Habitats Regulations Assessment

Great Addington Neighbourhood Plan

Great Addington Parish Council

Project number: 60571087

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Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
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1. Introduction

1.1 AECOM was appointed by Great Addington Parish Council to undertake Habitat Regulation Assessment (HRA) for the Pre-submission Great Addington Neighbourhood Plan 2021-2041 (GANP). This is to inform the council of the potential effects of Neighbourhood Plan (NP) development on Habitats (previously European) Sites (Special Areas of Conservation, SACs, Special Protection Areas, SPAs, and Ramsar sites designated under the Ramsar convention) and how they are being addressed in the draft NP.

1.2 The GANP contains policies that address a wide range of prominent issues, including maintaining the unique character and heritage of the parish, protecting its environment and historic features, addressing housing needs and requirements in relation to community services, travel and climate change.

1.3 To inform this report, the policies contained within the overarching North Northamptonshire Joint Core Strategy 2011-2031[1] (NNJCS) adopted in July 2016 and the East Northamptonshire Local Plan (Part 2)[2] adopted in December 2023, and sitting at a higher tier in the planning framework, were considered. By definition, development delivered through NPs must conform to the legal framework established by Local Planning Authorities (LPAs).

1.4 The objective of this report is to undertake an appropriate assessment to identify if any policies and / or sites proposed for allocation in the GANP have the potential to cause Likely Significant Effects (LSEs) and, where identified, Adverse Effects on the Integrity of Habitats Sites, either in isolation or in-combination with other plans and projects. Where required recommendations to ensure the protection of Habitats Sites will be made.

Local Context

1.5 Great Addington lies on the west bank of the River Nene, about eight kilometres (five miles) southeast of Kettering. The Parish lies in North Northamptonshire and, prior to local government reorganisation in April 2021, was part of East Northamptonshire district. Great Addington is a rural parish with Great Addington village being the main settlement. The settlement is surrounded by countryside with scattered farms and rural businesses. There were 299 usual residents in Great Addington parish as at Census Day 2021, living in 125 households.

1.6 The NNJCS (with a plan period of 2011 to 2031) does not identify development within Great Addington specifically, although it is part of the East Northamptonshire district for which the NNJCS identifies a housing growth requirement of 8,400 dwellings with 820 dwellings to be provided via rural housing. Table 16 of the East Northamptonshire Local Plan sets out a rural housing need for Parish Council areas of a particular scale in terms of population. The figures are intended as indicative guidance for potential/emerging Neighbourhood Plans in terms of helping meet future housing need, as opposed to a policy requirement. The indicative housing requirement for Great Addington

[1] Available at https://cms.northnorthants.gov.uk/media/3595/download [Accessed 05 April 2024]
[2] Available at https://www.northnorthants.gov.uk/planning-strategies-and-plans/east-northamptonshire-local-plan-part-2 [Accessed 05 April 2024]

is 11-20 dwellings to 2031, provided as windfall rather than as site specific allocations. The location of the Parish is illustrated in **Appendix A**.

Legislative Context

1.7 The United Kingdom (UK) left the European Union (EU) on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). The Withdrawal Act retains the body of existing EU-derived law within our domestic law. The most recent amendments to the Habitats Regulations – the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – make it clear that the need for HRA continues post-Brexit.

1.8 The HRA process applies the Precautionary Principle[3] to Habitats Sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the Habitats Site(s) in question. Plans and projects with predicted adverse impacts on Habitats Sites may still be permitted if there are no alternatives to them that would deliver the same objectives and there are Imperative Reasons of Over-riding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation is necessary to ensure the overall integrity of the site network.

1.9 The need for Appropriate Assessment (AA, **Box 1**) is set out in the Conservation of Habitats and Species Regulations 2017 (as amended).

Box 1: The legislative basis for Appropriate Assessment

Conservation of Habitats and Species Regulations 2017 (As Amended)

With specific reference to Neighbourhood Plans, Regulation 106(1) states that:

"A qualifying body which submits a proposal for a neighbourhood development plan must provide such information as the competent authority [the Local Planning Authority] may reasonably require for the purpose of the assessment under regulation 105… [which sets out the formal process for determination of 'likely significant effects' and the appropriate assessment']."

1.10 Therefore, it is important to note that this report has two purposes:

- To assist the Qualifying Body (Great Addington Parish Council) in preparing their plan by recommending (where necessary) any adjustments required to protect Habitats Sites, thus making it more likely their plan will be deemed compliant with the Conservation of Habitats and Species Regulations 2017 (as amended); and
- On behalf of the Qualifying Body, to assist the Local Planning Authority (was East Northamptonshire until 2021, and is now North Northamptonshire Council) to discharge their duty under Regulation 105 (in their role as 'plan-making authority' within the meaning of that regulation) and Regulation 106 (in their role as Competent Authority) and reach the formal HRA decision.

[3] The Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: *"When human activities may lead to morally unacceptable harm* [to the environment] *that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis".*

1.11 As Competent Authority, the legal responsibility for ensuring that a decision of LSEs is made, an AA (where required) is undertaken, and Natural England are consulted, falls on the Local Planning Authority. However, they are entitled to request from the Qualifying Body the necessary information on which to base their judgment and that is a key purpose of this report.

1.12 Over the years, the term HRA has come into wide currency to describe the overall process set out in the Habitats Regulations, from screening through to identification of IROPI. This term has been coined to distinguish the overall process from the individual stage of AA. Throughout this report the term HRA is used for the overall process and the use of AA is restricted to the specific stage of that name.

1.13 In spring 2018, the 'Sweetman' European Court of Justice ruling[4] clarified that 'mitigation' (i.e., measures that are specifically introduced to avoid or reduce a harmful effect on a Habitats Site that would otherwise arise) must **not** be considered when forming a view on LSEs. Mitigation should instead only be considered at the AA stage. This HRA has been cognisant of that ruling.

Scope of the HRA

1.14 There are no standard criteria for determining the ultimate physical scope of an HRA of a Plan document. Therefore, in considering the physical scope of the assessment, this HRA is guided primarily by the identified impact pathways (called the source-pathway-receptor model) rather than by arbitrary 'zones'. Current guidance suggests that the following Habitats Sites should be included in the scope of assessment:

- All Habitats Sites within the boundary of Great Addington Parish; and,
- Other Habitats Sites shown to be linked to development within the Parish boundary through a known impact pathway (discussed below).

1.15 Briefly defined, impact pathways are routes by which the implementation of a policy within a NP document can lead to an effect upon a Habitats Site. An example of this would be new residential development resulting in an increased population and thus increased recreational pressure, which could then affect Habitats Sites by, for example, disturbance of wintering or breeding birds.

1.16 Guidance from the Ministry of Housing, Communities and Local Government (MHCLG) states that the HRA should be '*proportionate to the geographical scope of the* [plan policy]' and that '*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*' (MHCLG, 2006, p.6). More recently, the Court of Appeal ruled that providing the Council (competent authority) was duly satisfied that proposed mitigation could be '*achieved in practice*' to satisfy that the proposed development would have no adverse effect, then this would suffice. In this case the High Court ruled that for '*a multistage process, so long as there is sufficient information at any particular stage to enable the authority to be satisfied that the proposed mitigation can be achieved in practice it is not necessary for all matters concerning mitigation to be fully resolved before a decision maker is able to conclude that a development will satisfy the requirements of Reg 61 of the Habitats Regulations.*'

[4] People Over Wind and Sweetman v Coillte Teoranta (C-323/17)

The Layout of this Report

1.17 **Chapter 2** of this report explains the methodology by which this HRA has been carried out, including the three essential tasks that form part of HRA. **Chapter 3** provides details of the relevant Habitats Sites, including Conservation Objectives and current pressures and threats. **Chapter 4** provides a summary background on the main impact pathways identified in relation to the GANP and the relevant Habitats Sites. The detailed background is provided in **Appendicx B**. **Chapter 5** undertakes the screening assessment of LSEs of the Plan policies and allocated sites. The AA is undertaken in **Chapter 6**. The conclusions and recommendations arising from the HRA process are provided in **Chapter 7**.

Quality Assurance

1.18 This report was undertaken in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality, environmental and Health and Safety management. All staff members are committed to establishing and maintaining our certification to the international standards BS EN ISO 9001:2015 and 14001:2015, ISO 44001:2017 and ISO 45001:2018. In addition, our IMS requires careful selection and monitoring of the performance of all sub-consultants and contractors.

1.19 All AECOM Ecologists working on this project are members (at the appropriate level) of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2017).

2. Methodology

Introduction to HRA Methodology

2.1 The HRA will be carried out with reference to the general EC guidance on HRA[5] and that of the UK government[6].

2.2 Figure 1 below outlines the stages of HRA. The stages are essentially iterative, being revisited as necessary in response to more detailed information becoming available, recommendations being considered and any relevant changes to the NP being made until no adverse effects on site integrity remain.

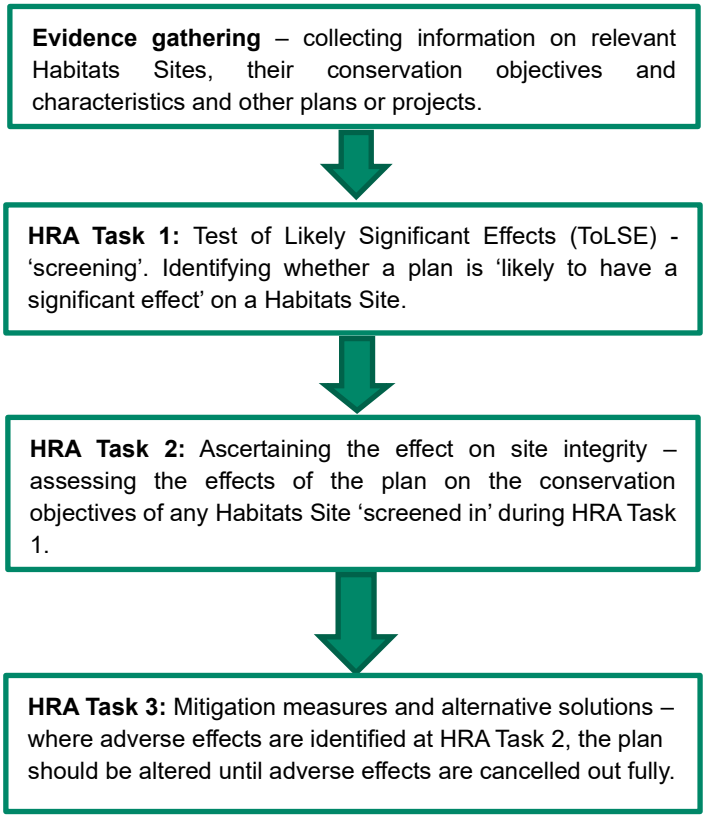


Figure 1: Four Stage Approach to Habitats Regulations Assessment. Source EC, 2011.

Description of HRA Tasks

HRA Task 1 – Likely Significant Effects (LSEs) Screening

2.3 Following evidence gathering, the first stage of any HRA is a LSEs screening - essentially a brief, high-level assessment to decide whether the full subsequent stage known as AA is required. The essential question is:

[5] European Commission (2001): Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.
[6] https://www.gov.uk/guidance/appropriate-assessment

"Is the project, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon Habitats Sites?"

2.4 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be concluded to be unlikely to result in adverse effects upon Habitats Sites, usually because there is no mechanism for an adverse interaction.

2.5 The LSEs screening is based on identification of the impact source, its pathway to receptors and an appraisal of the specific Habitats Site receptors. These are normally qualifying features but also include habitats and species fundamental for such features to achieve favourable conservation status (e.g. functionally linked habitats outside Habitats Site boundaries).

