conservation objectives. Where uncertainty or doubt remains, an adverse impact should be assumed.

The Precautionary Principle

Prudent action that avoids the possibility of irreversible environmental damage in situations where the scientific evidence is inconclusive but the potential damage could be significant.

Key Definitions

- 2.1.10 A “significant” effect is one that could adversely impact on a European site’s integrity. The likelihood of it occurring should adopt the precautionary principle, taking into account the ecological circumstances of the site. A “likely” effect is one that cannot be ruled out on the basis of objective information. Significance will vary from site to site according to conservation sensitivities and magnitude of the potential impact. Assessment is triggered by likelihood, not certainty, in line with the precautionary principle. Therefore, the HRA (Stage 1 Screening) considers whether effects are ‘likely’ and ‘significant’. Those effects which are not obvious in view of the site’s conservation objectives may be disregarded. Significant effects are also determined in-combination with other plans or projects and take account of cumulative effects.
- 2.1.11 “Integrity” is defined as “...*the site’s coherence, ecological structure and function across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of species for which it was classified*” (ODPM Circular 06/2005, para.20). The ‘integrity test’ is undertaken during Stage 2 (AA).

2.2 HRA guidance and best practice

- 2.2.1 The Habitat Regulations do not prescribe a particular methodology for carrying out the HRA of Local Plans. The HRA of the Minerals and Waste Local Plan will be carried out in accordance with current available guidance and seeks to meet the requirements of the Habitats Regulations. The main guidance that will be referred to includes:

- Draft HRA guidance published by the Government: 'Planning for the Protection of European Sites: Appropriate Assessment' (DCLG, 2006) ; and
- Scottish Natural Heritage guidance on HRA of Plans: 'Habitats Regulation Appraisal of Plans Guidance for Plan Making Bodies in Scotland' (David Tyldesley and Associates for Scottish Natural Heritage, August 2010 and updated January 2015).

2.2.2 Although the later guidance is for Scottish Plan making bodies, the councils consider that the general principles and approaches set out in this guidance are transferable and can be applied to HRA in England, subject to minor revisions.

2.2.3 Additionally, the councils have taken into account case law to ensure the HRA work complies with the HRA requirements. In particular, this updated HRA takes into account the recent decision of the Court of Justice for the European Union in *People Over Wind & Sweetman v Coillte Teoranta*³ on 12th April 2018, which ruled that mitigation measures incorporated into a project cannot be taken into account at the screening stage. This means that a full and precise analysis of the measures capable of avoiding or reducing any significant effects on the site concerned must be carried out specifically at the stage of the AA and not as part of the screening stage. At the AA stage the competent authority should still assess whether mitigation is needed to avoid an adverse effect on site integrity or not; and if so, set out the mitigation measure(s) needed to ensure it.

³ <http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN>

3. European Sites

3.1 Identification of European Sites that may be affected by the MWLP

3.1.1 This section of the report identifies the European Sites that may be affected by development proposed in the MWLP.

3.2.2 The MWLP has the potential to impact on areas that are beyond the Plan area boundary. As a starting point, those European Sites within 15km of the MWLP Plan area have been considered. However, it is commonly recognised in HRA guidance that when considering the potential for effects on European sites that distance itself is not a definitive guide to the likelihood or severity of an impact. There are other factors that will influence the relative distance at which an impact can occur, such as the prevailing wind or river flow direction. This means that development proposed in a Local Plan that is some distance away from a European site could potentially affect the site, and therefore should be considered as part of HRA screening.

3.2.3 Rather than rely on distance alone, best practice is to use a 'source-pathway-receptor' model which focuses on whether there is a pathway by which impacts from the Plan can affect the vulnerabilities/sensitivities of a European sites' environmental conditions. The pathway is the route or mechanism by which any likely significant effect would be manifest in the environment and would reach the receptor. The potential pathways include:

- **Wind** – whether potential impacts can reach the European site/s via the prevailing wind;
- **River network** – whether impacts are connected by the river network to the European site/s;
- **Water supply** – the connectivity of the water supply;
- **Roads** – European site/s in relation to the road network and the feasibility of air, noise and light pollution from increased traffic on the roads, due to a greater population or greater accessibility;
- **Species movement** – distance between European site/s and the location of other important habitats within the boundary of the Plan area, such as SSSIs, Country Parks and Nature Reserves.

3.2.4 Using this approach, the European sites within or adjacent to the Plan area with the potential to be affected by the MWLP are identified in **Table 3.1** below. A map showing the location of these European Sites is provided overleaf in **Figure 3.1**. More distant European sites (i.e. those beyond 15km of the MWLP boundary) that may be functionally linked to the Plan area have been considered, however no potential impact pathways were identified from these sites to the MWLP area.

Table 3.1: European Sites that could potentially be affected by the MWLP

Name of Site	Location	Ramsar	SPA	SAC
Nene Washes	Wholly or partly within Peterborough	✓	✓	
Orton Pit	Wholly or partly within Peterborough			✓
Barnack Hills and Holes	Wholly or partly within Peterborough			✓
Fenland (Chippenham Fen, Wicken Fen and Woodwalton Fen)	Wholly or partly within Cambridgeshire	✓		✓
Portholme	Wholly or partly within Cambridgeshire			✓
Ouse Washes	Wholly or partly within Cambridgeshire	✓	✓	✓
Devil's Dyke	Wholly or partly within Cambridgeshire			✓
Eversden and Wimpole Woods	Wholly or partly within Cambridgeshire			✓
Baston Fen	Outside the Plan area (Lincolnshire) but within 15km			✓
Rutland Water	Outside the Plan area (Rutland) but within 15km	✓	✓	
Upper Nene Valley Gravel Pits	Outside the Plan area (Northamptonshire) but within 15km	✓	✓	
Breckland	Outside the Plan area (Suffolk) but within 15km	✓	✓	✓
The Wash	Outside the Plan area (Norfolk) but within 15km	✓	✓	
The Wash and North Norfolk	Outside the Plan area (Norfolk) but within 15km			✓
Grimsthorpe	Outside the Plan area (Lincolnshire) but within 15km			✓
Rex Graham Reserve	Outside the Plan area (Suffolk) but within 15km			✓

3.2.5 The sensitivities of each of the European Sites identified in **Table 3.1** above are set out in **Table 3.2** below and are based on a consideration of site qualifying features and the threats/pressures presented in **Appendix B**.

Table 3.2: Main sensitivities of identified European Sites

European Site	Sensitivities
Nene Washes	Water quality, water pollution, water quantity, noise and light pollution, disturbance and human presence, air pollution
Orton Pit	Water quality, water pollution, water quantity, disturbance and human presence, air pollution, land take, pests/invasive species
Barnack Hills and Holes	Air pollution, disturbance and human presence
Fenland (Chippenham Fen, Wicken Fen and Woodwalton Fen)	Water quality, water pollution, water quantity, pests/invasive species
Portholme	Water quality, water pollution, water quantity, pests/invasive species
Ouse Washes	Water quality, water pollution, water quantity, noise and light pollution, disturbance and human presence, pests/invasive species
Devil's Dyke	Air pollution, disturbance and human presence
Eversden and Wimpole Woods	Disturbance and human presence
Baston Fen	Water quality, water pollution, water quantity, pests/invasive species
Rutland Water	Water quality, water pollution, water quantity, disturbance and human presence
Upper Nene Valley Gravel Pits	Water quality, water pollution, water quantity, noise and light pollution, disturbance and human presence, air pollution, pests/invasive species
Breckland	Water quality, water pollution, water quantity, noise and light pollution, disturbance and human presence, air pollution, pests/invasive species
The Wash	Water quality, water pollution, water quantity, disturbance and human presence, land take, pests/invasive species

Grimsthorpe	Air pollution
Rex Graham Reserve	Air pollution

3.2 Sources of information

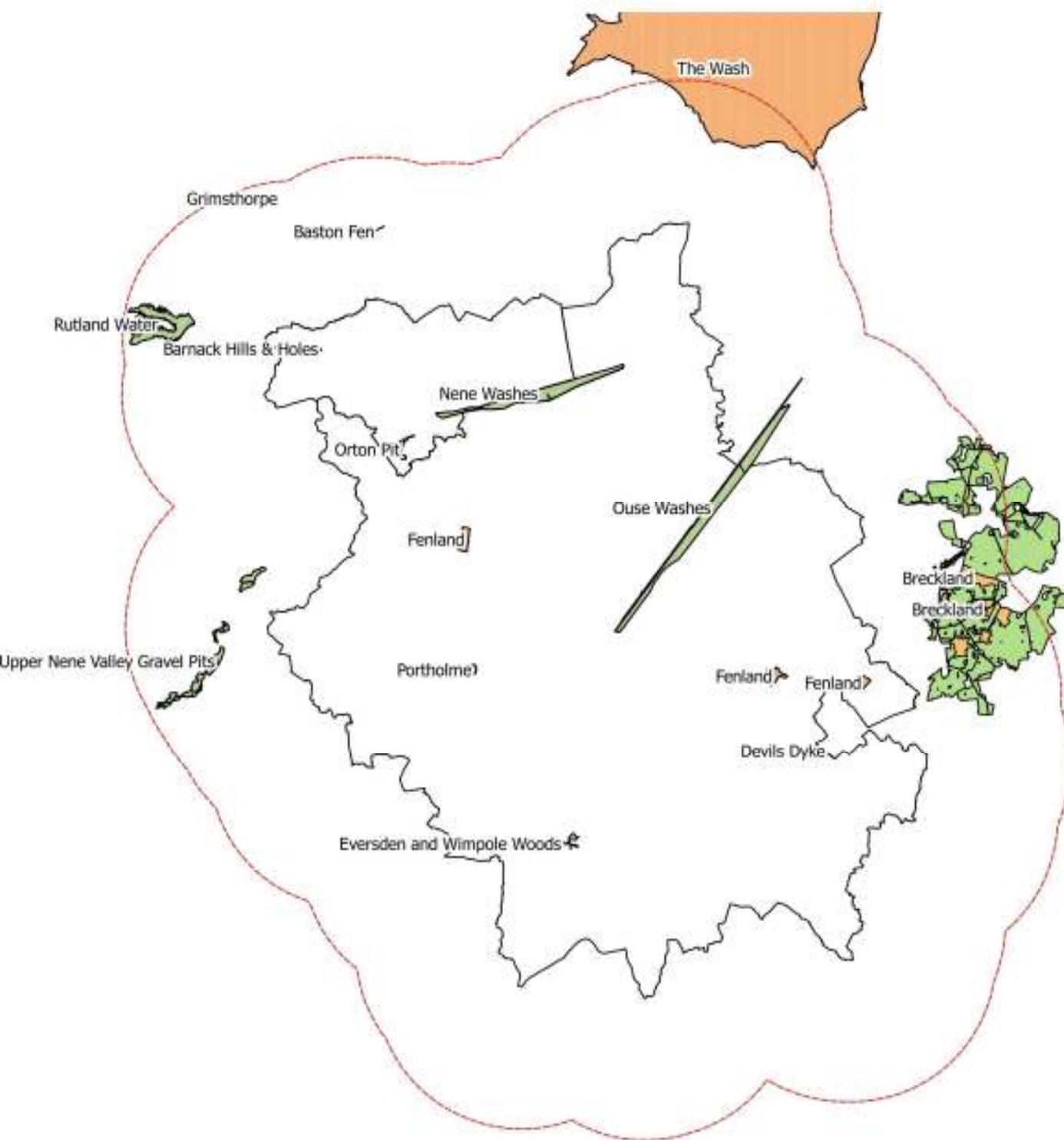
3.2.1 Information on each European site, including its features of interest, were taken from the Natura 2000 Data Form or the Information Sheet on Ramsar Wetlands for the designated site, accessed from the JNCC website (www.jncc.gov.uk). Additional details of each European site (where they are either a SPA or SAC) were taken from Natural England's Site Improvement Plans. The location, extent and site area of the European sites in GIS format was sourced from the UK Government Open Data Portal at <https://data.gov.uk/>.

