

Greater Nottingham Strategic Plan Publication Draft Plan

Habitats Regulations Assessment

July 2024



LEPUS CONSULTING
LANDSCAPE, ECOLOGY, PLANNING & URBAN SUSTAINABILITY

Greater Nottingham Strategic Plan Publication Draft Plan

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Acronyms & abbreviations

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ALS	Abstraction Licence Strategy
APIS	Air Pollution Information System
BSIP	Bus Service Improvement Plan
CAMS	Catchment Abstraction Management Strategy
CIEEM	Chartered Institute of Ecology and Environmental Management
CJEU	Court of Justice of the European Union
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DO	Dissolved Oxygen
DTA	David Tyldesley and Associates
EA	Environment Agency
EPs	Environmental Permits
ERF	Energy Recovery Facility
GI	Green Infrastructure
GNSP	Greater Nottingham Strategic Plan
HDV	Heavy Duty Vehicle
HEaP	Heathland Extent and Potential
HRA	Habitats Regulations Assessment
IBA	Important Bird Area
IRZ	Impact Risk Zone
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
LPA	Local Planning Authority
LSE	Likely Significant Effect
NBGRC	Nottinghamshire Biological and Geological Records Centre
NNR	National Nature Reserve
No _x	Nitrogen Oxides
P	Phosphorus
ppSPA	Possible Potential Special Protected Area
PRoW	Public Right of Way
RBMP	River Basin Management Plan
RIA	Recreational Impact Assessment
RSPB	Royal Society for the Protection of Birds

SAC	Special Area of Conservation
SIP	Site Improvement Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
STW	Severn Trent Water
SuDS	Sustainable Drainage Systems
SWMC	Surface Water Management Catchment
TAG	Transport Analysis Guidance
WCS	Water Cycle Study
WDWMP	Water Drainage and Wastewater Management Plan
WFD	Water Framework Directive
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone
WwTWs	Wastewater Treatment Works
ZOI	Zone of Influence

Executive Summary

Introduction

- E1. Lepus Consulting has been appointed, on behalf of Broxtowe Borough Council, Gedling Borough Council, Nottingham City Council and Rushcliffe Borough Council, hereafter referred to as 'the Councils', to undertake a Habitats Regulations Assessment (HRA) in compliance with the Habitats Regulations (as amended)¹ of the Publication Draft version of the Greater Nottingham Strategic Plan (GNSP) at Regulation 19.
- E2. The GNSP will set out the quantity of housing and employment land to be delivered in the Plan period to 2041, together with a proposed strategy for distributing development in Greater Nottingham including the allocation of a number of strategic sites.
- E3. This report provides the outputs of the HRA process which has been undertaken alongside preparation of the GNSP. The report is structured as set out below.
- Executive Summary
 - Chapter 1: Introduction
 - Chapter 2: Methodology
 - Chapter 3: Scoping of threats and pressures at European sites
 - Chapter 4: Sherwood Forest possible potential Special Protection Area
 - Chapter 5: Screening of the GNSP
 - Chapter 6: Appropriate Assessment – Humber Estuary SAC, SPA and Ramsar
 - Chapter 7: Appropriate Assessment – Sherwood Forest ppSPA
 - Chapter 8: Conclusions and Next Steps

Habitats Regulations Assessment

- E4. When preparing development plan documents, councils are required by law to carry out an HRA to test if a plan could significantly harm the designated features of a European site. Depending on the outcomes of the assessment, the Competent Authority (in this instance the Councils) can decide whether to adopt the plan².
- E5. In the GNSP HRA, European sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites. Whilst not a formal European site designation, to ensure a risk-based approach has been undertaken, impacts from the GNSP upon the Sherwood Forest ppSPA have also been considered separately in this HRA report.

¹ The Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents> [Date Accessed: 14/12/22] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111176573> [Date Accessed: 12/07/24].

² Department for Levelling up, Housing & Communities and Ministry of Housing Communities & Local Government (2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment. Available at: <https://www.gov.uk/guidance/appropriate-assessment> [Date accessed: 12/07/24].