2.6 In the Waddenzee case[7], the European Court of Justice ruled on the interpretation of Article 6(3) of the Habitats Directive, including that:

- An effect should be considered likely, '*if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site*' (para 44);
- An effect should be considered significant, '*if it undermines the conservation objectives*' (para 48); and
- Where a plan or project has an effect on a site '*but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned*' (para 47).

2.7 The LSEs screening consists of two parts: It determines whether there are any policies that could result in negative impact pathways and then establishes whether there are any Habitats Sites that might be affected. It is important to note that LSEs screening must generally follow the Precautionary Principle as its main purpose is to determine whether the subsequent stage of AA (i.e., a more detailed investigation) is required.

HRA Task 2 – Appropriate Assessment

2.8 Where it is determined that a conclusion of 'no LSEs' cannot be drawn, the analysis must proceed to the next stage of HRA known as AA. Case law has clarified that AA is not a technical term. In other words, there are no particular technical analyses, or level of technical analysis, that are classified by law as belonging to AA rather than the screening process. AA refers to whatever level of assessment is appropriate to form a conclusion regarding effects on the integrity (coherence of structure and function) of Habitats Sites in light of their Conservation Objectives.

2.9 By virtue of the fact that it follows LSEs screening, there is a clear implication that the analysis will be more detailed than undertaken at the previous stage. One of the key considerations during AA is whether there is available mitigation that would entirely address the potential effect. In practice, the AA would take any policies or proposed sites that could not be dismissed following the high-level screening analysis and evaluate the potential for an effect in more detail, with a view to concluding whether there would be an adverse effect on site integrity (in

[7] Case C-127/02

other words, disruption of the coherent structure and function of the Habitats Site(s)).

2.10 In 2018 the Holohan ruling[8] handed down by the European Court of Justice included among other provisions paragraph 39, which states that '*As regards other habitat types or species, which are present on the site, but for which that site has not been listed, and with respect to habitat types and species located outside that site, … typical habitats or species must be included in the appropriate assessment, if they are necessary to the conservation of the habitat types and species listed for the protected area*' [emphasis added].

2.11 In evaluating significance, AECOM will rely on professional judgement as well as the results of bespoke studies, supported by appropriate evidence / data, and any available previous stakeholder consultation regarding the impacts of development on the Habitats Sites considered.

HRA Task 3 – Mitigation

2.12 Where necessary, measures will be recommended for incorporation into the Plan in order to avoid or mitigate adverse effects on Habitats Sites. For example, there is considerable precedent, both nationally and locally, concerning the level of detail that a Plan document needs to contain regarding mitigation for recreational pressure impacts on Habitats Sites. The implication of this precedent is that it is not necessary for all measures that will be deployed to be fully developed prior to adoption of the Plan, but that an adequate policy framework within which these measures can be delivered is provided.

2.13 When discussing mitigation for a NP document, one is concerned primarily with the policy framework to enable the delivery of such mitigation, rather than the detail of the mitigation measures themselves since the NP document is a higher level policy document.

Geographical Scope of the HRA

2.14 There are no standard criteria for determining the ultimate physical scope of an HRA. Rather, the source-pathway-receptor model should be used to determine whether there is any potential pathway connecting development to any Habitats Sites.

2.15 In the case of the GANP, an area extending to 15km from the parish boundary was selected in which Habitats Sites were identified. Habitats Sites with hydrological sensitivities were also considered. A maximum search radius of 15km has been used on the basis that any potential for aquatic pollution effects at greater distances is likely to be negligible due to dilution and attenuation factors.

Confirming Other Plans and Projects That May Act 'In Combination'

2.16 It is a requirement of the Regulations that the impacts of any Plan being assessed are not considered in isolation, but also in-combination with other plans and projects that may also be affecting the Habitats Site(s) in question. For example,

[8] Case C-461/17

recreational pressure within sensitive sites (i.e. the impact of the overall visitor volume) is the consequence of the combined regional housing growth, rather than only within individual parishes or LPAs.

2.17 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation; i.e. to ensure that those projects or plans (which in themselves may have minor impacts) are not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in-combination assessment is of greatest relevance when the Plan or policy would otherwise be screened out because its individual contribution is inconsequential.

2.18 The following plans are considered to have the potential to act in-combination with the GANP:

- Anglian Water – Drainage and Wastewater Management Plan (DWMP), (May 2023)[9]
- Anglian Water Water Resources Management Plan 2025 to 2050 (WRMP24)[10]
- North Northamptonshire Joint Core Strategy 2011-2031[11] (Adopted July 2016)
- East Northamptonshire Local Plan (Part 2)[12] (Adopted December 2023)
- Northamptonshire Minerals and Waste Local Plan (2017)[13]

2.19 It should be noted that, while the broad potential impact of these other projects and plans has been considered, this assessment does not undertake full HRA on each of these documents. Instead, existing HRAs that have been undertaken to support the consenting process of these projects were drawn upon.

2.20 Within this document, each site proposed for allocation and policy within the GANP is subjected to HRA screening (summarised in **Tables 2 and 3** respectively). LSEs are then scrutinised in more detail in the main body of the report and, where necessary, an AA is undertaken.

[9] Anglian Water, 2023. Drainage and Wastewater Management Plan. Available at: https://www.anglianwater.co.uk/siteassets/household/about-us/dwmp/dwmp-1.pdf [Accessed 05/04/2024]
[10] Available at Water resources management plan (anglianwater.co.uk) [Accessed 21/05/2024]
[11] Available at https://cms.northnorthants.gov.uk/media/3595/download [Accessed 05 April 2024]
[12] Available at https://www.northnorthants.gov.uk/planning-strategies-and-plans/east-northamptonshire-local-plan-part-2 [Accessed 05 April 2024]
[13] Northamptonshire Minerals and Waste Local Plan (2017) Available at: https://cms.northnorthants.gov.uk/media/4661/download [Accessed 5/4/24]

3. Habitats Sites

3.1 In the case of the GANP, it was determined that the Habitats Sites identified in Table 1 require consideration. The locations of these Habitats Sites in relation to the GANP boundary are shown in Appendix A.

Table 1. Habitats Sites for consideration and their location in relation to the Greater Addington Parish boundary.

Habitats Site	Location and reason for inclusion
Upper Nene Valley Gravel Pits (SPA)	**Within the east of the parish boundary (circa 0.4km from the urban area).** Sensitive to recreational pressure through disturbance to overwintering birds and potential loss of functionally linked habitat. Sensitive to degradation of water quality.
Upper Nene Valley Gravel Pits (Ramsar)	**Within the east of the parish boundary (circa 0.4km from the urban area).** Sensitive to recreational pressure through disturbance to overwintering birds and potential loss of functionally linked habitat. Sensitive to degradation of water quality.

Source: www.magic.defra.gov.uk

3.2 The Habitats Sites were identified based upon a search surrounding the Greater Addington Parish boundary and the sensitivities of the Habitats Sites' qualifying features. The above Habitats Sites were subjected to the initial screening exercise. It should be noted that the presence of a conceivable pathway linking the parish to a Habitats Site does not necessarily mean that LSEs will occur. The location of these Habitats Sites is illustrated in **Appendix A**.

Upper Nene Valley Gravel Pits SPA and Ramsar Site

Introduction

3.3 The closest part of the Upper Nene Valley Gravel Pits (located circa 0.4km from the edge of the urban area of the village) is located within the eastern extent of Great Addington Parish. The closest area is at the Upper Nene Valley Gravel Pits SSSI (Ringstead Gravel Pits Unit 7). The Habitats Site is approximately 35km in length and approximately 1,360ha in size. The site comprises a chain of extant and extinct gravel pits that follow alluvial deposits along the River Nene. It is dominated by a mix of shallow and deeper inland waterbodies, with associated marginal vegetation, improved grassland and nationally scarce wet broad-leaved deciduous woodland dominated by white willow (*Salix alba*) with crack willow (*Salix fragilis*) and occasionally ash (*Fraxinus excelsior*), Osier (*Salix viminalis*) and grey willow (*Salix cinerea*). The site contains internationally important populations of non-breeding wintering waterbirds that have been found in numbers in excess of 20,000 individuals. SSSI Unit 7 is noted to be in

Unfavourable - Recovering condition [14]. The SSSI condition survey conducted in 2020 identified that birds were "*present in appropriate numbers with pochard, coot and shoveler species only slightly below previous survey figures. Part of site not being managed appropriately which will eventually lead to loss of feeding habitat*."[15]

SPA Qualifying Features[16]

3.4 The site is designated as an SPA under article 4.1 of the Directive (Directive 2009/147/EC) for its wintering population of:

- Eurasian bittern (*Botaurus stellaris*)
- European golden plover (*Pluvialis apricaria*)

3.5 The site is designated as an SPA under article 4.2 of the Directive (Directive 2009/147/EC) for its population of:

- Gadwall (*Anas strepera*)
- In the non-breeding season the area regularly supports internationally important populations of waterfowl including northern shoveler (*Anas clypeata*), Eurasian wigeon (*Anas penelope*), mallard (*Anas platyrhynchos*), Gadwall (*Anas strepera*), Common pochard (*Aythya farina*), tufted duck (*Aythya fuligula*), Eurasian bittern (*Botaurus stellaris*), Eurasian coot (*Fulica atra*), great cormorant (*Phalacrocorax carbo*), golden plover (*Pluvialis apricaria*), great crested grebe (*Podiceps cristatus*), and northern lapwing (*Vanellus vanellus*).

Ramsar Qualifying Features[17]

3.6 The Ramsar is designated for:

Criterion 5

In the non-breeding season, the site regularly supports 23,821 individual waterbirds;

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

- Gadwall (*Anas strepera*)
- Mute Swan (*Cygnusolor*)

Conservation Objectives[18]

"*With regard to the SPA and the individual species and/or assemblages of species for which the site has been classified (the 'Qualifying Features' listed above), and subject to natural change;*

[14] Available at Unit detail (naturalengland.org.uk) [accessed 30/04/2024]
[15] IBID
[16] Upper Nene Valley Gravel Pits SPA Citation Available at: https://publications.naturalengland.org.uk/file/5096750222147584 [Accessed on 05/04/2024]
[17] Upper Nene Valley Gravel Pits Ramsar Information Sheet Available at: https://rsis.ramsar.org/RISapp/files/RISrep/GB2023RIS.pdf [Accessed on 05/04/2024]
[18] Upper Nene Valley Gravel Pits SPA Conservation Objectives. Available at: https://publications.naturalengland.org.uk/file/5116592367337472 [Accessed on 05/04/2024]

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 Bird Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features,*
- *The structure and function of the habitats of the qualifying features,*
- *The supporting processes on which the habitats of the qualifying features rely,*
- *The populations of each of the qualifying features, and*
- *The distribution of qualifying features within the site*."