Natural England's Impact Risk Zones

3.2.2 Natural England has developed a GIS tool and dataset to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

3.2.3 European sites are underpinned by the SSSI designation and their interest features and sensitivities are covered by the SSSI IRZs. Where the notified features of the European site and SSSI are different, the SSSI IRZs have been set so that they reflect both. The SSSI IRZs can therefore be used as part of a HRA to help determine whether there are likely to be significant effects from a particular development on the interest features of the European site. The IRZs are therefore a useful tool when considering the potential impact of proposed minerals and waste sites and will be drawn upon in the Stage 1 HRA Screening of the Cambridgeshire and Peterborough MWLP.

Figure 3.1 Location of European Sites within 15km of the Plan Area Boundary



4. Approach to the HRA

4.1 Screening Methodology

Stages in the HRA Screening Process

4.1.1 The HRA screening process is summarised in **Table 4.1** below and detailed in **Appendix A**. The HRA process is iterative and will be revisited as the MWLP develops.

Table 4.1: HRA Stage 1 Screening Key Stages

Stages	Habitats Regulation Assessment
Stage 1. Screening for likely significant effects	Task 1 - Identify European sites in and around the Plan area that should be considered in the assessment.
	Task 2 – Gather information on the European sites, including the vulnerabilities of their qualifying features, conservation objectives and condition of site. Identify the changes to environmental conditions that may occur as a result of implementing the Plan.
	Task 3 - Identify key components of the emerging Minerals and Waste Local Plan, including the Plan objectives and policies.
	Task 4 – Determine, through a screening exercise, all aspects of the Plan which would have no effect on a European site and those aspects where it is not possible to rule out the risk of significant effects, either alone or in combination with other plans or projects.
	Task 5 - Consider whether other plans or projects, in conjunction with the Minerals and Waste Local Plan, would have the potential for adverse effects on the qualifying features of identified sites.
	Task 6 - Conclude whether there are likely significant effects. If there are no likely significant effects, consult Natural England on the screening recommendation that the further AA stages of the HRA are not necessary;
	Task 7 – If, after Task 6 significant effects are judged likely

	or uncertainty exists, or Natural England disagrees with the screening recommendation that an AA is not necessary proceed to Stage 2 AA.
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Screening Approach

4.1.2 The screening of the Plan involves a series of steps to remove or ‘screen out’ those elements of the Plan that are not likely to have a significant effect on a European Site, and to ensure other aspects of the Plan are ‘screened in’ where further appraisal is required. An assessment of the Plan will be undertaken using the criteria set out in **Table 4.2**. These are broadly based on the screening categories set out within the HRA guidance for Scotland.

4.1.3 When considering significant effects, effects which would not undermine the conservation objectives of a European site should not be regarded as significant: thus, where a policy/aspect of the Plan may potentially have a *positive* significant effect on a European site, this policy/part can be ‘screened out’ because the impact would not be negative.

Table 4.2: Screening Categories for HRA Screening: Categorising the Potential Effects of the Plan

Screening Category	Type of Policy
‘N’ categories: screened out or eliminated elements of the Plan (Appropriate Assessment not required) Plan elements assessed as not likely to have a significant effect on a European site if implemented, either alone or in combination with effects from other plans or projects	
N1	General Policy Statement General strategy statement or general criteria based policy not likely to have a significant effect as the policy will not lead to development itself.
N2	Policy refers to proposals that are not generated by the Plan and therefore excluded from the assessment. For example, a policy that refers to a transport project, which is identified in another Plan and possibly by another authority (and this will have been subject to HRA for the other Plan).
N3	Policies that intend to protect, conserve or enhance the natural (including biodiversity), built or historic environment, or that positively steers development away from European sites.
N4	Policy that will not lead to development or other change, because it is qualitative or design criteria based, which guide development.
N5	Policy makes provision for change or promotes development but would have no likely significant effect on a European site

	<p>Policies that promote development, but have no likely significant (negative) effect because there is no physical, ecological, hydrological, chemical or biological link or pathway between the changes the policy may cause and the site's qualifying interests of any European site. This category also covers policies that may have a positive effect; or would not otherwise undermine the conservation objectives for the site.</p> <p>A Plan's positive effects on a site cannot be regarded as 'significant' and can therefore be 'screened out'.</p>
N6	<p>Policies that make provision for change/promotes development in specific areas, but would have no significant effect on a European Site</p> <p>Policies that could have effects that are trivial or 'de minimis', or so restricted in scale or remote from a European site, even if combined with other effects, that they would not undermine the conservation objectives for the European site. For example, a policy that focuses development in existing urban areas whereby the likelihood of the policy affecting an isolated, relatively inaccessible European site is remote.</p>
N7	<p>Policies that promote development or change but where it is so general it is not known where, when or how the aspect of the Plan may be implemented or where the potential effects may occur, or which European sites, if any, may be affected.</p> <p>These are very general / strategic policies or proposals which are too general to identify any effect as it is not known where, when or how the aspect of the Plan may be implemented, or where any potential effects may occur, or which European Sites, if any, may be affected.</p> <p>These plan aspects may be very similar to the general policy statements screened under N1, but are different in that they promote overall change.</p>
<p>'P' category: screened in elements of the Plan (Appropriate Assessment required) Plan elements considered likely to have a significant effect on a European site</p>	
P	<p>Policy/proposal/element of the Plan with potential to have a likely significant effect and therefore subject to further assessment, including consideration of potential mitigation measures.</p> <p>This category will cover:</p> <ul style="list-style-type: none"> • Policies which have been identified as having likely significant effects, either alone or in combination, and directly or indirectly, and are therefore subject to further appraisal; and • Policies where it is not possible to conclude likely significant effects as this is currently uncertain.

4.1.4 The outcome of the screening assessment will be recorded and presented in screening matrices. The proposed layout is set out in **Appendix D**.

4.1.5 A colour code will be applied to the categories used to record the potential effects of the MWLP policies and site allocations on European sites. Green categories record that there are unlikely to be significant effects (and therefore AA is not required). Amber categories record that there are likely to be significant effects (and therefore AA is required).

4.2 Potential impacts of the MWLP on European Sites

4.2.1 **Tables 4.3** and **Table 4.4** summarise the potential impacts that the development of minerals and waste sites may have on European sites.

Table 4.3: Minerals activities and their associated effects

Activity Category	Description of Potential Effects
Extraction of materials (e.g. sand and gravel, clay, chalk and limestone)	<ul style="list-style-type: none"> ● Any land take within a European Site is likely to have a direct adverse impact upon site integrity through <i>habitat loss or degradation</i>. ● The impact may also relate to non-designated habitat features, i.e. land that is functionally linked to a European site. For example, arable fields may be used for foraging and roosting by qualifying bird species. ● Partial and full restoration of extraction sites can be positive for nature conservation and has the potential to improve European Sites through increasing the robustness of sites. This could be either through enhancing buffers or improving the connectivity of sites. It can also result in the extension to existing sites or the creation of new sites. ● <i>Air pollution</i> from vehicles and plant can result in deposition of pollutants on vegetation, ill-health in trees and changes in species assemblages such as lichens. ● The impacts of nitrogen and nitrogen oxides deposition on vegetation growth are of particular concern. Other pollutants including sulphur dioxide, ozone and particulates. ● <i>Dust</i> from extraction and on site operations may have an impact on habitats and species. Impacts can occur within and beyond the site. Potential for affecting the growth of plants. Dust could also get into water sources. ● <i>Noise and light pollution</i> from extraction, ancillary facilities, transportation and some types of restoration may impact upon fauna such as bats and birds. ● Wetland habitats are particularly vulnerable to

	<p><i>pollution from surface or ground water sources.</i></p> <ul style="list-style-type: none"> ● Contamination of habitats may occur from a number of sources. Impacts may include reductions in prey species with subsequent impacts on the food chain, bioaccumulation of toxins in the food chain or eutrophication. ● Contaminants can be transported large distances with surface or ground water. Impacts may depend on the strength of the pathway between the source and the site. ● <i>Pollution or contamination of watercourses</i> during initial ground investigation works (e.g. boreholes may provide pathways for contaminated water), ● Operational activities: previously contaminated aggregates, transport of aggregates, industrial processes on site (especially 24 processing of fuels, oils and solvents), dewatering may bring in contaminated water from off-site.
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Table 4.4: Waste facilities and their associated effects

Waste Facility	Description of Potential Effects
Waste recycling and recovery	<ul style="list-style-type: none"> ● Air emissions primarily associated with public vehicles or haulage lorries. Limited potential for dust, fugitive emissions or bio-aerosols. ● Residual liquids (e.g. from bottles and cans) can potentially pose a pollution risk to water resources. ● Noise, vibration, light pollution, human presence, litter, vermin.
Household recycling centre	<ul style="list-style-type: none"> ● Air emissions are mainly associated with emission from vehicles (haulage and householders bringing their waste by car). Limited potential for release of dust, fugitive emissions and bio-aerosols. ● Limited potential for impact on water resources due to nature of operations and materials. Residual liquids and organic leachate from green waste can potentially pose risk to water resources. Noise, light, human presence, litter, bird disturbance (where close to a SPA).
Waste Transfer Station	<ul style="list-style-type: none"> ● Air pollution resulting from emissions primarily associated with haulage. ● Low potential for dust and fugitive emissions.

	<ul style="list-style-type: none"> Noise, vibration, light pollution, odour, human presence, litter, vermin
Mechanical Biological Treatment	<ul style="list-style-type: none"> Potential habitat loss or degradation. Potential bio-aerosols emissions from organic materials. Potential dust impacts. Air pollution resulting from emissions associated with haulage. Potential leachate pollution. Noise, vibration, light pollution, odour, human presence, litter, vermin
<p>Landfill:</p> <ul style="list-style-type: none"> Inert Non hazardous waste Hazardous waste <p>(note each potential effect in the adjacent column does not necessarily apply to all landfill waste facility types)</p>	<ul style="list-style-type: none"> Potential habitat loss or degradation. Methane and carbon monoxide emissions. Leachate, salts, heavy metals, biodegradable and persistent organics. Accumulation of hazardous substances in soil. Topography alteration, visual intrusion. Soil occupancy, prevention of other land uses. Attraction of vermin. Gulls and corvids (crow family) attracted to the landfill prey upon protected species, particularly the eggs and young of nesting birds. Contamination, accumulation of toxic substances. Potential exposure to hazardous substances. Impact on surface water runoff, flood risk.
In-vessel composting	<ul style="list-style-type: none"> Potential for bio aerosol effects within 250m of operations. Open windrow is usually undertaken in the open air on a concrete base. Potential for dust from heaps, processing and haulage. Leachate and run-off from compost heaps has a high content of organic substances. Noise, light, human presence, litter, bird disturbance (where close to an SPA).
Windrow composting	<ul style="list-style-type: none"> Potential for bio aerosol effects within 250m of operations. Open windrow is usually undertaken in the open air on a concrete base. Potential for dust from heaps, processing and haulage. Leachate and run-off from compost heaps has a high content of organic substances. Noise, light, human presence, litter, bird disturbance (where close to an SPA).
Energy from waste	<ul style="list-style-type: none"> Air emissions include carbon dioxide, acid gases, heavy metals, particulates and dioxins/

	<p>dibenzofurans.</p> <ul style="list-style-type: none"> ● Limited potential for dust and ash release (mainly through accidental spillage and fugitive emissions). ● Air emissions associated with emission from vehicles (haulage). ● Thermal technologies use minimal amounts of water and discharge minor amounts to sewers. ● Noise, light, human presence, litter, bird disturbance (where close to an SPA).
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4.3 Screening assumptions

4.3.1 This section sets out the assumptions that will be applied when undertaking Stage 1 Screening of the MWLP.

Physical loss, damage and/or fragmentation of habitat

4.3.2 Damage or loss of *off-site* habitat (i.e. land outside European sites that is functionally linked as it may be used by the qualifying species of a site) is more likely to be an issue for highly mobile species, particularly birds and bats.