Screening Outcomes (HRA Stage 1)

- E6. The GNSP is not directly connected with or necessary to the management of any European site. Consideration was therefore given to potential links or causal connections between the effects of the GNSP and European sites within the study area to identify Likely Significant Effects (LSEs). This exercise was undertaken through the collation of information for each European site and application of a 'source-pathway-receptor' model.
- E7. Taking no account of mitigation measures, the screening stage concluded that the GNSP had the potential to have LSEs at the following European sites:
- Humber Estuary SAC – water quality
 - Humber Estuary Ramsar – water quality
 - Humber Estuary SPA – water quality
- E8. In addition, to ensure a 'risk-based' approach was adopted, consideration was given to the Sherwood Forest ppSPA, with air pollution, increased recreational pressures and urbanisation LSEs being identified.
- E9. This therefore triggered the requirement to undertake the next stage of the HRA process, the Appropriate Assessment (AA).

Appropriate Assessment Outcomes (HRA Stage 2)

Humber Estuary SAC, SPA and Ramsar Water Quality Appropriate Assessment

- E10. The HRA provided an assessment of the effects of a change in water quality due to GNSP development on the site integrity of the Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar designations. This assessment included a consideration of the impacts of a change in water quality on functionally linked watercourses used by migratory species of fish (river lamprey and sea lamprey) which are part of the qualifying features of the Humber Estuary SAC and Humber Estuary Ramsar designations.
- E11. The AA drew on the high-level regulatory water quality protective framework and GNSP policy requirements which require new development to protect water quality. Based on these factors, the AA concluded that there would be no adverse impacts on site integrity at the Humber Estuary SPA, Humber Estuary SAC and Humber Estuary Ramsar, or qualifying species using functionally linked watercourses, due to a change in water quality as a result of the GNSP.

Sherwood Forest ppSPA Air Quality Appropriate Assessment

- E12. The AA provided an assessment of the ecological impacts of air pollution on nightjar and woodlark populations associated with the Sherwood Forest ppSPA, taking a 'risk-based' approach as set out by Natural England. The assessment focused on habitat within 200m of road links where traffic modelling indicated an exceedance of a 1,000 AADT screening threshold.
- E13. The AA analysed baseline air quality levels across the ppSPA and reviewed background air pollution contributions from different sectors in the context of air quality trends. This information was assessed taking into consideration the extent and distribution of key

habitat requirements for nightjar and woodlark and the management regime of habitat within 200m of the affected road network. Taking these factors into consideration, alongside GNSP and national policy which promotes active forms of transport and encourages uptake of electric vehicles, the AA concluded no adverse impacts on the site integrity of the ppSPA due to a change in air quality from the GNSP either alone or in-combination.

Sherwood Forest ppSPA Recreation Pressure Appropriate Assessment

- E14. The AA provided an assessment of the ecological impacts of increased recreational pressure upon nightjar and woodlark populations associated with the Sherwood Forest ppSPA.
- E15. This assessment took into consideration levels of accessibility and the facilities at each component of the ppSPA, alongside recreational impact and visitor survey data collated for a number of these components. This data was evaluated in the context of the location of allocations in relation to the ppSPA. The assessment also provided an analysis of GNSP policy wording which requires the protection, enhancement and creation of new greenspaces within GNSP strategic allocations.
- E16. Taking into consideration access to and facilities at each component of the ppSPA, policy wording secured through the GNSP and the scale and location of development, the AA concluded that there will be no adverse impact on site integrity from increased recreational pressure alone or in-combination on the Sherwood Forest ppSPA.

Sherwood Forest ppSPA Urbanisation Effects Appropriate Assessment

- E17. The AA provided an assessment of urbanisation effects in the form of cat predation of ground nesting birds, lighting (illumination), noise, and visual disturbance upon the ppSPA. Woodlark and nightjar, as ground nesting birds, are particularly vulnerable to predation from domestic pets (such as cats), and as they feed predominantly at dusk and dawn³ they are vulnerable to light disturbance from road traffic and development and sensitive to sources of noise and vibration. The AA took into consideration the proximity of development to components of the ppSPA, applying a 400m buffer zone. An evaluation of impacts was made in the context of best practice mitigation techniques such as the incorporation of buffers and bunds to provide cat deterrents and best practice techniques to minimise lighting and noise. The AA acknowledged the hierarchical nature of plan making in terms of specifying details once information on site layout is better understood at individual development sites.
- E18. Taking into consideration the location of development in relation to the ppSPA, availability of mitigation techniques in relation to urbanisation effects and the protective nature of GNSP policy wording, the AA concluded that there will be no adverse impact on the integrity of the ppSPA from urbanisation impacts either alone or in-combination.