Threats / Pressures to Integrity of SPA[19]

3.7 The key threats and pressures to the integrity of the Upper Nene Valley Gravel Pits SPA / Ramsar have been identified in Natural England's Site Improvement Plan[20] and the Supplementary Advice on Conservation Objectives[21]:

- Public access / disturbance (recreational pressure)
- General planning permissions (including loss of functionally linked land)
- Fisheries: Freshwater
- Change in land management
- Water quantity
- Water quality

3.8 The Information Sheet on Ramsar Wetlands[22] identifies additional factors (past, present, or potential) adversely affecting the site's ecological character:

- Unspecified development: urban use (including loss of functionally linked land)
- Vegetation succession
- Introduction/ Invasion of non-native species
- Recreation / tourism disturbance (recreational pressure)

[19] Site Improvement Plan: Upper Nene Valley Gravel Pits SPA Available at: https://publications.naturalengland.org.uk/publication/6732225261338624 [Accessed on 05/04/2024]
[20] Available at https://publications.naturalengland.org.uk/file/6292733117333504 [Accessed 30/04/2024]
[21] Available at https://designatedsites.naturalengland.org.uk/TerrestrialAdvicePDFs/UK9020296.pdf [Accessed 30/04/2024]
[22] Upper Nene Valley Gravel Pits Ramsar Information Sheet Available at: https://rsis.ramsar.org/RISapp/files/RISrep/GB2023RIS.pdf [Accessed on 05/04/2024]

4. Impact Pathways

4.1 In carrying out an HRA it is important to avoid confining oneself to effectively arbitrary boundaries (such as Local Planning Authority or parish boundaries). Instead, it is important to utilise the source-pathway-receptor model to evaluate whether an impact arising from a NP is connected to relevant Habitats Sites via a realistic pathway. Briefly defined, impact pathways are routes by which a development proposal can lead to an effect upon a Habitats Site. As highlighted earlier, it is also important to bear in mind CLG guidance which states that the AA should be '*proportionate to the geographical scope of the [plan policy]*' and that '*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*' (CLG, 2006, p.6[23]).

4.2 Based upon Natural England's SIPs and professional judgement, there are several impact pathways that require consideration in relation to policies within the GANP and the relevant Habitats Sites, which are:

- Recreational Disturbance,
- Loss of functionally linked land (associated with development),
- Water quality (surface water runoff), and
- Water quality (treatment of sewage effluent).
- Water quantity, level and flow.

4.3 Full details of the background to impact pathways is provided in **Appendix B**

Table 2. Assessment of the identified threats and pressures to The Upper Nene Valley Gravel Pits (SPA, and Ramsar) in relation to the GANP.

Impact pathway	Discussion
Recreational pressure	Increased residential development can lead to increased visitor numbers to a Habitats Site, particularly those within relatively easy recreational access. The Upper Nene Valley Gravel Pits SPA/ Ramsar supports a wide assemblage of breeding, non-breeding and overwintering bird species that can be easily disturbed by human activities such as dog walking and hiking. Furthermore, recreation disturbance in winter can be more adverse because birds are more vulnerable at this time of year due to food shortages. Since Greater Addington Parish is in close proximity to the Upper Nene Valley Gravel Pits SPA/ Ramsar it is expected that recreational pressure would likely result from increased residential development. This impact pathway is discussed, particularly in-combination with residential growth in the wider region.

[23] Department for Communities and Local Government. 2006. *Planning for the Protection of European Sites: Appropriate Assessment*. http://www.communities.gov.uk/index.asp?id=1502244

Impact pathway	Discussion
Loss of functionally linked land	Birds are highly mobile creatures that are not expected to be confined to the boundaries of Habitats Site boundaries. There is now an abundance of authoritative examples of HRA cases on plans affecting bird populations, where Natural England recognised the potential importance of functionally linked land. In relation to the Habitats Sites considered in this HRA, the golden plover (*Pluvialis apricaria*) and, to a lesser extent, lapwing (*Vanellus vanellus*) are the species that this concept is most relevant to (shoveler is also of some relevance but tend to stay immediately adjacent to the SPA). Both golden plover and lapwing are known to feed on parcels of agricultural land outside of Habitats Site boundaries. This has been documented in a number of academic articles and research reports by the British Trust for Ornithology (BTO). For example, a study in County Durham (UK) determined that foraging fields of golden plover were up to 3.7km away from their nest site. A BTO research report highlighted that flocks, or at least individuals, of golden plover made regular movements of 10-12km between agricultural fields, highlighting the potentially long foraging trips this species undertakes. Aside from the distance to Habitats Sites, field size and surrounding land use are also factors that require consideration. This impact pathway is discussed, in-combination with residential growth in the wider region.
Water quality: surface water runoff	Increased residential development within Greater Addington could lead to the loss of previously undeveloped land and increased surface water runoff to nearby Habitats Sites. The Upper Nene Valley Gravel Pits SPA/ Ramsar overlaps Greater Addington Parish and part of the SPA/Ramsar is located within the Greater Addington Parish. This impact pathway is discussed, In-combination and in-isolation with residential growth in the wider region.
Water quality: discharge of treated sewage effluent	Increased housing development at Greater Addington Parish could lead to increased sewage production. Sewage effluent from residential development in Greater Addington Parish is treated by Little Addington Sewage Treatment works (STW) operated by Anglian Water, discharge of sewage takes take place at local watercourses including the River Nene that is hydrologically connected to the Upper Nene Valley Gravel Pits SPA/ Ramsar. Therefore, it is necessary to consider any risk that increased sewage could degrade the water quality (i.e. through increased phosphorus discharge) of Habitats Sites when in the absence of environmental mitigation and adequate wastewater treatment works. This impact pathway is discussed, particularly in-combination with residential growth in the wider region.

Impact pathway	Discussion
Water quantity, level and flow.	Increased housing development at Greater Addington Parish will result in increased need for water resources, that could result in an increase in the need for water abstraction. Water abstraction has the potential to alter hydrological conditions within Habitats Sites that are hydrologically linked to the source of the abstraction. For designated features which are dependent on wetland habitats that are supported by water quantity, flow and volume, maintaining the water supply is critical, especially at certain times of the year during key stages of their life cycles. Poor water quantity, volume and flow has the potential to adversely affect the availability and suitability of feeding and roosting sites foe the Upper Nene Valley Gravel Pits SPA/ Ramsar site. This impact pathway is discussed, particularly in-combination with residential growth in the wider region

4.4 In summary, Table 2 identifies that the following impact pathways should be taken forward to the more detailed AA stage of HRA:

- Recreational pressure;
- Loss of functionally linked land;
- Water quality (surface water runoff);
- Water quality (treatment of sewage effluent); and,
- Water quantity, level and flow.

In Combination Assessment

4.5 It should be noted that due to the small size of the parish and small quantum of development provided by the GANP, most of the impact pathways are considered in combination with other projects and plans. For example, an increase in 16 net new dwellings in isolation would not result in an in isolation recreational pressure linking impact pathway on the Upper Nene Valley Gravel Pits SPA/ Ramsar site. However, when looked at in combination with other projects and plans, the in-combination contribution is likely to be significant. As such, considered in this HRA is the Special Protection Area Mitigation Strategy24 prepared for the Upper Nene Valley Gravel Pits SPA. This strategy was adopted by East Northamptonshire Council on the 21st November 2016, as an addendum to the SPA Supplementary Planning Document (SPD). This places a mitigation charge for any new dwelling within a 3km of the SPA boundary to address possible significant effects of additional residential development to the SPA. Alternatively, individual developments may undertake a bespoke project level Appropriate Assessment and undertake the identified mitigation in agreement with Natural England. However, the existence of this strategy is not taken into account in determining likely significant effects.

[24] Upper Nene Valley Gravel Pits Special Protection Area – Supplementary Planning Document (Mitigation Strategy) Available at: https://cms.northnorthants.gov.uk/media/4013/download [Accessed on 05/04/2024]

4.6 The following impact pathway are considered in isolation:

- Water quality (surface water runoff).

4.7 The following impact pathways are considered in combination:

- Recreational pressure;
- Loss of functionally linked land;
- Water quantity;
- Water quality (treatment of sewage effluent); and,
- Water quantity, level and flow.

5. Likely Significant Effects (LSEs) Screening

Introduction

5.1 When seeking to identify relevant Habitats Sites, consideration has been given primarily to identified impact pathways and the source-pathway-receptor approach, rather than adopting purely a 'zones'-based approach. The source-pathway-receptor approach is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place, whereas the absence of one or more of the elements means there is no possibility for an effect. Furthermore, even where an impact is predicted to occur, it may not result in significant effects (i.e., those which undermine the Conservation Objectives of a Habitats Site).

5.2 The likely zone of influence (ZOI) of a plan or project is the geographic extent over which significant ecological effects are likely to occur. It will vary depending on the specifics of a particular proposal and must be determined on a case-by-case basis with reference to a variety of criteria, including the:

- nature, size / scale and location of the plan;
- connectivity between the plan and Habitats Sites, for example through hydrological interactions or the natural movement of qualifying species;
- sensitivity of ecological features under consideration; and,
- potential for in-combination effects.

Approach to GANP Policy Screening

5.3 There are 22 policies within the GANP. Policies were screened out of having LSEs on a Habitats Site where any of the following criteria applied:

- they are environmentally positive;
- they will not themselves lead to any development or other change;
- they make provision for change but could have no conceivable negative effect on a Habitats Site. This can be because there is no linking pathway between the policy and the qualifying features of a Habitats Site, or because any effect would be positive;
- they make provision for change but could have no significant effect on a Habitats Site (i.e., the effect would not undermine the Conservation Objectives of a Habitats Site); or,
- the effects of a policy on any particular Habitats Site cannot be ascertained because the policy is too general. For example, a policy may be screened out if, based on absence of detail in the policy, it is not possible to identify where, when, or how the policy may be implemented, where effects may occur, or which sites, if any, may be affected.

5.4 Any ‘criteria-based’ policy (i.e., those that simply list criteria with which development needs to comply) or other general policy statements that have no spatial element were also screened out. Likewise, policies that simply ‘safeguard’ an existing resource (e.g., existing green infrastructure or mineral resources) by preventing other incompatible development, were also screened out.

5.5 Therefore, the appraisal focussed on those policies with a definable spatial component. Having established which policies required scrutiny by virtue of being spatially defined, consideration was given as to whether LSEs could be dismissed due to a lack of connectivity to any Habitats Site for one of the following reasons:

- a potentially damaging activity may occur as a result of the policy but there is no reasonable pathway connecting it to a Habitats Site (due to distance, for example);
- there are no Habitats Sites vulnerable to any of the activities that the policy will deliver; or,
- the policy will not result in any damaging activities.

5.6 The results of the LSEs screening of policies included in the GANP are presented in **Table 3**, below. Where a policy is shaded green, there are no linking impact pathways to Habitats Sites and LSEs can be excluded. Where the screening outcome is shaded orange, LSEs cannot be excluded, and the policy is screened in for AA.

Table 3. Screening table of the policies included in the Greater Addington Neighbourhood Plan.

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
Policy GA1: Parking Standards	New development shall provide for parking in accordance with the Northamptonshire Parking Standards	No Likely Significant Effects This is a development management policy relating to parking standards. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA1 does not specify a quantum or location of development.
Policy GA2: The Countryside	The Countryside (land outside the Settlement Boundary as defined on Map 2) will be protected for the sake of its intrinsic character, beauty, heritage and wildlife, the wealth of its natural resources and to ensure it may be enjoyed by all. In Countryside locations only development that is in accordance with national planning policies, strategic planning policies or allocations; or with the other policies of this Neighbourhood Plan will be supported.	No Likely Significant Effects This is a development management policy relating to The Countryside. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA2 is designed to protect the countryside including wildlife and natural resources. It does not specify any quantum, location or type of development.
Policy GA3: Locally Important Views	Development should be located and designed in a way that is sensitive to the local landscape. The potential to enhance the landscape should be considered wherever possible. Particular sensitivity should be shown for the views that are regarded as highly characteristic, as listed below and shown on Map 3: 1. View across the village from East of Woodford Road; 2. View SE from Queens Green Canopy toward Shooters Hill and Little Addington; 3. View SE from stile outside Chapel Close looking across the paddock toward Brightwell Lake;	No Likely Significant Effects This is a development management policy relating to Locally Important Views. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA3 does not specify a quantum, location or type of development.