4.3.3 The following European sites support mobile species and have the potential to be functionally linked to *offsite* habitats within Cambridgeshire and Peterborough (features potentially affected in brackets):

- Nene Washes Ramsar and SPA (Berwick's Swan)
- Ouse Washes Ramsar and SPA (Berwick's Swan and Whooper Swan)
- Eversden & Wimpole Woods SAC (Barbastelle Bat)
- Upper Nene Valley & Gravel Pits Ramsar and SPA (European golden plover)
- The Wash Ramsar and SPA (Berwick's Swan, Pink-footed goose, Dark-bellied goose)
- Breckland (Stone curlew, Woodlark, Nightjar)

Introduction of invasive species

4.3.4 There are potential vermin or pest impacts where waste is managed in the open air. For direct mortality it is assumed that impacts from waste facilities would not be significant unless the potential waste site extends within the boundary of a European site, or would affect off-site habitats that sustain the site.

4.3.5 The potential for the introduction of species or impacts on flora is likely to be via composting or anaerobic digestion processes. The relative positions (i.e. whether the European Site is downstream or downwind of the facility) will also be taken into consideration, as airborne introduced species could travel along a further distance to potential sensitive receptors.

4.3.6 European sites that are sensitive to the introduction of invasive species are features potentially affected in brackets):

- Rutland Water SPA - (Great Crested Grebe, Mute swan, Wigeon, Gadwall, Eurasian

teal, Shoveler, Tufted Duck, Goldeneye, Goosander, Common coot, Waterbird assemblage

- The Wash SPA - (H1110 Subtidal sandbanks, H1140 Intertidal mudflats and sandflats, H1160 Shallow inlets and bays, H1170 Reefs, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H1420 Mediterranean saltmarsh scrub)
- Rex Graham Reserve SAC - (H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites))

Air pollution

4.3.7 According to 'The Highways Agency Design Manual for Roads and Bridges, Section 3, Part 1'⁴, in terms of nitrogen deposition from traffic emissions, only increases in heavy duty vehicle (HDV) flows that will change by 200 AADT (Annual Average Daily Traffic) or more are considered significant. Additionally, it is widely accepted that air pollution from roads is unlikely to be significant beyond 200m from the road itself. In most cases, only traffic on major roads (e.g. 'A' roads) is considered sufficient to affect air quality at a level significant to habitats. 200m is therefore the distance that has been used in this HRA to determine whether a European site is likely to be significantly affected by the Local Plan in terms of reduced air quality from atmospheric pollution. Where a site is within 200m of only minor roads, no significant effect from traffic-related air pollution is considered to be the likely outcome.

4.3.8 European sites that are approximately within 200m of major roads (motorways or 'A' roads) and may be sensitive to changes in air quality are (features potentially affected in brackets):

- Devil's Dyke SAC - within 200m of the A1304 (H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites));
- Orton Pit SAC - within 200m of the A1139 (Stonewort) ;
- Nene Washes SPA and SAC - within 200m of the A1139, A141 and A47 (Spined loach);
- Breckland SAC - within 200m of the A1101 and A11 (A133(B) Stone curlew, A246(B) Woodlark, H2330 Open grassland with grey-hair grass and common bent grass of inland dunes, H4030 European dry heaths, H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites));
- The Wash and North Norfolk Coast SAC - within 200m of the A149 (H1150 Coastal lagoons, H1220 Coastal shingle vegetation outside the reach of waves, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H1420 Mediterranean saltmarsh scrub, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1395 Petalwort);
- Rex Graham Reserve SAC - within 200m of the A11 (H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites)).

Noise, vibration and light pollution

4.3.9 Noise impacts are most likely to disturb bird and mammal species and are thus a key

⁴ [1] <http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf>

consideration with respect to European sites where these are among the qualifying features. Noise can arise from processing on a site or from traffic movements to/from a site.

4.3.10 Vibration effects may result where development takes place in close proximity to European sites which include bats, otters and fish species as qualifying features.

4.3.11 Artificial lighting at night (e.g. from flood lighting and security lights) is most likely to affect bat populations and other nocturnal animals, and therefore have an adverse effect on the integrity of European sites where bats or nocturnal animals are a qualifying feature.

4.3.12 Noise, vibration and lighting impacts are most likely to take place within a short distance from European sites. On a precautionary basis, it has been assumed that these impacts may have a significant impact on European sites with qualifying features sensitive to such impacts, or known off-site breeding, foraging or roosting areas, where they take place within 200m of the European site boundary.

4.3.13 The following European sites are likely to be sensitive to disturbance due to noise, vibration and or light pollution (features potentially affected in brackets):

- Eversden & Wimpole Woods SAC (Barbastelle Bat)

Water quantity and quality

4.3.14 Many European sites are dependent upon there being appropriate water quality to support their integrity, including water courses and other wetland habitats, as well as habitat types such as heathlands, which may be dependent on ground water quality. Water quality can be affected by a number of factors, such as pollution, pesticides and nutrient enrichment and discharges from water treatment works.

4.3.15 Impacts on water quantity and quality are most likely to affect European sites that are hydrologically connected to the potential mineral and waste sites, either via surface or groundwater pathways, and those with qualifying features that are wetland habitats or are species dependent on wetland habitats, or habitats sensitive to changes to the water table, as identified in the Site Improvement Plans.

4.3.16 The following sites have the potential to be affected by changes to water quantity or quality:

- Baston Fen SAC - (water dependent species: Spined loach (S1149));
- Breckland SAC - (water dependent habitats and species: Alder woodland on floodplains (H91E0); Great crested newt (S1166); Naturally nutrient-rich lakes or lochs which are dominated by pondweed (H3150));
- Fenland SAC - (water dependent habitats and species: Calcium-rich fen dominated by great fen sedge (saw sedge) (H7210); Great crested newt (S1166); Purple moor-grass meadows (H6410); Spined loach (S1149));
- Nene Washes SAC - (water dependent species: Spined loach (S1149));
- Nene Washes SPA - (water dependent species: Bewicks swan; Black-tailed godwit; Gadwall; Garganey; Pintail; Shoveler; Teal; Waterfowl assemblage; Wigeon);

- Orton Pits SAC - (water dependent habitats and species: Calcium-rich, nutrient-poor lakes, lochs and ponds (H3140); Great crested newt (S1166);
- Ouse Washes SAC - (water dependent species: Spined loach (S1149));
- Ouse Washes SPA - (water dependent species: Bewicks swan; Black-tailed godwit; Breeding bird assemblage; Coot; Cormorant; Gadwall; Garganey; Hen harrier; Lapwing; Mallard; Moorhen; Mute swan; Oystercatcher; Pintail; Pochard; Redshank; Ruff; Shelduck; Shoveler; Teal; Waterfowl assemblage; Whooper swan; Wigeon);
- Portholme SAC - (water dependent habitat: Lowland hay meadows (H6510));
- Rutland Water SPA - (water dependent species: Coot; Gadwall; Goldeneye; Great-crested grebe; Mute swan; Shoveler; Teal; Tufted duck; Waterfowl assemblage; Wigeon);
- The Wash SPA - (water dependent species: Bar-tailed godwit; Bewicks swan; Common tern; Curlew; Dark-bellied brent goose; Dunlin; Grey plover; Knot; Little tern; Oystercatcher; Pink-footed goose; Pintail; Redshank; Sanderling; Shelduck; Turnstone; Waterfowl assemblage; Whooper swan);
- The Wash and North Norfolk SAC - (water dependent habitats and species: Atlantic salt meadows (H1330); Common seal (S1365); Glasswort and other annuals colonising mud and sand (H1310); Intertidal mudflats and sandflats (H1140); Lagoons (H1150); Mediterranean saltmarsh scrub (H1420); Otter (S1355); Reefs (H1170); Shallow inlets and bays (H1160); Subtidal sandbanks (H1110));
- Upper Nene Valley SPA - (water dependent species: Gadwall; Golden plover; Waterfowl assemblage; Wintering bittern)

4.4 Appropriate Assessment

- 4.4.1 Should it not be possible at Stage 1 Screening to conclude that there will be no likely significant effects on European Sites as a result of the MWLP, it will be necessary to undertake a Stage 2 Appropriate Assessment. **Table 4.5** below sets out the key steps of an Appropriate Assessment.

Table 4.5: HRA Stage 2 Appropriate Assessment Key Steps

Stage	Habitats Regulation Assessment
Stage 2 Appropriate Assessment	Explore the reasons for the European designation of screened in sites
	Explore the environmental conditions required to maintain the integrity of the European sites and trends in current environmental processes
	Gain an understanding of the Plan and its policies and consider each policy in context of the environmental processes
	Decide on any identified impacts and whether they would lead to an adverse effect on site integrity. Consider whether impacts are direct, indirect or cumulative

	Identify other plans or projects that might affect the European sites in combination with the Plan and decide whether there are any adverse effects that might not result from the Plan in isolation but will do so 'in-combination'
	Develop mitigation measures to avoid the effect entirely, or if not possible, to mitigate the impact sufficiently that the effect on the European site is rendered effectively inconsequential

4.4.2 The focus of the Appropriate Assessment would be on those impacts identified at the screening stage as likely to have a significant effect. The assessment would consider whether any of the identified impacts would lead to an adverse effect on the integrity of the qualifying features of the European site/s.

4.4.3 A site's integrity depends on it being able to sustain its 'qualifying features' (i.e. the features for which each site is significant) and to ensure their continued viability. Assessing effects on site integrity involves considering whether the predicted impacts of the Plan's policies (either alone or in-combination) have the potential to:

- Cause delays to the achievement of conservation objectives for the site;
- Interrupt progress towards the achievement of conservation objectives for the site;
- Disrupt those factors that help to maintain the favourable conditions of the site;
- Interfere with the balance, distribution and density of key species that are the indicators of favourable condition on the site;
- Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem;
- Change the dynamics of relationships that define the structure or function of the site (e.g. relationships between soil and water, or animals and plants);
- Interfere with anticipated natural changes to the site;
- Reduce the extent of key habitats or the population of key species;
- Reduce the diversity of the site;
- Result in disturbance that could affect the population, density or balance between key species;
- Result in fragmentation;
- Result in the loss of key features.