³ University Of East Anglia. Woodlark and Nightjar Recreational Disturbance and Nest Predator Study 2008 and 2009 Final report to Breckland District Council. Available at: https://www.breckland.gov.uk/media/1968/Birds-Woodlark-and-Nightjar-Recreation-Distribution-and-Nest-Predator-Study/pdf/UEA_Report_to_Breckland_FINAL_09-2010.pdf [Date accessed: 19/02/24].

Next steps

- E19. The purpose of this report is to inform the HRA of the GNSP Publication Draft Plan using best available information. The Councils, as the Competent Authorities, are responsible for preparing the Integrity Test, which can be undertaken in light of the conclusions set out in this report.
- E20. This report will be submitted to Natural England, the statutory nature conservation body, for formal consultation. The Councils must 'have regard' to their representations under the provisions of Habitats Regulations prior to making a final decision as to whether they will 'adopt' the conclusions set out within this report as their own.

1 Introduction

1.1 Purpose of this report

1.1.1 Lepus Consulting has prepared this report to inform the Habitats Regulations Assessment (HRA) of the Publication Draft version of the Greater Nottingham Strategic Plan (GNSP) at Regulation 19, on behalf of Broxtowe Borough Council, Gedling Borough Council, Nottingham City Council and Rushcliffe Borough Council, hereafter referred to the Councils.

1.1.2 The four local planning authorities (LPAs) within Greater Nottingham are together currently preparing the GNSP. **Figure 1.1** shows the administrative boundaries of these authorities, which comprise the GNSP area.

1.2 Background

1.2.1 The GNSP will set out the quantity of housing and employment land to be delivered in the Plan period to 2041, together with a proposed strategy for distributing development in Greater Nottingham including the allocation of a number of strategic sites. Strategic policies will also be set out in the GNSP, covering matters such as the scale and distribution of development, the hierarchy of retail/town centres, the approach to transport, design, infrastructure (including green infrastructure (GI)) and developer contributions. The GNSP will comprise Part 1 of each authority's Local Plan, replacing their Aligned Core Strategies.

1.2.2 Following adoption of the GNSP, each individual authority will commence reviews of their subsequent plans. Reviewed Part 2 Local Plans will identify non-strategic sites and detailed policies in order to deliver the strategic policies in the GNSP.

1.2.3 The GNSP has been subject to consultation at Regulation 18 (as listed below) and consultation is now sought on the Regulation 19 Publication Draft Plan.

- Greater Nottingham Strategic Plan: Growth Options Consultation (July 2020⁴ and February 2021⁵);
- Greater Nottingham Strategic Plan: Preferred Approach Consultation (January to February 2023)⁶; and
- Greater Nottingham Strategic Plan: Distribution and Logistics Preferred Approach Consultation (September to November 2023)⁷.

⁴ Greater Nottingham Planning Partnership (2020) Greater Nottingham Strategic Plan Growth Options Consultation. Available at: <https://www.gnplan.org.uk/media/2asfxrdu/greater-nottingham-strategic-plan-growth-options-web-version.pdf> [Date accessed: 08/01/24].

⁵ Greater Nottingham Planning Partnership (2021) Greater Nottingham Strategic Plan Growth Options Consultation Extension. Available at: <https://gnplan.inconsult.uk/consult/ti/gnspgoe/viewCompoundDoc?docid=12048788> [Date accessed: 08/01/24].

⁶ Greater Nottingham Planning Partnership (2023) Greater Nottingham Strategic Plan Preferred Approach Consultation. Available at: <https://www.gnplan.org.uk/media/o2knkbif/preferred-approach-document.pdf> [Date accessed: 08/01/24].

⁷ Greater Nottingham Planning Partnership (2023) Greater Nottingham Strategic Plan Strategic Distribution and Logistics Preferred Approach Consultation. Available at: <https://www.gnplan.org.uk/media/ujvflvnl/indesign-preferred-approach-logistics-consultation-approved-v2.pdf> [Date accessed: 08/01/24].