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
	4. View from the crest of Ringstead Road looking out over Brightwell Lake; 5. View from the Addingtons Playing Fields looking ENE across Brightwell Lake; 6. View into village looking west from top of the hill on the Ringstead Road; and 7. View of village and Church looking NW from Brightwell Lake.	
Policy GA4: Public Rights of Way Network	Development should protect public Rights of Way and wherever possible create new links to the network including footpaths and cycle ways. The creation of an off-road cycle/footpath link between Great Addington and Raunds is supported as part of a new high-level route crossing between Burton Latimer and Raunds.	No Likely Significant Effects This is a development management policy relating to Public Rights of Way Networks Development management policies do not present linking impact pathways and can be screened out from AA. The creation or enhancement of any Public Rights of Way in proximity to the SPA/ Rasar site could result in a linking impact pathway. However, Policy GA4 does not specify a quantum or location of Public Right of Way development.
Policy GA5: Upper Nene Valley Gravel Pits Special Protection Area Mitigation Strategy	For all residential development within the Upper Nene Valley Gravel Pits SPA/Ramsar site 3km buffer zone, as shown in the Local Plan, financial contributions to mitigate the adverse impacts of development upon the SPA/Ramsar site will be sought in accordance with the Addendum to the SPA Supplementary Planning Document: Mitigation Strategy or a later update of the SPD. Consultation with Natural England on residential development proposals may identify a requirement for mitigation measures beyond simply a payment. In such circumstances, and in the case of other types of development potentially resulting in loss of functionally linked habitat to the Upper Nene Valley SPA, a project level Appropriate Assessment will be required to accompany any planning application.	No Likely Significant Effects This is a key development management policy which provides for protection of the SPA/ Ramsar site from increased recreational development. It identifies the need for mitigation to ensure an increase in recreational pressure stemming from new residential development does not have an adverse effect on the Upper Nene Valley Gravel Pits Habitats Sites.

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
Policy GA6: Ecology and Biodiversity	Development should not harm the network of local ecological features and habitats (Map 5). New development will be expected to maintain and enhance these and other ecological corridors and landscape features (such as watercourses, hedgerows and tree-lines). New development will be expected to secure measurable net gains for biodiversity. The priority for biodiversity enhancement is to link the wetland habitat reservoirs through the River Nene corridor. Within the Nene Valley Nature Improvement Area, planning applications should be accompanied by an ecological survey unless the type and location of development is such that the impact on biodiversity will be insignificant.	No Likely Significant Effects This is a development management policy relating to ecology and biodiversity. Development management policies do not present linking impact pathways and can be screened out from AA. This is a positive policy. Policy GA6 is designed to protect the local ecological features and habitats associated with the parish and the Nene Valley corridor (as identified in Map 5 of the NP).
Policy GA7: Trees and Hedges	Existing trees and hedgerows should be retained where possible and integrated into new developments. Development that damages or results in the loss or deterioration of ancient trees, hedgerows or trees of good arboricultural and amenity value will not be supported. Proposals should be designed to retain ancient trees, hedgerows or trees of arboricultural and amenity value. Proposals should be accompanied by a tree survey that establishes the health and longevity of any affected trees and hedgerows, indicating replanting where appropriate.	No Likely Significant Effects This is a development management policy relating to trees and hedgerows. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA7 is designed to protect the local ecology features (trees and hedgerows) and does not provide for any development. .
Policy GA8: Water Management	Development sites should be built to manage surface water sustainably and utilise resources sustainably during use. Major development should incorporate: A. Sustainable Drainage Systems (SuDS) unless demonstrated to be inappropriate. All schemes for the inclusions of SuDS should demonstrate they have considered all four aspects of good SuDS design, Quantity, Quality, Amenity and Biodiversity, and the SuDS and development will fit into the existing landscape. The completed SuDS schemes should be accompanied by a maintenance schedule detailing maintenance boundaries, responsible parties and arrangements to ensure that the SuDS are maintained in perpetuity;	No Likely Significant Effects This is a development management policy relating to water management Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA8 is designed to support sustainable water management. Sustainable

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
	B. Surface water discharges that have been carried out in accordance with the drainage hierarchy, such that discharge to the public sewerage systems is avoided, where possible; C. Incorporate water efficient design and technology; and D. Protection of existing drainage systems. No development shall prevent the continuation of existing natural or manmade drainage features, where watercourses or dry ditches are present within a development site, these should be retained and where possible enhanced.	water management by definition will not result in an adverse effect on the SPA/ Ramsar site.
Policy GA9: Locally Valued Heritage Assets	Development proposals that will affect the following locally valued heritage assets or their setting will be assessed having regard to the scale of any harm or loss and the significance of the heritage asset: Features of Local Heritage Interest (Map 9): 1. Leopard House 2. Old Stones 3. Fern Cottage 4. All Saints Cottage 5. Stepping stones 6. Home Farm Traditional stone walls (Map 9) Ridge and Furrow areas	No Likely Significant Effects This is a development management policy relating to Locally Valued Heritage Assets. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA9 does not specify a quantum, type, or location of development.
Policy GA10: Design	To support the creation of high quality, beautiful and sustainable buildings and places, development should reflect the Great Addington Design Guide. Development that is not well designed will not be supported, especially where it fails to reflect the Great Addington Design Guide and government and local guidance on design.	No Likely Significant Effects This is a development management policy relating to design. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA10 does not specify a quantum, type or location of development.

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
Policy GA11: Local Green Space	The Addingtons Playing Field, identified on Map 10, is designated as Local Green Space. Development proposals within the Local Green Space will only be supported in very special circumstances.	No Likely Significant Effects This is a development management policy relating to Local Green Space. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA11 aims to protect local green space. This is a positive policy. Depending on its location, loss of local green spaces could increase recreational pressures on the SPA/ Ramsar site. This policy provides protection for local green spaces.
Policy GA12: Ultrafast Connectivity	New dwelling and business development should incorporate open access ducting to industry standards, to enable all new premises and homes to be directly served by fibre optic broadband technology (Fibre to the Premise). Exceptions will only be considered where it can be demonstrated that making such provision would render the development unviable.	No Likely Significant Effects This is a development management policy relating to ultrafast connectivity. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA12 does not specify a quantum, type or location of development.
Policy GA13: Retention of Community Services and Facilities	The following facilities will be protected and development which assists their diversification and improvement is supported in accordance with North Northamptonshire Joint Core Strategy 2011-2031 Policy 7: • Great Addington CE Primary School • Hare and Hounds PH • Great Addington Memorial Hall • The Addingtons Playing Field	No Likely Significant Effects This is a development management policy relating to the retention of community services and facilities. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA13 does not specify a quantum or location of housing / employment development. This is a positive policy.

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
		Depending on its location, loss of local green spaces could increase recreational pressures on the SPA/ Ramsar site. This policy provides protection for local green spaces.
Policy GA14: Infrastructure	New development will be supported by the provision of new or improved infrastructure, together with financial contributions for the following off-site infrastructure requirements where appropriate: A. The improvement, remodelling or enhancement of Great Addington Memorial Hall; B. Countryside access improvements in accordance with Policy GA4; C. Community infrastructure improvements including the provision of parish notice boards, seats, children's play area equipment, litter bins. Contributions are governed by the provisions of the Community Infrastructure Regulations 2010. To ensure the viability of housing development, the costs of the Plan's requirements may be applied flexibly where it is demonstrated that they are likely to make the development undeliverable.	No Likely Significant Effects This is a development management policy relating to infrastructure. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA14 does not specify a quantum, type or location of development, it merely supports it.
Policy GA15: Housing requirement	The housing requirement for Great Addington Neighbourhood Area for the period 2021 to 2040 is for approximately 11 to 20 dwellings. This will be met by: A. Existing committed developments; B. The allocation of land North of Cranford Road, Great Addington for the development of approximately 16 dwellings in accordance with Policy GA17; and C. Windfall development in accordance with Policy GA16.	Potential for LSEs, screened in for AA. Policy GA15 specifically allocates a new site for development (beyond that provide by the overarching Local Plan) at Land North of Cranford Road. The allocation is for 16 net new dwellings. Policy GA15 includes windfall development with an overall expectation of all development in the range of 11 to 20 dwellings in the plan period. Therefore, this policy has the potential to result in LSEs regarding the following impact pathways: • Recreational Pressure; • Loss of Functionally Linked Land; • Water quality (surface water runoff);

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
		• Water quality (treatment of sewage effluent); and, • Water quantity, volume and flow. Allocation GA 17 does not provide functionally linked land as (from looking at freely available online aerial imagery) this site is located in a semi disturbed setting on the urban fringe, surrounded on three side by residential or employment development. The field appears to be grazed grassland, surrounded on all sides by hedgerows, thus offering limited sight lines into the wider landscape.
GA16: Infill	Housing development proposals will be supported within the Settlement Boundary identified on Map 11.	No Likely Significant Effects This is a development management policy relating to infill. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA16 supports development rather than allocate it. It does not specify a quantum or explicit location of housing development.
GA17: Land North of Cranford Road, Great Addington	Approximately 1.4 hectares of land north of Cranford Road (opposite Rushwell Close), as shown on Map 11, is allocated of which approximately 0.61 hectares is for housing development and the remainder being green space. Development will be supported subject to the following criteria: A. The development shall provide for approximately 16 dwellings with housing mix in accordance with Policy GA19 and affordable housing in accordance with the National Planning Policy Framework, Joint Core Strategy and Policy GA20; B. A sustainable drainage system with suitable surface water and foul water drainage strategies devised in consultation with the relevant infrastructure bodies;	Potential for LSEs, screened in for AA. Policy GA17 specifically allocates 1.4 hectares for development on Land North of Cranford Road. The allocation is for 16 dwellings. Therefore, this policy has the potential to result in LSEs regarding the following impact pathways: • Recreational Pressure; • Loss of functionally linked land; • Water quality (surface water runoff);

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
	C. A landscaping scheme to provide for: a. On-site Mandatory Biodiversity Net Gain unless it is not possible to provide this on-site; b. Other than where necessary to provide for site access, boundary hedgerows to be retained and reinforced or replaced, using native hedgerow species; c. The provision of approximately 0.8 hectares as a community recreation area, with land set aside for sustainable drainage system features and Biodiversity Net Gain if necessary. A Landscape Management Plan is required that secures the long-term management and community use of the recreation area in perpetuity; D. The proposal must demonstrate to the satisfaction of Natural England that there is an adequate solution to mitigate the effects of development on the Upper Nene Valley Gravel Pits SPA prior to any grant of planning permission; E. Relocation and undergrounding of overhead electricity lines across the site; F. The residential amenities of adjoining properties are protected; G. The provision of a safe pedestrian and cyclist access alongside Cranford Road to connect to the existing adopted footpath new footpath network; and H. Speed reduction measures on the Cranford Road approach to the village.	• Water quality (treatment of sewage effluent); and, • Water quantity, volume and flow. Allocation GA 17 does not provide functionally linked land as (from looking at freely available online aerial imagery) this site is located in a semi disturbed setting on the urban fringe, surrounded on three side by residential or employment development. The field appears to be grazed grassland, surrounded on all sides by hedgerows, thus offering limited sight lines into the wider landscape. It is noted that point D of this policy provides protection of the Upper Nene Valley Gravel Pits Habitats Sites. **However, it is recommended that the wording be amended for technical correctness to state: "*The proposal must demonstrate to the satisfaction of Natural England that there is an adequate solution to mitigate the effects of development on the Upper Nene Valley Gravel Pits SPA to ensure no adverse effects on the integrity of the Habitats Site result prior to any grant of planning permission*"**
GA18: Housing Mix	Unless informed by more up to date evidence of housing need, on developments of five or more dwellings, the proportion of market housing that is four or more bedrooms should be at the lower end of the 15-20% range. Applicants should demonstrate how their development will contribute to meeting the housing needs of older people.	No Likely Significant Effects This is a development management policy relating to housing mix. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA18 does not specify a quantum or location of housing development.