5. Consultation and Next Steps

- 5.1.1 This HRA Scoping Report has set out the proposed approach to the HRA of the Cambridgeshire and Peterborough MWLP and has presented information on the European Sites that will need to be considered in the HRA Stage 1 Screening.
- 5.1.2 This report will be sent to Natural England for consultation. Although not a statutory requirement, the Councils are seeking the following from the consultation:
- Comments on the European sites identified that may be potentially affected by the proposals in the MWLP and their sensitivities;
 - Comments on the proposed methodology and approach to the HRA Stage 1 screening, the potential impacts arising identified in **Table 4.3** and the screening assumptions presented in **Section 4.3**;
 - Details of any plans or significant projects additional to those in **Appendix C**;
 - Copies of or links to relevant sources of data to inform HRA judgements in the appropriate assessment.
- 5.1.3 The Further Draft MWLP will be subject to HRA using the methodology described in **Section 4** of this report. A HRA report will be prepared and updated as required throughout the preparation of the MWLP and published alongside the consultation version of the Plan. Additional consultation will be undertaken with Natural England as the statutory consultation body for HRA.

Appendix A: Key Stages of the Habitats Regulation Assessment Process for Plans

See page 3 of the following document:

<https://www.nature.scot/sites/default/files/2017-06/A1500925%20-%20Habitats%20Regulations%20Appraisal%20of%20Plans%20-%20Guidance%20for%20plan-making%20bodies%20in%20Scotland%20-%20Jan%202015.pdf>

(Note: Stage 6 and Stage 7 no longer apply, due to April 2018 EU ruling)

<http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN>

Appendix B: European Site Features

This appendix contains information about the European sites scoped into the HRA of the MWLP (see section 3 above). It includes information on site interest features, the factors currently affecting them and conservation objectives.

Nene Washes Ramsar, SPA and SAC

Site Area (ha)

1519.66

Site Overview

Nene Washes is a water dependent SAC, SPA and Ramsar site and is an extensive area of seasonal flooded wet grassland ('washland') in the floodplain of the River Nene, to the immediate east of Peterborough. The western extremity of the Nene Washes adjoins the city centre along the River Nene.

The Natural England SIP for the Nene Washes SPA sets out that the site represents one of the country's few remaining areas of washland habitat which is essential to the survival nationally and internationally of populations of wildfowl and waders. The site is additionally notable for the diversity of plant and associated animal life within its network of dykes. The Nene Washes SAC supports populations of spined loach and represents populations in the Nene catchment. Moreton's Leam, a large drainage channel running along the eastern flank of the Nene Washes, contains the highest recorded density of spined loach in the UK.

Component SSSIs

Nene Washes (Whittlesey)

Reason for SSSI designation

Site represents one of the country's few remaining areas of washland habitat which is essential to the survival nationally and internationally of populations of wildfowl and waders. The site is additionally notable for the diversity of plant and associated animal life within its network of dykes.

The washlands are used for the seasonal uptake of floodwaters and, traditionally, for cattle grazing in the summer months. The mosaic of rough grassland and wet pasture provide a variety of sward structure and herbs of importance respectively for bird nesting habitat and feeding. Additional winter feeding is provided by remains of arable cropping on small areas. These washlands play an additional role in relation to the nearby Ouse Washes in that they accommodate wildfowl populations displaced from the Ouse Washes when deep floodwaters prevent their feeding.

Conservation Objectives

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.

Qualifying Interest Features

Ramsar

Criterion 2: supports an important assemblage of nationally rare breeding birds. A wide range of raptors occur through the year. The site also supports several nationally scarce plants, and two vulnerable and two rare British Red Data Book invertebrate species have been recorded.

Criterion 6: supports species/populations occurring at levels of international importance. Peak counts in winter – Bewick's Swan

Supports species/populations identified subsequent to designation for possible future consideration under criterion 6. Peak counts in spring autumn: black-tailed godwit. Peak counts in winter: northern pintail

SPA and SAC

- S1149 *Cobitis taenia*: Spined loach
- A156a(B) *Limosa limosa limosa*: Black-tailed godwit
- A050(NB) *Anas penelope*: Eurasian wigeon
- A051(B) *Anas strepera*: Gadwall
- A051(NB) *Anas strepera*: Gadwall
- A037(NB) *Cygnus columbianus bewickii*: Bewick swan
- A052(NB) *Anas crecca*: Eurasian teal
- A054(NB) *Anas acuta*: Northern pintail
- A055(B) *Anas querquedula*: Garganey
- A056(B) *Anas clypeata*: Northern shoveler
- A056(NB) *Anas clypeata*: Northern shoveler

Current Pressures/Threats

Hydrological Changes

Flooding on the Nene Washes can lead to difficulties in managing the wet grassland habitats, and may result in low numbers of target bird species successfully breeding. It may also impact the numbers of wintering birds at the site.

Water Pollution

Spined Loach requires good water quality of low nutrient status. The favourable conservation table target for the Nene Washes is 0.1 mg L⁻¹ annual mean figures for phosphorus concentration. Higher phosphorus levels will lead to detrimental impacts to the ecology of the river as the type of macrophytes and habitat structure used by this species is changes.

Orton Pit SAC

Site Area (ha)

141.49

Site Overview

Orton Pit (SAC), which holds the largest known population of great crested newts in the UK, is formed of disused brick-clay workings, adjacent to the urban area, and approximately 5km south west of the city centre. It is a water dependent European site. A large number of ponds have been formed and an extensive area of rough grassland has developed. As set out in Natural England's SIP, the site is of special interest due to both its populations of Great Crested Newt *Triturus cristatus*, containing some of the largest populations known in the UK and possibly Europe, and a network of meso-eutrophic standing water habitats which support an assemblage of nationally rare and scarce *charophyte* (stonewort) species.

Component SSSIs

Orton Pit

Reason for SSSI designation

The particular combination and distribution of aquatic and terrestrial habitats provide ideal breeding, foraging and hibernation conditions for the great crested newt. The newts depend on water for breeding, which takes place in spring, and particularly favour moderately deep, well-vegetated pools without fish. The habitats which occur around the pools on this site are as important as the presence of suitable pools.

The standing open water habitats of the site are representative of a type of water body which is very rare throughout the British Isles. The manner in which the clay was extracted has resulted in a series of linear ponds created over a considerable period of time. The ponds are consequently of varying ages and represent a range of successional stages.

The site is particularly noteworthy for the number of stonewort (charophyte) species present.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and

- The distribution of qualifying species within the site.

Qualifying Interest Features

Annex I Habitat

- S1166 *Triturus cristatus*: Great crested newt
- H3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp

Annex II species

Great Crested Newt, *Triturus cristatus*

Current Pressures/Threats

Predation

Whilst surveys of Great crested newts (GCNs) have indicated a positive trend of numbers on site, numbers of fish-free ponds have decreased. The ongoing spread of predatory fish has implications for longer term GCN population sizes.

Inappropriate Scrub control

The terrestrial grassland/scrub mosaic of habitat is losing its value for Great crested newt (GCN) as succession takes place. Shading from scrub, and lack of open or short turf are reducing the foraging opportunities for the newts.

Inappropriate weed control

Chara canescens requires open, vegetation free ponds, as the site matures and succession develops, reed and other large graminoides are likely to become a dominant feature, diminishing habitat opportunities for this species.

Direct impact from 3rd party

The site is currently affected by illegal activities including off-roading, vandalism, arson and disturbance from dogs jumping into ponds.

Disease

Chytrid fungus is a major threat to the amphibian assemblage found at the site, and could be devastating to the great crested newt feature.

Barnack Hills and Holes SAC

Site Area (ha)

23.3

Site Overview

Barnack Hills and Holes (SAC) is dry grassland and scrub on calcareous substrate which has developed on the site of a disused mineral working/quarry. It is open to the public and managed by Natural England. It is about 8 km northwest of the Peterborough urban area.

The Natural England designation citation for the SAC states that the grassland is of a type characteristic to eastern England and is now scarce in Britain as a result of reclamation for agriculture. The grassland is of a tor-grass *Brachypodium pinnatum*-upright brome *Bromus erectus* type and there is a rich and varied flora with a number of species which are nationally scarce. Of particular note is the abundance of pasque flower *Pulsatilla vulgaris*. Many other species typical of limestone grassland occur including a number of orchids, purple milk-vetch *Astragalus danicus* and the common rock-rose *Helianthemum nummularium*

Component SSSIs

Barnack Hills and Holes

Reason for SSSI designation

An area of Jurassic Limestone grassland which has developed on the site of a disused mineral working. The grassland is of a type which is characteristic of eastern England and which is now scarce in Britain as a result of reclamation for agriculture.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Interest Features

- H6210# Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

Current Pressures/Threats

Changes in species distributions

There is a long term decline in population of Man Orchid *Aceras anthropophorum*, part of the SAC feature for the site. Numbers peaked in the 1980s and have shown a declining trend since. The reasons for this are poorly understood.

Public access/disturbance

High level of public use relative to size of site is causing compaction and degradation of habitat, spread of negative indicator species, and nitrogen loading due to high number of dogs using the site.

Air pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.

Fenland SAC

Site Area (ha)

619.41

Site Overview

The Fenland SAC is comprised of three fenland Sites of Special Scientific Interest: Woodwalton Fen, Wicken Fen and Chippenham Fen.

Each site generally consists of standing water bodies, ditch systems, bogs, marshes and broad-leaved woodland carr. The primary qualifying Fenland SAC features are the extensive examples of the tall herb-rich East Anglian type of M24 *Molinia caerulea* - *Cirsium dissectum* fen-meadow and the calcium-rich fen dominated by great fen-sedge *Cladium mariscus* and species of the Caricion *davallianae*.

Other qualifying features, although not the primary reason of the site's SAC selection, are the presence of Annex II species; great crested newt *Triturus cristatus* and spined loach *Cobitis taenia*.

Component SSSIs

- Wicken Fen
- Woodwalton Fen
- Chippenham Fen & Snailwell Poor's Fen

Reason for SSSI designation

Wicken Fen: This small remnant of the East Anglian peat fens is one of the best surviving examples and is unique in a Cambridgeshire context. The site supports a range of characteristic fenland communities and is notable for its diverse fauna and flora, in particular the invertebrate fauna and the relic fen flora.

Woodwalton Fen: The whole site is a patchwork of wetland communities, providing a habitat for many uncommon plant and insect species-a number of which are confined to East Anglia. It holds a range of wetland plant communities once characteristic of large areas of the East Anglian fens, but which are now restricted to a small number of isolated examples in Cambridgeshire, Suffolk and Norfolk.

Chippenham Fen & Snailwell Poores's Fen: A site of national importance for its wide range of wetland habitats and associated birds and insects. Areas of tall and often rich fen, fen grassland and basic flush have developed over shallow peat soils. The site also contains calcareous grassland, neutral grassland, woodland, mixed scrub and open water. The flora is very diverse and includes a number of uncommon species, particularly in the damp meadows bordering the fen. The site is fed by two main chalk springs and several subsidiary ones. The water levels are controlled within a series of ditches and dykes which support a rich aquatic flora.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Interest Features

Ramsar

Wicken:

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

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

Woodwalton:

Criterion 1: The site is within an area that is one of the remaining parts of East Anglia which has not been drained. The fen is near natural and has developed where peat-digging took place in the 19th century. The site has several types of open fen and swamp communities.

Criterion 2: The site supports two species of British Red Data Book plants, fen violet, *Viola persicifolia* and fen wood-rush *Luzula pallidula*. Woodwalton also supports a large number of wetland invertebrates including 20 British Red Data Book species. Aquatic beetles, flies and moths are particularly well represented.