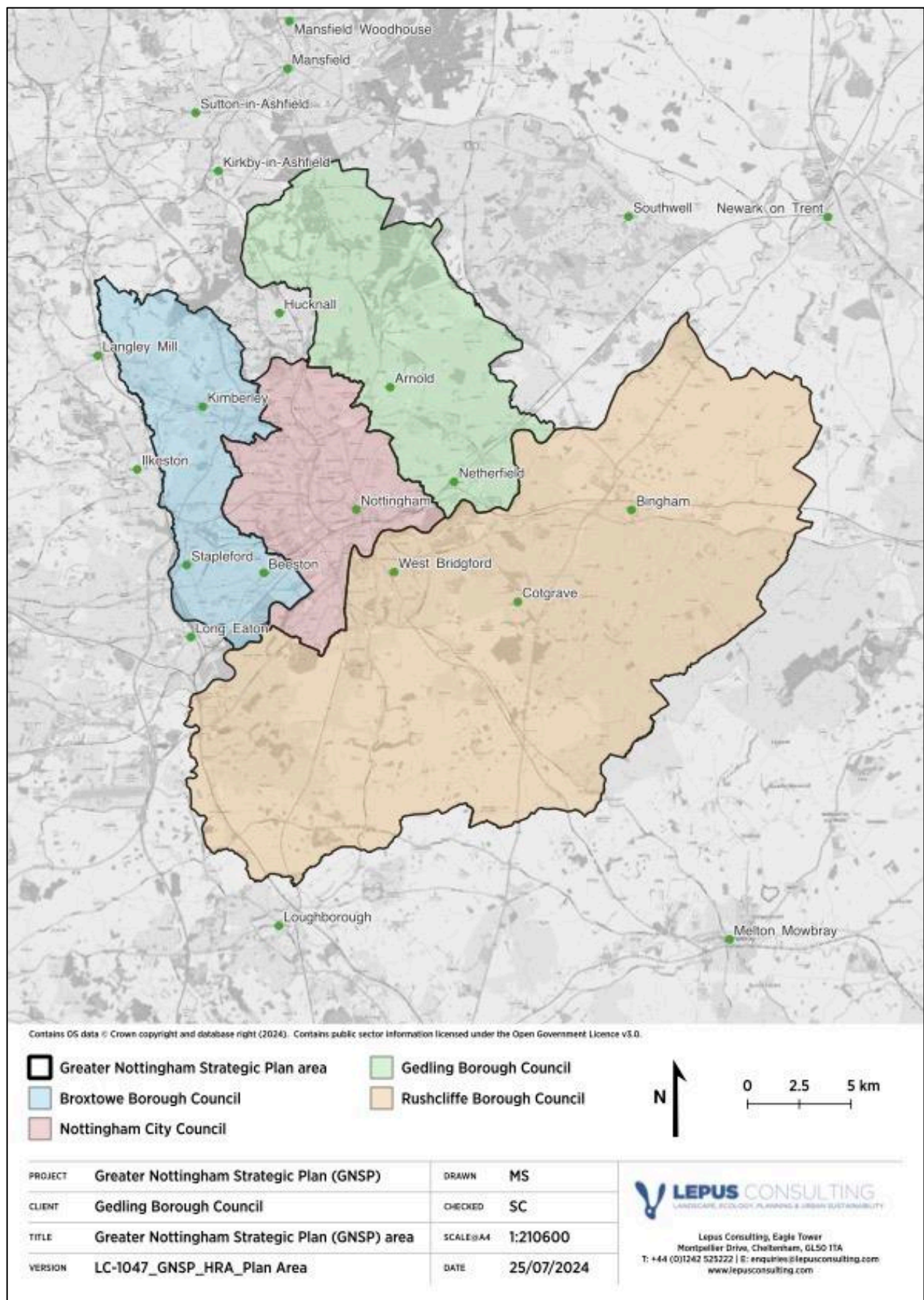


Figure 1.1: Greater Nottingham Strategic Plan (GNSP) area

1.3 Habitats Regulations Assessment

- 1.3.1 The application of HRA to land-use plans is a requirement of the Conservation of Habitats and Species Regulations 2017 (as amended)⁸. HRA applies to plans and projects, including all Local Development Documents in England and Wales.
- 1.3.2 Where a plan is likely to have a significant effect on a European site (either alone or in-combination) and is not directly connected with or necessary to the management of the European site, Regulation 105 of the Habitats Regulations notes that the plan making authority for that plan must, before the plan is given effect, make an Appropriate Assessment (AA) of the implications for the site in view of that site's conservation objectives. This process is referred to as an HRA.
- 1.3.3 The Habitats Regulations⁹ provide a definition of a European site at Regulation 8. These sites include Special Areas of Conservation (SAC), Sites of Community Importance, Special Protection Areas (SPA) and sites proposed to the European Commission in accordance with Article 4(1) of the Habitats Directive. In addition, policy in England and Wales notes that the following sites should also be given the same level of protection as a European site.
- A potential SPA (pSPA)
 - A possible / proposed SAC (pSAC)
 - Listed and proposed Ramsar Sites (wetland of international importance)
 - In England, sites identified or required as compensation measures for adverse effects on statutory European sites, pSPA, pSAC and listed or proposed Ramsar sites.

1.4 Previous HRA work

- 1.4.1 An HRA review was undertaken at Regulation 18 by the Greater Nottingham Councils to support the plan making process¹⁰. This HRA review drew on work which was undertaken in connection with each Council's adopted Aligned Core Strategy, and provided a comparison of the scale of development identified in the preferred approach at Regulation 18 against that previously assessed as part of the HRA work for the Aligned Core Strategies. The HRA review recommended that a new HRA screening exercise be commissioned at Regulation 19 to consider the in-combination effects of sites within and adjoining Hucknall, including those in Ashfield District's revised Local Plan, on the Sherwood Forest possible potential Special Protection Area (ppSPA).

⁸ The Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents> [Date accessed: 08/09/23] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111176573> [Date accessed: 10/01/24].