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
GA19: Affordable Housing	The priority for the provision of affordable housing in Great Addington is First Homes. All affordable housing will be subject to conditions, or a planning obligation will be sought, to ensure that when homes are allocated, priority is given to people with a local connection to Great Addington Neighbourhood Area (i.e. including living, working or with close family ties in the Area).	No Likely Significant Effects This is a development management policy relating to affordable housing. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA19 does not specify a quantum or location of housing development.
GA20: Residential Conversion of Rural Buildings	The re-use and adaptation of redundant or disused buildings for residential use will be supported where: A. The building is of architectural and historical interest; B. The building is structurally sound and capable of conversion without significant rebuild or alteration; C. The development will maintain the character of the building, including the retention of important features; D. The use of the building by protected species is surveyed and mitigation measures are approved where necessary; and E. Any proposed extension(s) or alterations are proportionate to the size, scale, mass and footprint of the original building and situated within the original curtilage.	No Likely Significant Effects This is a development management policy relating to residential conversion of rural buildings. Development management policies do not present linking impact pathways and can be screened out from AA. This policy *could* provide linking impact pathways to the Upper Nene Valley Gravel Pits SPA/ Ramsar site, because it is likely to result in an increase in bedroom numbers, and thus potential to increase recreational pressure on the Habitats Site. If development is for employment use, there are other potentially linking impact pathways to consider. However, this policy merely supports development. Policy GA20 does not specify a quantum, type or location of development. There are no realistic linking impact pathways present.
GA21: Business Conversion of Rural Buildings	The re-use, adaptation or extension of rural buildings for business use will be supported where: A. Any enlargement is proportionate to the size, scale, mass and footprint of the original building;	No Likely Significant Effects This is a development management policy relating to business conversions of rural buildings. Development management policies

Policy number / name	Policy text	Likely Significant Effects (LSEs) screening assessment
	B. The development would not have a detrimental effect on the fabric, character and setting of historic buildings; C. The development respects local building styles and materials; D. The building is surveyed for protected species and mitigation measures are approved where necessary; E. The proposed development would not generate traffic of a type or amount harmful to local rural roads, or require improvements which would detrimentally affect the character of such roads or the area generally; and F. The proposed development would not materially harm the character of the surrounding rural area.	do not present linking impact pathways and can be screened out from AA. This policy *could* provide linking impact pathways to the Upper Nene Valley Gravel Pits SPA/ Ramsar site, depending on the type and location of development. However, this policy merely supports development. Policy GA21 does not specify a quantum, type or location of employment development. There are no realistic linking impact pathways present.
GA22: Working from Home	Development that enables home working will be supported if the development: A. Is in keeping with the scale, form and character of its surroundings; B. Does not significantly adversely affect the amenities of residents in the area; and C. Has safe and suitable access to the site for all people.	No Likely Significant Effects This is a development management policy that supports working from home. Development management policies do not present linking impact pathways and can be screened out from AA. In particular, Policy GA22 does not specify a quantum, type or location of development.

Results of Policy Screening

5.7 Of the 22 GANP policies, two policies (Policy GA15: Housing requirement; and Policy GA17: Land North of Cranford Road, Great Addington) are considered to have the potential to result in LSEs, either alone or in combination with other plans and projects, as they are associated with impact pathways linking to Habitats Sites. Both these policies provide for a residential allocation and 16 net new dwellings. Potential linking impact pathways that are taken forward to Appropriate Assessment are: recreational pressure, loss of functionally linked land, water quality (surface water runoff), water quality (treatment of sewage effluent), and water quantity, volume and flow.

6. Appropriate Assessment

Introduction

6.1 The law does not prescribe how an AA should be undertaken or presented but that it must consider all impact pathways that were screened in, whether they are due to policies alone or in-combination with other projects and plans. The law does not require the alone and in-combination effects to be examined separately provided all effects are discussed.

6.2 The two policies that could potentially result in a likely significant effect and require Appropriate Assessment (as determined within Section 5**Error! Reference source not found.**) are:

- Policy GA15: Housing requirement; and
- Policy GA17: Land North of Cranford Road, Great Addington.

6.3 The NNJCS identified a need for 820 dwellings in Rural areas during the plan period. The indicative housing requirement for Great Addington is 11-20 dwellings (to 2031). The GANP identifies one site allocation (Policy GA 17 for 16 net new dwellings) to fulfil this target and is only responsible for a small portion of growth within the NNJCS. Therefore, it is determined that the AA focuses on the in-combination impacts with other plans and projects.

6.4 By virtue of the small amount of growth specified for Great Addington (i.e. 16 net new dwellings) and the distance to the closest Habitats Sites (c. 0.4km between the Habitats Site and the urban fringe of Great Addington), the main impact pathways of concern to this HRA (water quality, water quantity, volume and flow, recreational pressure and loss of functionally linked habitat) are inherently 'in combination' with all other growth in the North Northamptonshire Joint Core Strategy and neighbouring plans and projects. However, for completeness, the potential impacts of 16 net residential developments within Great Addington Parish in isolation are also assessed with regards to water quality changes relating to surface runoff.

6.5 The impact pathways that could not be screened out in the Likely Significant Effects Test (Chapter 5) identified as being relevant in relation to the GANP are:

- Recreational Pressure;
- Loss of functionally linked land;
- Water quality (surface water runoff);
- Water quality (treatment of sewage effluent); and,
- Water quantity, volume and flow.

Recreational Pressure

6.6 Human activity can affect birds either directly (e.g. by causing them to flee) or indirectly (e.g. by damaging their habitat or reducing their fitness in less obvious ways e.g. stress). The most obvious direct effect is that of immediate mortality

such as death by shooting, but human activity can also lead to much subtler behavioural (e.g. alterations in feeding behaviour, avoidance of certain areas and use of sub optimal areas etc.) and physiological changes (e.g. an increase in heart rate). While these are less noticeable, they might result in major population-level changes by altering the balance between immigration/birth and emigration/death[25].

6.7 Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding[26]. Disturbance therefore risks increasing energetic expenditure of birds while reducing their energetic intake, which can adversely affect the 'condition' and ultimately survival of the birds. Additionally, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they then must sustain a greater number of birds[27]. Moreover, the more time a breeding bird spends disturbed from its nest, the more its eggs are likely to cool and the more vulnerable they, or any nestlings, are to predators. Recreational effects on ground-nesting birds are particularly severe, with many studies concluding that urban sites support lower densities of key species, such as stone curlew and nightjar[28] [29]. Recreation disturbance in winter can be more adverse because birds are more vulnerable at this time of year due to food shortages.

6.8 Evidence in the literature suggests that the magnitude of disturbance clearly differs between different types of recreational activities. For example, dog walking leads to a significantly higher reduction in bird diversity and abundance than hiking[30]. Scientific evidence also suggests that key disturbance parameters, such as areas of influence and flush distance, are significantly greater for dog walkers than hikers[31]. A UK meta-analysis suggests that important spatial (e.g. the area of a site potentially influenced) and temporal (e.g. how often or long an activity is carried out) parameters differ between recreational activities, suggesting that activity type is a factor that should be taken into account in HRAs[32].

6.9 Studies investigated recreational disturbance on the golden plover, one of the key qualifying species that overwinters in the Upper Nene Valley Gravel Pits SPA / Ramsar. One study showed that golden plover actively avoided any areas within 200m of footpaths used by visitors[33]. These results were corroborated in another study, which determined that golden plover responded with major flight to moorland visitors that approached to within 200m[34]. The disturbance effect was

[25] Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. Scottish Natural Heritage.
[26] Riddington, R. *et al*. 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* 43:269-279
[27] Gill, J.A., Sutherland, W.J. & Norris, K. 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* 12: 67-72
[28] Clarke R.T., Liley D., Sharp J.M., Green R.E. 2013. Building development and roads: Implications for the distribution of stone curlews across the Brecks. PLOS ONE. doi:10.1371/journal.pone.0072984.
[29] Liley D., Clarke R.T. 2003. The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. Biological Conservation 114: 219-230.
[30] Banks P.B., Bryant J.Y. 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. Biology Letters 3: 14pp.
[31] Miller S.G., Knight R.L., Miller C.K. 2001. Wildlife responses to pedestrians and dogs. 29: 124-132.
[32] Weitowitz D., Panter C., Hoskin R., Liley D. The spatio-temporal footprint of key recreation activities in European protected sites. Manuscript in preparation.
[33] Finney S.K., Pearce-Higgins J.W. & Yalden D.W. (2005). The effect of recreational disturbance on an upland breeding bird, the golden plover *Pluvialis apricaria*. Biological Conservation 121: 53-63.
[34] Yalden P.E. & Yalden D.W. (1990). Recreational disturbances of breeding golden plovers *Pluvialis apricaria*. Biological Conservation 51: 243-262.

more pronounced when chicks were present, with parents spending 11% of the day reacting to people that represented a 15% increase in energy expenditure.

6.10 Disturbance can also result from a wider urbanisation effect that might pose a more direct threat to survival, such as in the case of predation by dogs and cats. Dogs are often exercised off-lead and roam out of sight of their owners and have been documented to kill ground-nesting birds. Cats tend to roam freely at night, potentially seeking out prey many kilometres away from their home.

Discussion

6.11 Following the submission of the draft North Northamptonshire Joint Core Strategy HRA in 2012, Natural England recommended a visitor access survey of the Upper Nene Valley Gravel Pits designated site be undertaken. The Visitor Access Study[35] undertaken in winter 2012 and spring 2013 interviewed 939 individuals. 98% of the interviewees were on a short visit from home. The most common activity undertaken by visitors to the Upper Nene Valley Gravel Pits was dog walking (48% of interviewees) with 636 dogs recorded on site. Walking was the next most common activity (36% of interviewees), followed by bird watching.

6.12 The survey found that the median distance travelled by a visitor from a home postcode to a survey point location within the designated site was 3.2km (mean 5.85km ± 0.31) with 75% of visitors living within 7.5km of the survey point within the designated site. There was no statistically significant seasonal difference between the distances travelled between spring and winter. Following discussions with Natural England, the Joint Planning Unit and following consideration of the Visitor Access Study, it was decided that the zone from which a significant quantum of recreational pressure to the designated sites originated was 3km. As such, it was determined that any new residential development within 3km of the SPA/Ramsar site could result in an in-combination likely significant effects as a result of increases in recreational activities within the sites.

6.13 The site allocation GA17: Land North of Cranford Road, Great Addington allocates a total of 16 dwellings and is located 820m west of the Upper Nene Valley Gravel Pits SPA/Ramsar. Therefore, strategic mitigation measures will be required to prevent recreation pressure resulting in an adverse effect on the integrity upon the Upper Nene Valley Gravel Pits SPA/Ramsar in combination with development provided in surrounding authorities within 3km of the Upper Nene Valley Gravel Pits Habitats Site.