Chippenham:

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

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

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

SAC

- H7210# Calcareous fens with *Cladium mariscus* and species of the Caricion *davallianae*
- H6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- S1149 *Cobitis taenia*: Spined loach
- S1166 *Triturus cristatus*: Great crested newt

Current Pressures/Threats

Water pollution

Woodwalton Fen is affected by high-nutrient water which inundates the site in winter and flows into the reserve ditches in summer. Despite recent improvements in the water quality feeding the site from the Great Raveley Drain, due to phosphate stripping in nearby sewage treatment works, historical poor water quality has contributed to a decline in biodiversity and a decline in site features within the fen. This historic pollution has potentially bound to the silt of the slow moving internal ditches causing a distinct loss in rooted aquatic species. Despite the reduction in phosphates the nitrates still remain high in the Great Raveley Drain and high nutrient water can flood the site, particularly in winter. Over the past few decades, deteriorating water quality and more persistent flooding have contributed to a reduction in biodiversity and a decline in many site features.

Hydrological changes

The winter flood water at Woodwalton Fen has high silt and nutrient loads which get deposited on the site and can lie on the fields for prolonged periods. Flooding also delays the start of the grazing and mowing season, which in turn promotes the vigorous growth of invasive species like soft rush and reed. These species are replacing more diverse grassland communities in some areas in the south of the site where much of the site's SAC interests are situated. Instant impacts include damage and disruption to management infrastructure, flooding of nests and hibernacula (depending on time of year) and, in some instances, local extinction of species.

There are concerns that water does not seep into site compartments between ditches to the extent it once did. A current project is underway at Chippenham Fen to look at how a site abstraction licence could be used to explore an alternative method to deliver support water. The water augmentation pilot project explores an alternative method of delivery of support water. The scheme is mitigation for the effects of public water supply abstraction.

Water pollution

Chippenham Fen is affected by high nutrient water reaching the fen from a mixture of groundwater, rainfall and run-off. In periods of low flow, poor quality water may have a more dramatic effect on the site's vascular plant assemblages. There is uncertainty of the current water quality within Chippenham Fen at present.

Air pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds site relevant critical loads. This has the potential to affect the Molinia meadow and calcareous fen features although there is no information known on any current impacts.

Portholme SAC

Site Area (ha)

91.79

Site Overview

Portholme SAC holds grassland communities of the alluvial flood meadow type. Its sole qualifying interest feature consists of lowland hay meadows of the *Alopecurus pratensis*, *Sanguisorba officinalis* NVC community. It is the largest surviving traditionally-managed meadow in the UK, with an area of 104ha of alluvial flood meadow, surrounded by channels of the River Ouse. Watercourses on the periphery of the site have populations of some uncommon invertebrates, including one dragonfly which is of a nationally restricted distribution. The grasslands also support a small population of fritillary *Fritillaria meleagris*.

Component SSSIs

Portholme SSSI

Reason for SSSI designation

This area holds grassland communities of the alluvial flood meadow type. Portholme represents one of the largest areas of this grassland type in the country which continues to be managed on traditional lines as a 'lammas' meadow. Watercourses on the periphery of the site have populations of some uncommon invertebrates, including one dragonfly which is of a nationally restricted distribution. The meadow is surrounded by channels of the River Ouse, and the Alconbury Brook is close by.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Interest Features

- H6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)

Current Pressures/Threats

Inappropriate water levels

Portholme's MG4 grassland habitat community is very sensitive to prolonged flood events. Given the proximity to the River Ouse, periodic winter flooding is a naturally occurring event. However, there are concerns that the duration of flooding and phosphate/sediment levels in the flood water are having a detrimental effect upon the habitat. Works were implemented in 2010 to assist water movement from north east corner of the SAC. However, this has been followed by a series of very wet winters where excessive flooding is thought to have been detrimental to the flora.

Water pollution

Portholme's MG4 grassland habitat community is very sensitive to input of nutrients. This encourages more competitive grasses and 'weeds' at the expense of rarer more desirable herbaceous species. High nutrient levels are arising from floodwaters from the River Ouse, having a detrimental effect upon the habitat.

Ouse Washes Ramsar, SPA and SAC

Site Area (ha)

2513.54

Site Overview

The Ouse Washes SPA is one of the regions few remaining washland habitats. The site was created in the seventeenth century to provide a flood water storage area for the River Great Ouse. The traditional winter flood storage and summer grazing by cattle, as well as hay production, have given rise to a mosaic of rough grassland and wet pasture, with a diverse and rich ditch fauna and flora. The site regularly supports internationally and nationally important numbers of over-wintering and breeding bird species. Of particular note are the large number of Teal, Pintail, Wigeon, Shoveler, Pochard and Bewick's Swans. Many bird species that regularly use the site either during breeding or wintering periods are qualifying SPA features and qualifies as a wetland of international importance holding over the threshold of 20,000 individual waterfowl.

The Ouse Washes SAC supports populations of Annex II species spined loach *Cobitis taenia*. The species occurs in the Counter Drain, Old Bedford/River Delph areas of the Ouse Washes, which contains clear water and abundant macrophytes which are of particular importance to maintain healthy populations of this species.

Component SSSIs

Ouse Washes

Reason for SSSI designation

The site is one of the country's few remaining areas of extensive washland habitat. It is of particular note for the large numbers of wildfowl and waders which it supports, for the large area of unimproved neutral grassland communities which it holds and for the richness of the aquatic fauna and flora within the associated watercourse. The capacity of the site to hold wintering and breeding waterfowl and waders is of international significance.

Conservation Objectives

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.

Qualifying Interest Features

Ramsar:

Criterion 1: The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.

Criterion 2: The site supports several nationally scarce plants, including small water pepper *Polygonum minus*, whorled water-milfoil *Myriophyllum verticillatum*, greater water parsnip

Sium latifolium, river waterdropwort *Oenanthe fluviatilis*, fringed water-lily *Nymphoides peltata*, long-stalked pondweed *Potamogeton praelongus*, hair-like pondweed *Potamogeton trichoides*, grass-wrack pondweed *Potamogeton compressus*, tasteless water-pepper *Polygonum mite* and marsh dock *Rumex palustris*. Invertebrate records indicate that the site holds relict fenland fauna, including the British Red Data Book species large darter dragonfly *Libellula fulva* and the rifle beetle *Oulimnius major*. The site also supports a diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.

Criterion 5: Assemblages of international importance

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 , *Cygnus columbianus bewickii*, NW Europe
- Whooper swan , *Cygnus cygnus*, Iceland/UK/Ireland
- Eurasian wigeon , *Anas penelope*, NW Europe
- Gadwall , *Anas strepera strepera*, NW Europe
- Eurasian teal , *Anas crecca*, NW Europe
- Northern pintail , *Anas acuta*, NW Europe
- Northern shoveler , *Anas clypeata*, NW & C Europe

SAC and SPA:

- S1149 *Cobitis taenia*: Spined loach

Ouse Washes SPA Breeding bird assemblage

- A052(NB) *Anas crecca*: Eurasian teal
- A053(B) *Anas platyrhynchos*: Mallard

Waterbird assemblage

- A082(NB) *Circus cyaneus*: Hen harrier
- A156a(B) *Limosa limosa islandica*: Black-tailed godwit
- A054(NB) *Anas acuta*: Northern pintail
- A055(B) *Anas querquedula*: Garganey
- A056(B) *Anas clypeata*: Northern shoveler
- A050(NB) *Anas penelope*: Eurasian wigeon
- A056(NB) *Anas clypeata*: Northern shoveler
- A051(B) *Anas strepera*: Gadwall
- A151(B) *Philomachus pugnax*: Ruff
- A037(NB) *Cygnus columbianus bewickii*: Bewick swan
- A038(NB) *Cygnus cygnus*: Whooper swan

Current Pressures/Threats

Inappropriate water levels

Notified interests (including breeding birds, overwintering birds and supporting grassland communities) are being adversely affected by increased flooding on the Ouse Washes. Flooding during spring / early summer severely damages the breeding bird interest by flooding nests, drowning young and affecting habitat. Deep flooding during winter also impacts overwintering birds such as wigeon and impacts on the wetland fauna, especially invertebrate populations. Wetland flora is also affected through prolonged submersion, favouring swamp communities over the designated grassland species. Prolonged summer flooding disrupts essential management of the washland, affecting the condition of the grassland for breeding birds in subsequent spring/summer season(s).

Water pollution

Inappropriate levels of nutrients from diffuse pollution in combination with inappropriate water levels from flooding have adversely affected the extent/composition of vegetation communities on the washes. Resulting changes to the grassland mosaic has potential to affect the notified bird interests by destroying habitat suitable for many of the birds that visit or breed at the site. Occasional incidences of low oxygen levels on River Delph and Counter Drain have potential to impact spined loach populations.

Devil's Dyke SAC

Site Area (ha)

8.25

Site Overview

Devil's Dyke holds one of the best and most extensive areas of species-rich chalk grassland in Cambridgeshire. The grassland is of a type characteristic to chalklands of south, central and eastern England and represents a habitat type now very restricted in distribution and extent throughout its British range.

The Dyke is an ancient linear earthwork comprising a deep ditch and high bank, originally colonised by plants from adjacent calcareous grassland. For this reason the Dyke is important as one of the few remaining areas still supporting these relict chalkland vegetation communities, once traditionally maintained by sheep grazing.

Component SSSIs

Devil's Dyke

Reason for SSSI designation

The Devil's Dyke holds one of the best and most extensive areas of species-rich chalk grassland in the county and a similarly extensive area of chalk scrub grading into woodland to the east. The grassland is of a type characteristic to chalklands of south, central and eastern England and represents a habitat type now very restricted in distribution and extent throughout its British range.

The wood, scrub and grassland habitats combined are valuable for a number of insects which are now uncommon in the county. The site also provides an attractive nesting and feeding area for many birds in a part of the country where cover and semi-natural habitats are scarce.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Interest Features

H6210# Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

Current Pressures/Threats

Inappropriate scrub control

There is some scrub encroachment which is beginning to become damaging on some parts of the site and is likely to cause the notified grassland to deteriorate. Grassland vegetation management is currently managed by hand cutting as grazing cannot be carried out due to equestrian practices which have taken place for centuries. The current HLS agreement does not provide sufficient funding to allow appropriate management of the sward because of the steepness of the site.

Air pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.

Eversden and Wimpole Woods SAC

Site Area (ha)

67.08

Site Overview

Eversden Wood is an ancient woodland of ash-maple type which is now very localised in extent, both locally and in lowland England as a whole. The site is one of the largest remaining areas of such woods on the chalky boulder clay in Cambridge and contains a rich assemblage of woodland plants including some uncommon species. The site holds colonies of Barbastelle bat *Barbastella barbastellus*, the sole European designated feature of the site. The bats are associated with the trees in Wimpole woods, these trees are used as a summer maternity roost where female bats gather to give birth to their young. The bats also use the site as a foraging area. Some of the woodland is also used as a flight path when bats forage outside the site.

Component SSSIs

Eversden and Wimpole Woods SSSI

Reason for SSSI designation

Eversden Wood is an important ancient semi-natural woodland of a type now localised in extent, and rare in lowland England. The habitats present also support a nationally important summer maternity roost for the barbastelle bat, *Barbastella barbastellus*.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Interest Features

S1308 *Barbastella barbastellus*: Barbastelle bat

Current Pressures/Threats

Feature location/extent/condition unknown

Two transects within the site are monitored each year as part of the National Bat Monitoring Programme (NBMP). However there is some evidence that there could be other Barbastelle roosts or important foraging sites close to but not within the site. If this is the case then potentially important sites for the bats in the area are not protected.

Offsite habitat availability/management

The bats have a limited area in which to roost and forage within the site and it is unclear which habitats they use in the wider countryside. In order to maintain a sustainable population, additional suitable habitat should be identified and to maintain/improve its value, suitable long-term management secured.

Forestry and woodland management

The woodland upon which the bats depend must be maintained in the medium to longer term by ensuring that tall trees, especially oak, grow up to replace those currently in place.

Air pollution: impact of nitrogen deposition

Nitrogen deposition exceeds site-relevant critical loads.

European Sites within 15km of the Local Plan Area

Baston Fen SAC

Site Area (ha)

2.25

Site Overview

Baston Fen SAC comprises long strips of permanent pasture which are subject to regular winter flooding, interspersed with a series of old flooded borrowpits with associated swamp and fen plant communities.

Amongst the variety of fish which have been recorded from the site is the spine loach *Cobitis taenia*, significant populations of which occur in the Counter Drain and, to a lesser extent, in the River Glen. This site represents a key stronghold for this species within the Welland catchment.

Component SSSIs

Baston and Thurlby Fens

Reason for SSSI designation

This is the only permanent grassland in Lincolnshire used as a washland. Flooded borrow pits and associated marsh support a variety of wetland plant communities and an outstanding assemblage of dragonflies and damselflies. The Counter Drain contains an exceptionally rich aquatic flora and represents an important stronghold of the spined loach *Cobitis taenia* within the Welland catchment.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Interest Features

S1149 *Cobitis taenia*: Spined loach

Current Pressures/Threats

Siltation

There has been no desilting of the ditch since SAC notification because of the concerns over what this could do to the Spined loach population. There is currently more silt than is considered ideal for the species, and a management programme is necessary for both the health of the Spined loach population and for the macrophyte community. It will need careful planning and monitoring.

Changes in species distribution

The Spined loach population is not monitored with sufficient frequency to determine population fluctuations.

Rutland Water Ramsar and SPA

Site Area (ha)

1555.24 (SPA)

Site Overview

Rutland Water SPA is a large public water supply reservoir constructed in 1975 and located within the county of Rutland in central England.

The SPA is a wetland of international importance by regularly supporting over 20,000 non-breeding waterfowl annually. Notable components of this assemblage include internationally important numbers of non-breeding shoveler and gadwall, as well as nationally important numbers of non-breeding coot, goldeneye, goosander, great crested grebe, mute swan, teal, tufted duck and wigeon.

Component SSSIs

Rutland Water

Reason for SSSI designation

The site supports exceptional numbers and diversity of passage and wintering waterfowl. The diversity and management of terrestrial, marsh and aquatic habitats at Rutland Water have made it one of the richest reservoir locations for wintering passage wildfowl in Britain being particularly notable for its numbers of mallard, shoveler, gadwall, teal, wigeon, pochard, tufted duck and goldeneye.

Conservation Objectives

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.

Qualifying Interest Features

Ramsar

Criterion 5: Assemblages of international importance

Criterion 6: Species/populations occurring at levels of international importance

Species with peak counts in spring/autumn:

- Gadwall *Anas strepera strepera*, NW Europe
- Northern shoveler *Anas clypeata*, NW & C Europe

SPA

Waterbird assemblage

- A005(NB) *Podiceps cristatus* Great crested grebe
- A050(NB) *Anas penelope*: Eurasian wigeon

- A051(NB) *Anas strepera*: Gadwall
- A052(NB) *Anas crecca*: Eurasian teal
- A056(NB) *Anas clypeata*: Northern shoveler
- A061(NB) *Aythya fuligula*: Tufted duck
- A067(NB) *Bucephala clangula*: Common goldeneye
- A070(NB) *Mergus merganser*: Goosander
- A125(NB) *Fulica atra*: Common coot

Current Pressures/Threats

Water abstraction

Increased water abstraction is proposed that will radically alter water levels in the reservoir which may result in a proportion of waterbirds utilising areas provided as compensation but which are currently outside the SPA.

Inappropriate water levels

Water levels of the reserve are managed primarily for public water supply and water storage and not specifically for non-breeding water birds. This can influence the number of specific species of non-breeding waterbirds using the site at certain times of year. At the moment, this is not causing any long-term deterioration of the site. However, when the proposed new increased abstraction regime is implemented, appropriate management of the water levels in the compensation and mitigation water bodies will be required to offset the impacts of the abstraction.

Direct impact from 3rd party

Cumulative impacts from unregulated third party activities like private firework displays in properties adjacent to the SPA, hot air balloon flights, and private aircraft flights (including microlites and military aircraft flights) is unknown. Investigation is needed to better understand the frequency of these disturbances and the cumulative impacts of these activities upon the waterbirds using Rutland Water.

Invasive species

Rutland Water has been colonised by several invasive non-native species, including zebra mussel, bloody red mysid, Canadian pondweed, Nutall's pond weed and more recently by signal crayfish. Whilst some non-natives like the pondweeds can have a positive impact on the SPA interest features, this is not necessarily the case for all species. This is because non-native species can, either by themselves or in combination with other non-native species, significantly alter foodwebs which can lead to dramatic decreases in some taxa and to subtle changes in species composition.

Water pollution

The inflows into Rutland Water currently receive regulated discharges of treated sewage as well as unregulated treated sewage discharges from septic tanks. Further nutrient inputs come from diffuse sources (such as agriculture) which maintain the reservoir in a highly eutrophic state and has led in the past to regular algal blooms.

Planning permission:general

In the wider area surrounding the SPA, wind farms and other development is being proposed and is taking place. However the impacts upon the waterfowl behaviour during nocturnal migration and dispersal to and from the reservoir and their interactions with the environment in the surrounding countryside is poorly understood. Investigation is needed to better understand the cumulative impact of existing and planned wind farm and other local developments on the waterfowl using Rutland Water.

Public access/disturbance

The reservoir and surrounding area is a very important destination for undertaking recreational activities. These include a range of watersports, fishing, cycling, birdwatching and walking. Several large events are also held on the banks of the reservoir each year. Future recreational proposals will need to avoid likely significant effects on the SPA and to do this properly will require an audit of existing recreational activities to evaluate and manage potential impacts prior to any deterioration of the SPA interest features.

Fisheries: freshwater

Rutland Water is currently managed as a put and take trout fishery. Trout essentially have a controlling impact on coarse fish populations. However, future changes in coarse fish populations could create a shift in the ecological balance of the water body. In addition, fish diseases or parasite outbreaks (e.g. Red Vent Syndrome (RVS)) could potentially cause harm to the current fishery and the ecological status of the water body.

Upper Nene Valley Gravel Pits Ramsar and SPA

Site Area (ha)

1357.68

Site Overview

Upper Nene Valley Gravel Pits SPA consists of a chain of exhausted sand and gravel pits extending for approximately 35km along the alluvial deposits of the River Nene in Northamptonshire. The pits form an extensive series of shallow and open waters which occur in association with a wide habitats including reedswamp, marsh, wet ditches, rough grassland and scattered woodland.

The extensive open waters and associated habitats of the Upper Nene Valley Gravel Pits collectively form one of the most important inland localities in England for waterbirds in the non-breeding period and regularly supports peak numbers of waterbird in excess of 20,000 individuals, including significant populations of bittern, golden plover and gadwall.

Species such as golden plover *Pluvialis apricaria* and lapwing *Vanellus vanellus* also spend time feeding and roosting on surrounding agricultural land outside the Ramsar site.

Component SSSIs

Upper Nene Valley Gravel Pits

Reason for SSSI designation

The Upper Nene Valley Gravel Pits SSSI is a nationally important site for its breeding bird assemblage of lowland open waters and their margins (including the largest nesting colony of grey herons *Ardea cinerea* in Northamptonshire), wintering waterbird species, an assemblage of over 20,000 waterbirds in the non-breeding season and a rare example of wet floodplain woodland.

Conservation Objectives

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.

Qualifying Interest Features

Ramsar

Criterion 5: Regularly supports 20,000 or more waterbirds

Criterion 6: Regularly supports 1% of the individuals in the populations of the following species or subspecies of waterbird:

- *Cygnus olor*: Mute swan
- *Anas strepera*: Gadwall

SPA

- A140(NB) *Pluvialis apricaria*: European golden plover
Waterbird assemblage
- A021(NB) *Botaurus stellaris*: Great bittern
- A051(NB) *Anas strepera*: Gadwall

Current Pressures/Threats

Public access/disturbance

Disturbance from recreation (particularly walkers and dog owners) affects wintering birds by reducing the time available for feeding, and increasing energy expenditure when avoiding those sources of disturbance.

Planning permission: general

There continues to be an increase in built and recreational development within and around the SPA leading to loss and fragmentation of habitat, and increased disturbance. Seven local planning authorities are involved with decision making; policies can be inconsistent across the authorities or provide insufficient protection.

Fisheries: freshwater

An increasing number of lakes are being utilised as freshwater fisheries; overstocking of certain fish species can lead to declines in water quality and availability of food for waterbirds which feed on aquatic plants and invertebrates. The issuing of licences to control fish-eating birds can reduce the populations of species for which the site is important.

Change in land management

Continued habitat management is required to ensure the balance of short grassland, reedbed, fen and open water is maintained. For example: grazing or mowing is required to maintain short grassland required by wigeon and golden plover; scrub /tree control is required to control invasive scrub and willow to maintain open sightlines and access to waterbodies; scrub removal and water level management is required to maintain suitable habitats in reedbeds for wintering bittern. There remains a significant area which is not currently under appropriate management and where existing mechanisms are not proving effective.

Breckland Ramsar, SPA and SAC

Site Area (ha)

Site Overview

The Breckland SAC and SPA is characterised by an extensive area of grass heath (and some heather heath), large arable fields, and the largest coniferous forest in lowland England. Together, these support over 2000 priority species, many of which are confined to the area, or have their core UK distribution there

Component SSSIs

Breckland SAC

Weeting Heath
Stanford Training Area
Breckland Forest
Breckland Farmland
RAF Lakenheath
Cranwich Camp
Lakenheath Warren
Foxhole Heath, Eriswell
Thetford Heath
Bridgham & Brettenham Heaths
Grime's Graves
Berner's Heath, Icklingham
Weather & Horn Heaths, Eriswell
Wangford Warren & Carr
East Wretham Heath
Gooderstone Warren
Field Barn Heaths, Hilborough
Cavenham-Icklingham Heaths
Barnhamcross Common
Thetford Golf Course & Marsh
Deadman's Grave, Icklingham

Breckland SPA

Cavenham-Icklingham Heaths
Little Heath, Barnham
Stanford Training Area
Thetford Golf Course & Marsh
Barnham Heath
Breckland Farmland
Cranwich Camp
Lakenheath Warren
Foxhole Heath, Eriswell
Thetford Heath
Deadman's Grave, Icklingham

Bridgham & Brettenham Heaths

Weeting Heath

Rex Graham Reserve

Grime's Graves

Barnhamcross Common

Berner's Heath, Icklingham

Breckland Forest

How Hill Track

West Stow Heath

Weather & Horn Heaths, Eriswell

Wangford Warren & Carr

East Wretham Heath

Cranberry Rough, Hockham

Gooderstone Warren

Eriswell Low Warren

Field Barn Heaths, Hilborough

Old Bodney Camp

Foulden Common

Reason for SSSI designation

Too numerous to list. See <https://designatedsites.naturalengland.org.uk/SiteSearch.aspx>

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features'...), and subject to natural change; 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 qualifying species rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site

Qualifying Interest Features

Ramsar

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

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

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

SPA

- A224(B) *Caprimulgus europaeus*: European nightjar
- A246(B) *Lullula arborea*: Woodlark
- A133(B) *Burhinus oedicephalus*: Stone-curlew

SAC

- H91E0# Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)
- S1166 *Triturus cristatus*: Great crested newt
- H2330 Inland dunes with open *Corynephorus* and *Agrostis* grasslands
- H3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation
- H4030 European dry heaths
- H6210# Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

Current Pressures/Threats

Lack of ground disturbance

Insufficient creation and/or maintenance of bare ground and early successional vegetation communities (dry heath, dune and calcareous grassland). This affects both SAC habitat and its characteristic invertebrate species, and SPA species (Stone curlew, Woodlark)

Undergrazing

Undergrazing, both by domestic livestock and wild rabbits affects the majority of grassland & heathland sites throughout the SPA/SAC, which puts at risk the quality of SAC habitats and their characteristic species, including SPA bird species.