6.14 Paragraph 1.4 of the mitigation strategy SPD Addendum states that "*residential developments which result in a net increase in the number of dwellings within 3km of the SPA it is proposed to avoid and mitigate likely significant effect on the SPA by making a financial contribution towards Strategic Access Management and Monitoring (SAMM) and/or other suitable mitigation*". In the SPD addendum the contribution is identified as £269.44 per dwelling but this is indexed linked, as of 1 April 2023 the rate is £363.62[36] This value is subject to change. The SPD Addendum note that large sites situated close to the SPA may need to deliver additional mitigation such as Suitable Alternative Natural Greenspace. However, the site allocated in Policy GA17 will only accommodate 16 dwellings, and as such is not considered to be a large site.

[35] Footprint Ecology (2014). Visitor Access Study of the Upper Nene Valley Gravel Pits SPA.
[36] Great Addington Neighbourhood Plan Pre-submission Draft (2021-2041)

6.15 The delivery of 16 net new dwellings, assuming a typical average occupancy of 2.4 residents per dwelling, would result in 86 new residents. Assuming that these are all people who do not already live within the village (which is a precautionary assumption), it would involve a 12% increase in dwellings and a 28% increase in the population of 299 in the village. Although this is a significant increase in percentage within the village the absolute numbers involved are insignificant, this development would not materially change the level of recreational pressure on the Upper Nene Valley Gravel Pits Habitats Sites arising from Great Addington village.

6.16 Therefore, although the housing site is located close to the SPA and certainly within easy walking distance, the appropriate financial contributions to the SPD mitigation strategy are likely to be sufficient to conclude no adverse effect on integrity from this development alone or in combination with other projects and plans. It is noted that the SPD also states that "*Further mitigation will be in exceptional circumstances and where Natural England advise. If a bespoke process is required, then a project level Appropriate Assessment will be required*". This requirement would therefore need to be reflected in Neighbourhood Plan policy in order to allow for the appropriate application-level assessment as needed. It is understood that GANP Policy GA 17 also provides for approximately 0.79 ha of green space.

6.17 In accordance with the Upper Nene Valley Gravel Pits SPA mitigation strategy, it is a requirement that discussion with Natural England is undertaken at the earliest possible stage of planning.

6.18 The Great Addington NP does provide mitigation policies for the protection of Habitats Sites:

- Policy GA 5 – Upper Nene Valley Gravel Pits Special Protection Area Mitigation Strategy: "*For all residential development within the Upper Nene Valley Gravel Pits SPA/Ramsar site 3km buffer zone, as shown in the Local Plan, financial contributions to mitigate the adverse impacts of development upon the SPA/Ramsar site will be sought in accordance with the Addendum to the SPA Supplementary Planning Document: Mitigation Strategy or a later update of the SPD. Consultation with Natural England on residential development proposals may identify a requirement for mitigation measures beyond simply a payment. In such circumstances, and in the case of other types of development potentially resulting in loss of functionally linked habitat to the Upper Nene Valley SPA, a project level Appropriate Assessment will be required to accompany any planning application*."

- Policy GA 6 – Ecology and Biodiversity: "*Development should not harm the network of local ecological features and habitats (Map 5). New development will be expected to maintain and enhance these and other ecological corridors and landscape features (such as watercourses, hedgerows and tree-lines). New development will be expected to secure measurable net gains for biodiversity. The priority for biodiversity enhancement is to link the wetland habitat reservoirs through the River Nene corridor. Within the Nene Valley Nature Improvement Area, planning applications should be accompanied by an ecological survey unless the type and location of development is such that the impact on biodiversity will be insignificant*."

- Policy GA 17 - Land North of Cranford Road, Great Addington: "*…D. The proposal must demonstrate to the satisfaction of Natural England that there is an adequate solution to mitigate the*
- *effects of development on the Upper Nene Valley Gravel Pits SPA prior to any grant of planning permission;…".* **A small amendment to this policy text is recommended for technical correctness (text underlined) to state: "*The proposal must demonstrate to the satisfaction of Natural England that there is an adequate solution to mitigate the effects of development on the Upper Nene Valley Gravel Pits SPA to ensure no adverse effects on the integrity of the Habitats Site result prior to any grant of planning permission*"**

6.19 With the above recommendation included, it is considered that the overall avoidance measures provided by the Greater Addington Parish NP, the overarching Development Plan documents and the strategic Upper Nene Valley Gravel Pits SPA Supplementary Planning Document will provide sufficient policy framework to ensure that no adverse effects on integrity arise alone or in combination with growth across the relevant parts of East Northamptonshire or elsewhere within the recreation 3km zone of influence.

Loss of Functionally Linked Land

6.20 While most Habitats Sites have been geographically defined to encompass the key features that are necessary for coherence of their structure and function, and the support of their qualifying features, this is not necessarily the case. A diverse array of qualifying species including birds, bats and amphibians are not always confined to the boundary of designated sites.

6.21 For example, the highly mobile nature of both wader and waterfowl species implies that areas of habitat of crucial importance to the integrity of their populations lie outside the physical limits of Habitats Sites. Despite not being part of the formal designation, these habitats are integral to the maintenance of the structure and function of the designated site, for example by encompassing important foraging grounds. Therefore, land use plans that may affect such functionally linked habitat require further assessment.

6.22 There is now an abundance of authoritative examples of HRA cases on plans affecting bird populations, where Natural England recognised the potential importance of functionally linked land[37].

6.23 The identification of an area as functionally linked habitat is not always a straightforward process. The importance of non-designated land parcels may not be apparent and thus might require the analysis of existing data sources (e.g. Bird Atlases or data from records centres) to be firmly established. In some instances, data may not be available at all, requiring further survey work.

Discussion

6.24 The Upper Nene Valley Gravel Pits Habitats Site is partially designated for bittern, golden plover and gadwall as well as an important bird assemblage including wigeon and lapwing. Of these species the most likely to utilise land

[37] Chapman C & Tyldesley D. 2016. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects – A review of authoritative decisions. *Natural England Commissioned Reports* **207**. 73pp

outside of the site include golden plover, wigeon and lapwing as indicated in the Supplementary Advice on the Conservation Objectives. These species utilise arable farmland during the winter for foraging, with golden plover utilising farmland up to 10km from their roosting sites (e.g. the SPA). Areas of arable land within 10km of the site SPA and Ramsar could potentially be utilised as functionally linked land for one or more of the SPA and Ramsar species.

6.25 The East Northamptonshire LP HRA (2021) concluded that a precautionary distance of 10km around the SPA defined the extent to which functionally linked land associated with the SPA could be found.

6.26 The single site allocation (Policy GA 17 Land North of Cranford Road, Great Addington) is an area of grazed grassland (as observed through aerial photography) that is potentially suitable for breeding lapwing and golden plover, however the site designation is for wintering (non-breeding) birds of these species.

6.27 Both lapwing and golden plover are known to forage in farmland habitats, including open permanent grassland and large arable fields with open boundaries, especially where manure has been applied. They often return to the same fields year after year. Golden plover often feed alongside lapwings. Earthworms form a major part of the winter diet of both species. However, they prefer tilled soil. [38]

6.28 However, allocation GA 17 is highly unlikely to provide functionally linked land. It is approximately 1.4 ha in size. Sites of < 2ha in size are less likely to provide sufficient functionally linked habitat to regularly support more than 1% of the population of a qualifying bird species. The Upper Nene Valley Gravel Pits SPA Supplementary Planning Document states that undeveloped farmland sites (2 ha or larger) could provide functionally linked land to support designated features. The site allocated GA17 is 1.4ha which is below the threshold documented in the SPD. The land parcel is located on the edge of the village, to the west of Great Addington. The built area of the village is located between the allocated land parcel and the Habitats Site, so birds would have to pass over the built area to reach this land parcel. The land parcel is also located within a semi disturbed setting, surrounded on three side by residential or employment development. It is also surrounded on all sides by hedgerows, thus offering limited sight lines into the wider landscape. There are many other arable fields in the area which surround Greater Addington for 2-3km in all directions and more closely meet the requirements of foraging habitats for golden plover and lapwing. All these factors confirm that the site would not be used as functionally linked land for designated bird features.

6.29 Other windfall development that is bought forward is likely to be within the urban envelop (and thus subject to high levels of existing disturbance) or in the vicinity of existing disturbance associated with farm yard activities., and thus making the land parcels unsuitable for functionally linked land. None the less, any development bought forward would have to be in accordance with Policy GA 5 – Upper Nene Valley Gravel Pits Special Protection Area Mitigation Strategy and the overarching North Northamptonshire Joint Core Strategy, both of which provide a suitable projective framework.

[38] Illustrated guide to managing farmland for lapwings (TIN090) Available at https://publications.naturalengland.org.uk/file/92021 [Accessed 10/04/24]

6.30 It is considered that a sufficient policy framework to ensure that no adverse effects on integrity arise alone in relation to loss of functionally linked land.

Water Quality: discharge of treated sewage effluent

6.31 Sewage and some industrial effluent discharges contribute to increased nutrients in the Habitats Sites and most importantly to elevated phosphate levels in watercourses. Phosphorus is the primary limiting nutrient in surface waters such as lakes, reservoirs and rivers, and excessive concentrations might lead to undesirable shifts in ecological communities such as dominance of the phytoplankton by cyanobacteria.

6.32 The quality of the water that feeds Habitats Sites is an important nature determinant of their habitats and the species they support. Rivers, streams and aquatic environments supported/that are fed by these sites can be affected by pollution from road run-off such as oil/ vehicle chemicals, and in the winter increased salt from de-icing the roads and pollution incident(s), and increased run-off from a specific land parcel (such as a site allocation).

6.33 Poor water quality can have a range of environmental impacts. At high levels, toxic chemicals and metals can result in the immediate death of aquatic life. At lower levels, detrimental effects can also be experienced, including increased vulnerability to disease and changes in wildlife behaviour.

6.34 Dabbling ducks such as gadwall, for which the Upper Nene Valley Gravel Pits SPA / Ramsar is designated, mainly feed on submerged macrophytes and these, largely being shaped by phosphate levels, are susceptible to the influx of sewage effluent. Freshwater bodies are therefore particularly prone to eutrophication, which involves excessive algal growth and concomitant deoxygenation of the water. Overall, sewage pollutants, and especially phosphorus levels, have the potential to affect the food sources of gadwall.

Discussion: Discharge of treated sewage effluent

6.35 Increased housing development at Great Addington would likely lead to increased sewage production. Sewage effluent from residential development in Great Addington is treated by Little Addington Sewage Treatment Works (STW) operated by Anglian Water.

6.36 Little Addington STW discharges processed effluent into the River Nene Navigation, which is very likely to be connected to the gravel pits that constitute the SPA and Ramsar site. However, this connection will be through groundwater which significantly limits the ability of phosphate discharged to surface watercourse to influence surface water phosphate concentrations in the gravel pits due to percolation through the intervening soils. It is important to ensure that the treatment plant operates within its Environment Agency (EA) discharge consent in order to meet the water quality objectives set out in the Water Framework Directive (WFD) and to ensure that no adverse effects on the integrity to the Upper Nene Valley Gravel Pits Habitats Site results. As identified in Natural England's Site Conservation Objective Supplementary Advice for the SPA / Ramsar, this will ensure that the site integrity of the Upper Nene Valley Gravel Pits SPA / Ramsar remains protected.

6.37 GANP Policy GA8: Water Management provides for water management and requires a Sustainable Drainage System (SuDS) to be in place for any development.

6.38 GANT Policy GA6: Ecology and Biodiversity states that "*Development should not harm the network of local ecological features and habitats (Map 5)"* which includes the Upper Nene Valley Gravel Pits SPA and Ramsar, and the Nene Valley Nature Improvement Area (NVNIA) surrounding the Habitats Site. The policy requires additional ecological assessments for developments within the NVNIA.