Forestry and woodland management

There has been a significant decline in the numbers of woodlark and nightjar since the SPA classification. This can be largely explained by the loss of available habitat through the natural cycle of timber harvesting. For woodlark there is also some decline in habitat quality.

Water pollution

There has been a considerable loss of aquatic species in Ringmere and high nutrient levels recorded in previous water analysis suggest nutrients are impacting the mere. Langmere too shows signs of nutrient enrichment.

Changes in species distributions

There are significant declines of rare and scarce vascular plant species that are part of SAC habitat.

Characteristic rare and scarce lichens of calcareous grass heath have largely disappeared from their historic sites, and lichen heath in general is in decline more broadly across heaths and grasslands. This affects the quality of the SAC habitats.

Heather appears to be dying back on a number of heather heaths (WHH, BH, STA), which is not currently explained by management, age cycle or known pathogens.

Grey hair-grass *Corynephorus canescens* has been lost from one of the two component sites (WWC) where it has previously occurred, and declined in the other (RAFL).

Stone curlew monitoring and intervention

Stone Curlew have adapted to breed on arable farmland. Nests and chicks are vulnerable to some farming operations at specific times, especially because they are well camouflaged and chicks tend to stay motionless when disturbed. Breeding success is improved by monitoring and intervention: working with farmers to locate nests and temporarily remove chicks during farming operations. Provision of nesting plots also contributes to maintaining and enhancing the population. These actions require continued collaboration and funding.

Planning permission: general

Development, especially for housing, roads and solar farms can impact on SPA species (Stone curlew, Woodlark, Nightjar). Detailed, robust information submitted by applicants is required to enable Competent Authorities and statutory consultees to assess planning applications both for their impact and mitigation. Co-ordination of baseline information for European sites and features from partners is also needed to ensure a full assessment can be made.

Monitoring

Continued and expanded monitoring of SPA species and their habitat is essential to targeting appropriate management and identify the impacts of, and potential mitigation for, development. There is insufficient certainty of funding of monitoring, together with incomplete coverage of existing monitoring effort.

Air pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds site relevant critical loads for ecosystem protection and hence there is a risk of harmful effects.

Public access/disturbance

Recreational and other activities have the potential to impact both SAC and SPA features. Disturbance does not currently appear to be significantly impacting the bird populations, but the impacts of increased recreational activity is uncertain. Recreational growth in Thetford Forest may impact on woodlark and nightjar. The forest is a major recreational attraction in the region. Similarly, military training activities have the potential to impact ground nesting birds, especially stone curlew, but the extent of this impact is unclear. SAC features may be affected through eutrophication (dog fouling, unauthorised fires) and disturbance of soils, in particular on commons and heaths.

Climate change

Perceived effects of climate change could result in impacts on parched grassland, heath and dune communities, as well as component rare species.

Inappropriate scrub control

Excess growth of scrub and trees is affecting open heath and calcareous grasslands. Payment rates for scrub clearance in HLS are too low, whilst availability of capital funds for additional HLS capital works plans is too limited.

Inappropriate management practices

There is an over-emphasis in site management on heather (especially in its mature phase), as opposed to heathland community, especially the early successional phases, and the dynamism between heathland and grassland communities.

Habitat fragmentation

Some heaths are relatively small and the connectivity between these and the larger heaths too, is poor. In some cases the individual heaths are physically isolated and the landscape in between is hostile to species dispersal.

Inappropriate weed control

Invasion of dry heath, dune and calcareous grassland by *Calamagrostis epigejos*.

Inappropriate pest control

Predation on ground-nesting SPA species, especially Stone curlew and Woodlark

Inappropriate cutting/mowing

Chalk grassland communities on Barnham Cross Common have declined as a result of a sub-optimal cutting regime.

The Wash Ramsar and SPA and The Wash and North Norfolk SAC

Site Area (ha)

62044.03 (Ramsar and SPA)

107719.95 (SAC)

Site Overview

The Wash is the largest marine embayment in Britain, with the second largest expanse of intertidal sediment flats in the country. These include extensive fine sands and drying banks of coarser sand which support a community characterised by large numbers of polychaetes, bivalves, and crustaceans. Subtidal sandbanks vary in composition and include coarse sand through to mixed sediment at the mouth of the embayment. Unusual subtidal communities include large areas of dense brittlestar beds and the small but extensive colonies of the reef-building ross worm *Sabellaria spinulosa* which supports a diverse associated fauna.

The Wash is important for breeding and moulting of one of Europe's largest populations of common seal *Phoca vitulina*. The intertidal mudflats and salt marshes represent one of Britain's most important winter feeding areas for waders and wildfowl outside of the breeding season.

The North Norfolk coast provides the only typical British example of a barrier beach system. Extensive areas of salt marsh with characteristic creek patterns have developed behind sand and shingle spits and bars. The open coast is characterised by large areas of clean mobile sand subject to functioning coastal and marine processes. Communities vary from typical estuarine examples characterised by the bivalve peppery furrow shell *Scrobicularia plana*, to lugworm *Arenicola marina* dominated muddier sand in the lee of islands and spits, to a sparse infauna in more exposed open coast areas.

Component SSSIs

The Wash

Gibraltar Point

Hunstanton Cliffs

North Norfolk Coast

Reason for SSSI designation

The Wash

The whole area is of exceptional biological interest. The intertidal mudflats and saltmarshes represent one of Britain's most important winter feeding areas for waders and wildfowl outside of the breeding season. Enormous numbers of migrant birds, of international significance, are dependant on the rich supply of invertebrate food. The saltmarsh and shingle communities are of considerable botanical interest and the mature saltmarsh is a valuable bird breeding zone. In addition the Wash is also very important as a breeding ground for Common Seals.

See also <https://designatedsites.naturalengland.org.uk/SiteSearch.aspx>

Conservation Objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features'...), and subject to natural change; 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 qualifying species rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site

Qualifying Interest Features

Ramsar

Criterion 1: The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels.

Criterion 3: Qualifies because of the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary.

Criterion 5: Assemblages of international importance

Criterion 6: Species/populations occurring at levels of international importance

Species with peak counts in spring/autumn:

- Eurasian oystercatcher, *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering
- Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering

- Red knot, *Calidris canutus islandica*, W & Southern Africa - wintering
- Sanderling, *Calidris alba*, Eastern Atlantic
- Eurasian curlew, *Numenius arquata arquata*, N. a. *arquata* Europe (breeding)
- Common redshank, *Tringa totanus totanus*
- Ruddy turnstone, *Arenaria interpres interpres*, NE Canada, Greenland/W Europe & NW Africa

Species with peak counts in winter:

- Pink-footed goose, *Anser brachyrhynchus*, Greenland, Iceland/UK
- Dark-bellied brent goose, *Branta bernicla bernicla*
- Common shelduck, *Tadorna tadorna*, NW Europe
- Northern pintail, *Anas acuta*, NW Europe
- Dunlin, *Calidris alpina alpina*, W Siberia/W Europe
- Bar-tailed godwit, *Limosa lapponica lapponica*, W Palearctic

The Wash SPA

- A156(NB) *Limosa limosa islandica*: Black-tailed godwit
- A143(NB) *Calidris canutus*: Red knot
- A157(NB) *Limosa lapponica*: Bar-tailed godwit
- A144(NB) *Calidris alba*: Sanderling
- A160(NB) *Numenius arquata*: Eurasian curlew
- A149(NB) *Calidris alpina alpina*: Dunlin
- A162(NB) *Tringa totanus*: Common redshank
- A141(NB) *Pluvialis squatarola*: Grey plover
- A169(NB) *Arenaria interpres*: Ruddy turnstone
- A193(B) *Sterna hirundo*: Common tern
- A195(B) *Sterna albifrons*: Little tern

Waterbird assemblage

- A037(NB) *Cygnus columbianus bewickii*: Bewick swan
- A040(NB) *Anser brachyrhynchus*: Pink-footed goose
- A046a(NB) *Branta bernicla bernicla*: Dark-bellied brent goose
- A048(NB) *Tadorna tadorna*: Common shelduck
- A050(NB) *Anas penelope*: Eurasian wigeon
- A051(NB) *Anas strepera*: Gadwall
- A054(NB) *Anas acuta*: Northern pintail
- A065(NB) *Melanitta nigra*: Black (common) scoter
- A067(NB) *Bucephala clangula*: Common goldeneye
- A130(NB) *Haematopus ostralegus*: Eurasian oystercatcher

Current Pressures/Threats

Public Access/Disturbance

English Coastal Path and housing development. The range of recreational activities may have adverse impacts on the sites (Boating; motor boating; water skiing; jet skis; commercial and non-commercial wildlife tours; commercial shipping; kites (including surfers, boarders

and buggy boarders); moorings; access to moorings; motorised vehicles; bikes, hovercraft; bird/wildlife watching; (dog) walking; Samphire collection, shellfish collection, bait digging, reed cutting, beachcombing, sea lavender gathering; beach barbecues; littering; wildfowling). Conflicts with the management of fragile habitats and species which can be easily disturbed by recreational activity will need to be carefully managed. To overcome these challenges further collaboration between stakeholders and local people may be needed with the aim of more holistic management of the area.

Low altitude, non-military flying aircraft (microlites, paragliders, hang gliders) have a negative impact on many features.

Siltation

Sediment accretion is occurring in the Wash, and in such a dynamic system may be natural. However, activities associated with the Lincshore beach nourishment program may contribute to changes in sediment movement in the site. It is difficult to separate natural from anthropogenic change. The Environment Agency Lincshore scheme is part of the Saltfleetby-Gibraltar Point Coastal Strategy (part of the Flamborough Head to Gibraltar Point Shoreline Management Plan).

Fisheries: Recreational marine and estuarine

Recreational sea fishing and shoreline angling is a large scale activity with potential to impact on fish stocks as a resource for designated birds, but the size of the activity locally and its impact is not known. With the release of the national sea angling report, the Eastern IFCA are looking to follow this up to ensure all fisheries in their district are sustainable.

Invasive species

There is a risk of introduction and spread of non-native/invasive species (e.g. American Razor Clam *Ensis directus*; Slipper limpet *Crepidula fornicata*; Pacific Oyster *Crassostrea giga*; oyster parasite *Bonamia*) from future fisheries and mussel lay stocking. There is also a risk of translocation of invasive species through ballast water transfer and discharge.

Inappropriate coastal management

Following the tidal event of December 2013 there may now be conflicts between flood risk management and the protection and provision of SPA/SAC habitats.

Fisheries: Commercial marine and estuarine

A consent was granted to a private fishery tenant in 1984 for collection of shellfish, killing of starfish and application of lime to the sea bed. No restriction on harvesting methodology or level were applied to the consent. Therefore, there is a risk to site features due to uncertainty of current management.

Predation

Lack of predator control, where appropriate, is having an impact on the ability of sites to support breeding bird populations.

Coastal squeeze

Coastal squeeze at this site may lead to a gradual loss of intertidal and coastal habitats due to sea level rise and the erection and maintenance of coastal defences. The Wash Shoreline Management Plan and the North Norfolk Coast Shoreline Management Plan are subject to Habitats Regulations Assessment. Some areas of compensatory habitat still need to be designated.

Change in land management

Grazing management. Areas of saltmarsh may be over and under-grazed throughout the site. Ascertaining what the appropriate grazing regime is and tackling where inappropriate grazing occurs required.

Air Pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds the critical loads for some sensitive habitats habitats. Scrub encroachment in (unfavourable recovering) dune habitats may be exacerbated by atmospheric nitrogen.

Grimsthorpe SAC

Site Area (ha)

0.36

Site Overview

This 0.35 hectare site is situated amongst an area of ancient parkland in Lincolnshire. A deer park is known to have been present at Grimsthorpe in the sixteenth century, although the park is thought to date from the twelfth century.

SAC interest is provided by several disused stone quarries which were mined by pickaxe which created a unique substrate supporting rich limestone flora and important orchid sites. Grimsthorpe is the most northerly outpost for early gentian *Gentianella anglica*, with 2–3 colonies totalling several hundred plants in old oolitic limestone quarries.

Component SSSIs

Grimsthorpe Park

Reason for SSSI designation

Probably the best remaining example of ancient parkland in Lincolnshire. The ancient and mature trees support more than 250 species of beetle, including a nationally rare species and several more of restricted distribution in Britain.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site

Qualifying Interest Features

- H6210# Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)
- S1654 *Gentianella anglica*: Early gentian

Current Pressures/Threats

Air Pollution: risk of atmospheric nitrogen deposition

Atmospheric nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.

Rex Graham Reserve SAC

Site Area (ha)

2.76

Site Overview

Covering approximately 2.67 hectares and situated within the Brecks National Character Area, Rex Graham Reserve comprises a small disused chalk pit, together with surrounding grassland and woodland, which supports a large number of Military orchid *Orchis militaris*. Only two other wild populations of this plant are known in the UK and the Rex Graham Reserve population is by far the largest, comprising more than 95% of the current total UK population.

The SAC sits within Thetford Forest, the largest lowland conifer forest in England, in an area where light, sandy acid and calcareous soils overlie chalk, on a gently south-facing slope in the valley of the River Lark. The digging of the pit pre-dates the planting of Thetford Forest in the 1920s and 1930s, and probably ceased to be actively worked in the early Twentieth Century. Military orchids were first found in the pit in the 1950s, and since then conservation management has maintained a high population.

The open sides and floor of the pit are covered with a mixture of plants typical of calcareous grassland and scrub transitions such as mouse-ear hawkweed *Pilosella officinarum*, twayblade *Listera ovata*, adder's-tongue fern *Ophioglossum vulgatum*, ploughman's spikenard *Inula conyza*, mullein *Verbascum thapsus*, and hemp agrimony *Eupatorium cannabinum*. The pit also contains a large number of bushes of mezereon *Daphne mezereum* which occurs here as a wild plant.

Management aims to keep the pit largely free of scrub and trees, control coarse herbaceous vegetation, and create small bare chalk surfaces to aid the regeneration of military orchid. The browsing of orchids is prevented by a deer-and rabbit-proof fencing, which also limits damage to the vulnerable plants from human damage from trampling and picking. A second small separately-fenced pit, created in 1999/2000, allows visitors closer access to see military orchids throughout the summer.

Grassland is maintained around the pits to attract pollinating insects which aid the reproduction of military orchids, and these are in turn surrounded by coniferous and deciduous woodland within and outside the SAC, which give some screening from the adjacent trunk road.

Component SSSIs

Rex Graham Reserve

Reason for SSSI designation

This long-disused chalk-pit supports the largest wild population of a nationally rare plant given special protection under Section 13 of the Wildlife and Countryside Act 1981. There is also a substantial population of another rare plant.

The floor and lower slopes of the chalk-pit are covered by damp, calcareous grassland with many ruderal species. They support a large number of Military Orchids *Orchis militaris*. Only two other wild populations of this plant are known in Britain and the Rex Graham Reserve is by far the largest. The pit also contains a large number of bushes of Mezereon *Daphne mezereon* which is also rare as a wild plant.

Public access has to be strictly controlled.

Conservation Objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the Qualifying Features' ...), and subject to natural change; ensure 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 [as applicable to each site]:

- The extent and distribution of qualifying natural habitats;
- The extent and distribution of the 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 rely;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site

Qualifying Interest Features

- H6210# Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

Current Pressures/Threats

Changes in species distributions

There is insufficient area of early successional habitat to allow orchid populations to be maintained and expand.

Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects through increased site fertility and biomass accumulation, favouring more competitive species. This requires further investigation.

Habitat fragmentation

There is insufficient insect pollination to sustain the isolated orchid population and the surrounding habitat is of relatively low value to pollinators.

Deer

There is a threat to the orchid population from browsing by deer, exacerbated by the orchid population's small size and isolation.

Invasive species

There is a threat to the orchid population from browsing by rabbits and hares exacerbated by the orchid population's small size and isolation.

Public access/disturbance

There is an ongoing threat of damage to the site features from illegal plant collection, exacerbated by the orchid population's small size and isolation.

Appendix C: Review of other plans, programmes and projects for potential in-combination effects

In determining whether there may be any potential effects, it is necessary to consider the likelihood of combined effects with other plans, programmes and projects. Where available, the HRA work undertaken for these plans and projects can be utilised, including that undertaken by adjacent local authorities for their Local Plans.

The table below presents a list of other plans, programmes and projects to review. This will be updated as the HRA for the MWLP progresses.

1. Development Plans

Name of Plan	Organisation
Peterborough Local Plan (Submission Version) (January 2018)	Peterborough City Council
Peterborough Core Strategy DPD (February 2011)	Peterborough City Council
Peterborough Site Allocations DPD (April 2012)	Peterborough City Council
Peterborough Planning Policies DPD (December 2012)	Peterborough City Council
Peterborough City Centre DPD (December 2014)	Peterborough City Council
Cambridgeshire and Peterborough Minerals and Waste Core Strategy DPD (July 2011)	Cambridgeshire County Council and Peterborough City Council
Cambridgeshire and Peterborough Minerals and Waste Site Specific Proposals DPD (February 2012)	Cambridgeshire County Council and Peterborough City Council
East Cambridgeshire Local Plan (Submission version) (November 2017)	East Cambridgeshire District Council
East Cambridgeshire Local Plan (adopted April 2015)	East Cambridgeshire District Council
Huntingdonshire Local Plan 1995 (saved policies) (1995)	Huntingdonshire District Council

Huntingdonshire Local Plan Alteration (2002)	Huntingdonshire District Council
Huntingdonshire Core Strategy (September 2009)	Huntingdonshire District Council
Huntingdonshire Local Plan (Submission Version) (March 2018)	Huntingdonshire District Council
Huntingdonshire Core Strategy DPD (2009)	Huntingdonshire District Council
South Cambridgeshire Local Plan (adopted September 2018)	South Cambridgeshire District Council
Cambridge Local Plan (2006)	Cambridge City Council
Cambridge City Local Plan (Submission version as amended) (2014)	Cambridge City Council
Fenland Local Plan (adopted 2014)	Fenland District Council
South Holland Local Plan (2006)	South Holland District Council
Boston Borough Local Plan (1999)	Boston Borough Council
South East Lincolnshire Local Plan (Submission version)(March 2017)	South Holland District Council and Boston Borough Council
South Kesteven Core Strategy DPD (July 2010)	South Kesteven District Council
South Kesteven Site Allocations and Policies DPD (April 2014)	South Kesteven District Council
King's Lynn and West Norfolk Core Strategy (July 2011)	King's Lynn and West Norfolk Council
King's Lynn and West Norfolk Site Allocations & Development Management Policies Plan (September 2016)	King's Lynn and West Norfolk Council
Forest Heath Core Strategy (May 2010)	Forest Heath District Council
St Edmundsbury Core Strategy (December 2010)	St Edmundsbury Borough Council
Forest Heath and St Edmundsbury Joint Development Management Policies Document (February 2015)	Forest Heath District Council and St Edmundsbury Borough

	Council
Forest Heath Single Issue Review Core Strategy Policy CS7 Overall Housing Provision and Distribution (Proposed Submission)(March 2017)	Forest Heath District Council
Forest Heath Site Allocations Local Plan (January 2017)	Forest Heath District Council
Rutland Core Strategy DPD (July 2011)	Rutland County Council
Rutland Site Allocations and Policies DPD (October 2013)	Rutland County Council
Rutland Minerals Core Strategy and Development Control Policies DPD (October 2010)	Rutland County Council
Rutland Local Transport Plan 3 and Transport Strategy (2011-2026)	Rutland County Council
Lincolnshire Minerals and Waste Local Plan - Core Strategy and Development Management Policies (June 2016)	Lincolnshire County Council
Lincolnshire Minerals and Waste Local Plan - Site Locations (December 2017)	Lincolnshire County Council
Northamptonshire Minerals and Waste Local Plan (July 2017)	Northamptonshire County Council
Norfolk Minerals and Waste Development Framework - Core Strategy and Minerals and Waste Development Management Policies DPD (September 2011)	Norfolk County Council
Norfolk Minerals and Waste Development Framework - Minerals Site Specific Allocations DPD (October 2013, amendments adopted December 2017)	Norfolk County Council
Norfolk Minerals and Waste Development Framework - Waste Site Specific Allocations DPD (October 2013)	Norfolk County Council
Suffolk Minerals and Waste Development Framework - Minerals Core Strategy DPD (incorporating Development Control Policies)(September 2008)	Suffolk County Council
Suffolk Minerals and Waste Development Framework - Minerals Specific Site Allocations DPD (September 2009)	Suffolk County Council
Suffolk Minerals and Waste Development Framework - Waste Core Strategy (March 2011)	Suffolk County Council

2. Other relevant plans and programmes

Name of Plan	Organisation
Peterborough Long Term Transport Strategy (2011 to 2026) and Local Transport Plan 4 (2016 to 2021) (April 2016)	Peterborough City Council
Cambridgeshire Long Term Transport Strategy (July 2015)	Cambridgeshire County Council
Transport Strategy for East Cambridgeshire (2016)	Cambridgeshire County Council
Cambridge City and South Cambridgeshire Transport Strategy (2014)	Cambridgeshire County Council
Cambridge Corridor Transport Plans	Cambridgeshire County Council
Relevant Catchment Flood Management Plans	Environment Agency
Relevant Catchment Abstraction Management Strategies	Environment Agency
River Basin Management Plans	Anglian Water
Water Resources Management Plan	Anglian Water
Cambridgeshire and Peterborough Strategic Spatial Framework (Non-Statutory) (March 2018)	Cambridgeshire and Peterborough Combined Authority

A review of projects on the National Infrastructure Planning website⁵ revealed the following committed (i.e. with planning permission) projects within the study area:

- A14 Cambridge to Huntingdon Improvement Scheme

⁵ <https://infrastructure.planninginspectorate.gov.uk/projects/>

Appendix D: Proposed Stage 1 Screening Matrix

MWLP policy/site allocation name and references	European Site/s Potentially Affected and Qualifying Features	Potential for Likely Significant Effects	Screening Category (screening conclusion)