6.39 GANT Policy GA17: Land North of Cranford Road, Great Addington includes the requirement of development that "A *sustainable drainage system, with suitable surface water and foul water drainage strategies devised in consultation with the relevant infrastructure bodies*" is in place.

6.40 Further the overarching North Northamptonshire Joint Core Strategy includes supporting text that states in paragraph 4.28 "… *In relation to water quality it is important that development does not go ahead unless the required sewage and water infrastructure is in place to accommodate the required sewage to ensure that there will not be locally significant effects or adverse effects on Natura 2000 sites. In North Northamptonshire, this relates to the Upper Nene Valley Gravel Pits SPA*". The NNJCS Policy 10 – Provision of Infrastructure states "*Development must be supported by the timely delivery of infrastructure, services and facilities necessary to meet the needs arising from the development*".

6.41 With the current policy wording it is considered that the overall policy framework provided by the GANP and overarching development plan documents will provide sufficient policy framework to ensure that no adverse effects on the integrity of the Upper Nene Valley Gravel Pits Habitats Sites arise alone or in combination with growth from the discharge of treated sewage effluent or from surface water runoff.

Water Quantity, Volume and Flow (including runoff)

6.42 North Northamptonshire (within which the Parish of Great Addington is located) lies within Anglian Water's Ruthamford South Water Resource Zone (WRZ). The Ruthamford South WRZ is supplied from surface water, with a direct abstraction on the River Great Ouse going to Grafham Water reservoir. There is also a small groundwater contribution from the abstraction in the Woburn Sands aquifer[39]. The Upper Nene Valley Gravel Pits is not located within the River Ouse water catchment area, but within the Nene River water catchment, so does not provide for a linking pathway. In addition, the HRA of the Anglian Water Revised Draft Water Resource Management Plan[40] does not identify impacts relating to water resources impacting the Upper Nene Valley Gravel Pits designated site. Since the WRMP is based on robust population projections and forecasts to 2050 it can be concluded that the Great Addington NP (which runs to 2041) will not result in LSE on any Habitats Sites in relation to increased water demand, either alone or 'in-combination'.

6.43 The settlement of Great Addington is located between the site allocation (Policy GA17: Land North of Cranford Road, Great Addington) and the Habitats Site.

[39] Available at rdwrmp24-wrz-summary-rts-supporting-document.pdf (anglianwater.co.uk) [accessed 09/05/2024]
[40] Available at revised-draft-wrmp24-environmental-report-sub-report-a---hra.pdf (anglianwater.co.uk) [accessed 09/05/2024]

The site allocation is located 0.8km from the Habitats Site. There are no direct water runoff linkages to the Habitats Site from the site allocation.

6.44 This impact pathway is screened out from resulting in an adverse effect on the integrity of any Habitats Sites.

In-combination Assessment

6.45 The AA of the GANP is inherently undertaken in-combination with other plans and projects. By its nature, the evidence that underpins the assessments of water quality and quantity, and recreational pressure impacts (and the mitigation that addresses any potential impacts) is in-combination. Furthermore, the contribution of the GANP to development is marginal compared to the growth allocated in overarching Local Plans, such that any negative environmental impacts arise primarily in-combination.

6.46 It has already been concluded that allocation Policy GA 17 does not constitute functionally linked land. Any windfall development that is bought forward will be delivered in accordance with both GANP policy and that of the North Northamptonshire authority within which the Parish is located which provides the following policy: Policy 20 – The Nene and Ise Valleys: "*Proposals should ensure the integrity of European designated sites such as the Upper Nene Valley Gravel Pits SPA are protected"*

6.47 It can be considered that the overall protective policy framework provided by the GANP and overarching North Northamptonshire Joint Core Strategy and associated development plan documents provide sufficient policy framework to ensure that no adverse effects on the integrity of the Upper Nene Valley Gravel Pits Habitats Sites will arise "in combination".

7. Conclusions

7.1 The GANP has a total of 22 policies. Of these policies two had the potential to cause a likely significant effect and were discussed with regards to their impacts on Habitats Sites within the Appropriate Assessment. These policies were:

- Policy GA15: Housing requirement; and
- Policy GA17: Land North of Cranford Road, Great Addington.

7.2 These policies were discussed relating to Upper Nene Valley Gravel Pits SPA / Ramsar sites and the GANPs impact to those sites regarding the following impact pathways:

- Recreational pressure;
- Loss of functionally linked land;
- Water quality (surface water runoff);
- Water quality (treatment of sewage effluent); and,
- Water quantity, volume and flow.

7.3 It is considered that the current policy wording provided by the GANP (and overarching development plan documents) will provide sufficient policy framework to ensure that no adverse effects on the integrity of the Upper Nene Valley Gravel Pits SPA/Ramsar will arise in isolation or in combination for:

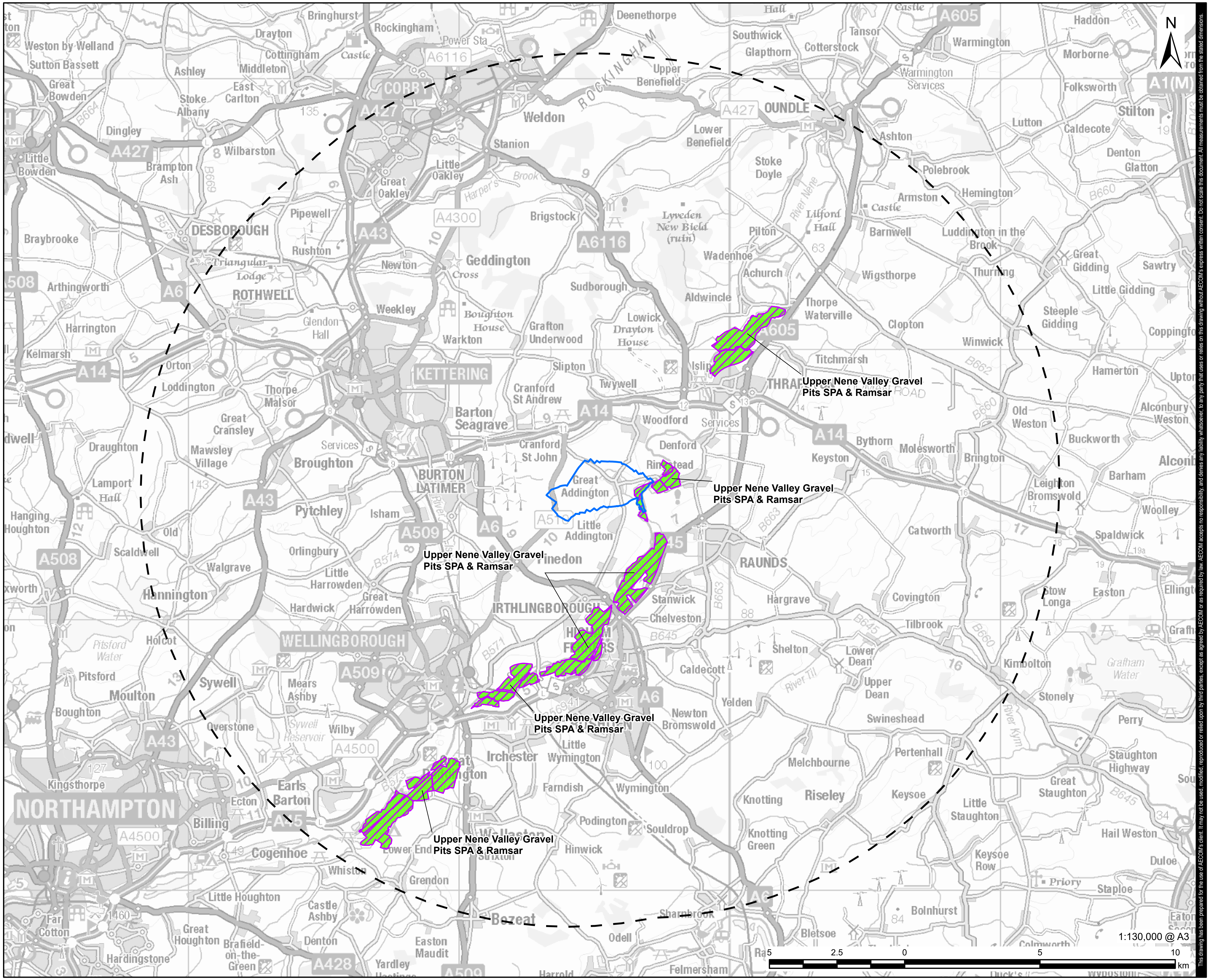
- Recreational Pressure,
- Loss of functionally linked land (alone),
- Water quality (surface water runoff), and
- Water quality (treatment of sewage effluent).

7.4 For technical reasons it is recommended that policy wording to Policy GA 17 is amended as follows (text underlined to be added):

7.5 "*The proposal must demonstrate to the satisfaction of Natural England that there is an adequate solution to mitigate the effects of development on the Upper Nene Valley Gravel Pits SPA <u>to ensure no adverse effects on the integrity of the Habitats Site result</u> prior to any grant of planning permission"*

Appendix A

Figure 2 Location of Habitats Sites in Relation to Great Addington Parish



AECOM

PROJECT

Habitats Regulation Assessment: Great Addington Neighbourhood Plan

CLIENT

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LEGEND

- Great Addington Parish Boundary
- 15km Study Area
- Special Protection Area (SPA)
- Ramsar

NOTES

ISSUE PURPOSE

FINAL

PROJECT NUMBER

60571087

FIGURE TITLE

Location of Habitats Sites in Relation to Great Addington Parish

FIGURE NUMBER

Figure 1

Revision: 0 Drawn: ER Checked: AG Approved: SG Date: 2024-04-08

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Appendix B

Background to Impact Pathways

Background to Recreational Pressure

7.6 There is growing concern over the cumulative impacts of recreation on key nature conservation sites in the UK, as most sites must fulfil Conservation Objectives while also providing recreational opportunity. Various research reports have provided compelling links between changes in housing and access levels and impacts on Habitats protected sites[41] [42].

7.7 Recreational use of a site has the potential to:

- Cause disturbance to sensitive species such as wintering wildfowl;
- Prevent appropriate management or exacerbate existing management difficulties;
- Cause damage through erosion, trampling and fragmentation; and
- Cause eutrophication as a result of dog fouling.

7.8 Different types of Habitats Sites (e.g., coastal, heathland, chalk grassland) have varying vulnerabilities and are sensitive to different types of recreational pressures. Studies across a range of species have shown that the effects from recreation can be complex.

Bird Disturbance

7.9 Disturbance effects can have negative impacts on qualifying birds in various ways, with reduced chick provisioning and increased nest predation as a result of adults being flushed from the nest and deterred from returning to it by the presence of people and dogs likely to be a particular problem. A literature review on the effects of human disturbance on breeding birds found that 36 out of 40 studies reported reduced breeding success as a consequence of disturbance[43]. The main reasons given for the reduction in breeding success were nest abandonment and increased predation of eggs or young. Studies of other species have shown that birds nest at lower densities in disturbed areas, particularly when there is weekday as well as weekend pressure[44].

7.10 Studies have shown that birds are more significantly affected by dog walkers than by people alone, with birds flushing more frequently, at greater distances and for longer (Underhill-Day, 2005). In addition, dogs, rather than people, tend

[41] Liley D, Clarke R.T., Mallord J.W., Bullock J.M. 2006a. The effect of urban development and human disturbance on the distribution and abundance of nightjars on the Thames Basin and Dorset Heaths. Natural England / Footprint Ecology.
[42] Liley D., Clarke R.T., Underhill-Day J., Tyldesley D.T. 2006b. Evidence to support the appropriate Assessment of development plans and projects in south-east Dorset. Footprint Ecology / Dorset County Council.
[43] Hockin, D., M. Oundsted, M. Gorman, D. Hill, V. Keller and M.A. Barker (1992) – Examination of the effects of disturbance on birds with reference to its importance in ecological assessments. *Journal of Environmental Management*, **36**, 253-286.
[44] Van der Zande, A.N., J.C. Berkhuizen, H.C. van Letesteijn, W.J. ter Keurs and A.J. Poppelaars (1984) – Impact of outdoor recreation on the density of a number of breeding bird species in woods adjacent to urban residential areas. *Biological Conservation,* **30**, 1-39.

to be the cause of many management difficulties, notably by worrying grazing animals, and can cause eutrophication near paths. Nutrient-poor habitats are particularly sensitive to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces[45].

7.11 Underhill-Day (2005) summarises the results of visitor studies that have collected data on the use of semi-natural habitat by dogs. In surveys where 100 observations or more were reported, the mean percentage of visitors who were accompanied by dogs was 54.0%.

7.12 A study of bird disturbance in North Kent was undertaken in 2010/2011 by Footprint Ecology[46]. It focused on recreational pressure on wintering waterfowl on intertidal habitats along the North Kent shoreline, stretching between Gravesend and Whitstable and encompassing the following three SPAs: the Thames Estuary and Marshes SPA, Medway Estuary and Marshes SPA and Swale SPA. From 1,400 events (records of visitors in the bird survey areas) occurring within 200m of the birds, 3,248 species-specific observations were noted of which:

- 74% resulted in no response.
- 13% resulted in a major flight.
- 5% resulted in a short flight.
- 5% resulted in a short walk.
- 3% resulted in an alert.

7.13 Dog walking accounted for 55% of all major flight observations with a further 15% attributed to walkers without dogs. After controlling for distance, major flights were more likely to occur when activities took place on the intertidal zone (compared to events on the water or events on the shore), when dogs were present and a higher number of dogs were present in visitor groups.

7.14 There were significant differences between species with curlew *Numenius arquata* the species with the highest probability of major flight and teal and black-tailed godwit *Limosa limosa* the lowest. Tide state was also significant with major flights more likely at high tide, after controlling for distance. There was a significant interaction between distance and tide, indicating that the way in which birds responded varied according to tide.

7.15 However, bird disturbance studies need to be treated with care. For instance, the magnitude of disturbance is not necessarily correlated with the impact of disturbance, i.e., the most easily disturbed species are not necessarily those that will suffer the greatest impacts. For example, it has been shown that, in some cases, the most easily disturbed birds simply move to other feeding sites, whilst others may remain (possibly due to an absence of alternative sites) and thus suffer greater population-level impacts[47]. A recent literature review undertaken

[45] Shaw, P.J.A., K. Lankey and S.A. Hollingham (1995) – Impacts of trampling and dog fouling on vegetation and soil conditions on Headley Heath. *The London Naturalist*, **74**, 77-82.
[46] D. Liley & H. Fearnley (Footprint Ecology), 2011. Bird Disturbance Study North Kent.
[47] Gill et al. (2001) - Why behavioural responses may not reflect the population consequences of human disturbance. *Biological Conservation,* **97**, 265-268

for the RSPB[48] also urges caution when extrapolating the results of disturbance studies because responses differ between species and may be impacted by local environmental conditions. These facts have to be taken into account when attempting to predict the impacts of future recreational pressure on international sites.

7.16 It should be emphasised that recreational use is not necessarily a problem. Many Habitats Sites are also National Nature Reserves or nature reserves managed by Wildlife Trusts and the RSPB. At these sites, access is encouraged and resources are available to ensure that recreational use is managed appropriately.

7.17 Where increased recreational use is predicted to increase pressure and cause adverse impacts on a site, avoidance and mitigation should be considered. Avoidance of recreational impacts at Habitats Sites involves locating new development away from such sites; Local Plans and other strategic plans, including NPs, provide the mechanism for this. Where avoidance is not possible, mitigation will usually involve a mix of access management, habitat management and provision of alternative recreational space.

Background to Loss of Functionally Linked Habitat

7.18 While most Habitats Sites have been geographically defined to encompass the key features that are necessary for coherence of their structure and function, and the support of their qualifying features, this is not always the case. A diverse array of qualifying species including birds, bats and amphibians are not confined to the boundary of designated sites.

7.19 For example, the highly mobile nature of both wildfowl and heathland birds implies that areas of habitat of crucial importance to the maintenance of their populations are outside the physical limits of Habitats Sites. Despite not being part of the formal designation, this habitat is still integral to the maintenance of the structure and function of bird populations in the designated site and, therefore, land use plans that may affect such areas should be subject to further assessment. This has been underlined by a recent European Court of Justice ruling (C-461/17, known as the Holohan ruling[49]) which in paragraphs 37 to 40 confirms the need for an AA to consider the implications of a plan or project on habitats and species outside the Habitats Site boundary, provided that those implications are liable to affect the Conservation Objectives of the site.

7.20 With regard to birds, functionally linked habitats typically provide habitat for foraging or other ecological functions essential for the maintenance of the designated population e.g., high-tide roosts for coastal waders and waterfowl. Functionally linked habitats may extend up to the maximum foraging distances established for relevant bird species. However, the number of birds foraging will tend to decrease further away from the protected site and thus the importance of the land to the maintenance of the designated population will decrease.

7.21 Natural England's Impact Risk Zones (IRZs)[50] identify the core foraging distances that wintering birds will travel from their SPAs / Ramsars and the

[48] Woodfield & Langston (2004) - Literature review on the impact on bird population of disturbance due to human access on foot. *RSPB research report* No. 9.
[49] The Holohan ruling also requires all the interest features of the European sites discussed to be catalogued (i.e., listed) in the HRA. That is the purpose of Appendix A.
[50] Knight M. (2019). Impact Risk Zones Guidance Summary – Sites of Special Scientific Interest Notified for Birds. Version 1.1. 8pp.

guidance that underlies those zones will be utilised in this HRA. The relevant IRZs are shown in Table 2:

Table 4. Natural England's Impact Risk Zones (IRZs) for different groups of designated bird species.

Assemblage	Impact Risk Zone (IRZ, based on core foraging distance)
Wintering birds (except wintering waders and grazing wildfowl; wigeon and geese)	Up to 500m
Dabbling ducks such as teal, mallard and gadwall	Home ranges could extend beyond site boundaries at coastal sites, but less likely to do so at inland water bodies.
Wintering waders (except golden plover and lapwing), brent goose & wigeon	Maximum foraging distance is 2km
Wintering lapwing and golden plover	Maximum foraging distance is 15-20km. Golden plover can forage up to 15km from a roost site within a protected site. Lapwing can also forage similar distances. Both species use lowland farmland in winter and it is difficult to distinguish between designated populations and those present within the wider environment. Developments affecting functionally linked land more than 10km from the site are unlikely to impact significantly on designated populations.
Wintering white-fronted goose, greylag goose, Bewick's swan, whooper swan, pink-footed goose & wintering bean goose	Maximum foraging distance is 10km although studies have shown that pink-footed geese will fly 20km from their roosting site to feed[51]. A bespoke functional land IRZ has replaced the individual Birds 6/7 IRZs for sites supporting the following goose and swan species: pink-footed geese, barnacle goose, Bewick's swan, white-fronted goose and whooper swan. The IRZ is based on GIS distribution records of feeding pink-footed geese from a study undertaken for Natural England by the Wildfowl & Wetlands Trust52 and the results of work undertaken by the British Trust for Ornithology to identify functionally connected habitat used by barnacle goose, Bewick's swan, white-

[51] https://monitoring.wwt.org.uk/wp-content/uploads/2018/12/Mapping-feeding-Pinkfeet-in-England-Final-report-vFinal.Jan15-2.pdf [accessed 14/04/2021]
[52] Ibid

Assemblage	Impact Risk Zone (IRZ, based on core foraging distance)
	fronted goose and whooper swan based on WeBS site and BirdTrack data and focuses on only the areas of land that we know are being used as functional habitat by designated populations

7.22 The guidance document further identifies that for SSSIs designated for wintering waterfowl and waders (other than golden plover and lapwing) a maximum of 2km is appropriate for the identification of potential functionally linked habitat, with the exception of wind energy (3km) and airports (10km).

7.23 There is now an abundance of authoritative examples of HRA cases on plans affecting bird populations, where Natural England recognised the potential importance of functionally linked land[53].

7.24 Generally, the identification of an area as functionally linked habitat is now a relatively straightforward process and it is reasonable to assume that a site <2 ha in size is unlikely to support a large enough population of birds (taking sightlines etc. into account) to constitute 1% of an SPA population. However, the importance of non-designated land parcels may not be immediately apparent and could require the analysis of existing data sources to be firmly established. In some instances, data may not be available at all, requiring further survey work.

Background to Water Quality

7.25 Increased amounts of housing or business development can lead to reduced water quality of rivers and estuarine environments. Sewage and industrial effluent discharges can contribute to increased nutrients and toxic contaminants in Habitats Sites leading to unfavourable conditions.

7.26 The quality of the water that feeds Habitats Sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:

- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour. Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available nitrogen.

- Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine

[53] Chapman C & Tyldesley D. 2016. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects – A review of authoritative decisions. Natural England Commissioned Reports 207: 73pp.

system, possibly having negative effects on the reproduction and development of aquatic life.

- For sewage treatment works close to capacity, further development may increase the risk of effluent escape into aquatic environments. In many urban areas, sewage treatment and surface water drainage systems are combined, and therefore a predicted increase in flood and storm events could increase pollution risk.

Background to Water Quantity, Volume and Flow (including runoff)

7.27 The unique nature of wetlands combines shallow water, high levels of nutrients and high primary productivity. These conditions are ideal for the growth of organisms at the basal level of food webs, which feed many species of birds, mammals, fish and amphibians. Overwintering and migrating wetland bird species are particularly reliant on these food sources, as they need to build up enough nutritional reserves to sustain their long migration routes.

7.28 Maintaining a steady water supply is of critical importance for many hydrologically dependent SPAs, SACs and Ramsars. For example, in many wetlands winter flooding is essential for sustaining a variety of foraging habitats for SPA / Ramsar wader and waterbird species. However, different species vary in their requirements for specific water levels. Splash and / or shallow flooding is required to provide suitable feeding areas and roosting sites for ducks and waders. In contrast, deeper flooding is essential to provide foraging habitats for Bewick's swans and other ducks.

7.29 Wetland habitats (and thus the fauna they support) rely on hydrological connections with other surface waters, such as rivers, streams and lakes. A constant supply of water is fundamental to maintaining the ecological integrity of sites. However, while the natural fluctuation of water levels within narrow limits is desirable, excess or too little water supply might cause the water level to be outside of the required range of qualifying birds, invertebrate or plant species. This might lead to the loss of the structure and functioning of wetland habitats. There are two mechanisms through which urban development might negatively affect the water level in Habitats Sites:

- The supply of new housing with potable water will require increased abstraction of water from surface water and groundwater bodies. Depending on the level of water stress in the geographic region, this may reduce the water levels in Habitats Sites sharing the same catchment.

- The proliferation of impermeable surfaces in urban areas increases the volume and speed of surface water runoff. As traditional drainage systems often cannot cope with the volume of stormwater, sewer overflows are designed to discharge excess water directly into watercourses. Often this pluvial flooding results in downstream inundation of watercourses and the potential flooding of wetland habitats.

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