⁹ Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents> [Date accessed 07/09/23] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111176573> [Date accessed: 10/01/24].

¹⁰ Greater Nottingham Planning Partnership (2022) Preferred Approach: Habitats Regulations Assessment Review Paper. Available at: <https://www.gnplan.org.uk/media/pj1pcpgq/habitat-regulations-assessment-review-paper.pdf> [Date accessed: 04/01/24].

1.5 HRA of the Draft Publication GNSP

- 1.5.1 HRA is an iterative process, designed to run alongside and inform the plan making process to ensure adverse impacts on European sites are avoided in the first instance or, where this is not possible, effective mitigation which is designed to ensure no adverse impact on site integrity.
- 1.5.2 The purpose of this HRA is to inform the development of the GNSP at the Regulation 19 stage of the plan making process. This document provides a screening of all components of the Regulation 19 GNSP (including all policies and allocations) and an AA of Likely Significant Effects (LSEs) against the conservation objectives of each European site, taking into consideration mitigation measures.
- 1.5.3 This HRA report has been prepared in accordance with the Habitats Regulations and has been informed by the following guidance:
- Planning Practice Guidance: Appropriate Assessment¹¹
 - The Habitat Regulations Assessment Handbook - David Tyldesley and Associates (referred to hereafter as the DTA Handbook), 2013 (in particular Part F: 'Practical Guidance for the Assessment of Plans under the Regulations')¹²

¹¹ Department for Levelling up, Housing & Communities and Ministry of Housing Communities & Local Government (2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment. Available at: <https://www.gov.uk/guidance/appropriate-assessment> [Date accessed: 30/01/24].

¹² Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (January) (2021) edition UK: DTA Publications Limited. Available at: <http://www.dtapublications.co.uk/> [Date accessed: 10/01/24].

2 Methodology

2.1 Overview

- 2.1.1 HRA is a rigorous precautionary process centred around the conservation objectives of a European site's qualifying interests. It is intended to ensure that European sites are protected from impacts that could adversely affect their integrity. A step-by-step guide to the methodology followed for the HRA, as outlined in the DTA Handbook, is illustrated in **Figure 2.1**. This HRA report provides outputs from Stage 1 and Stage 2 of the HRA process.

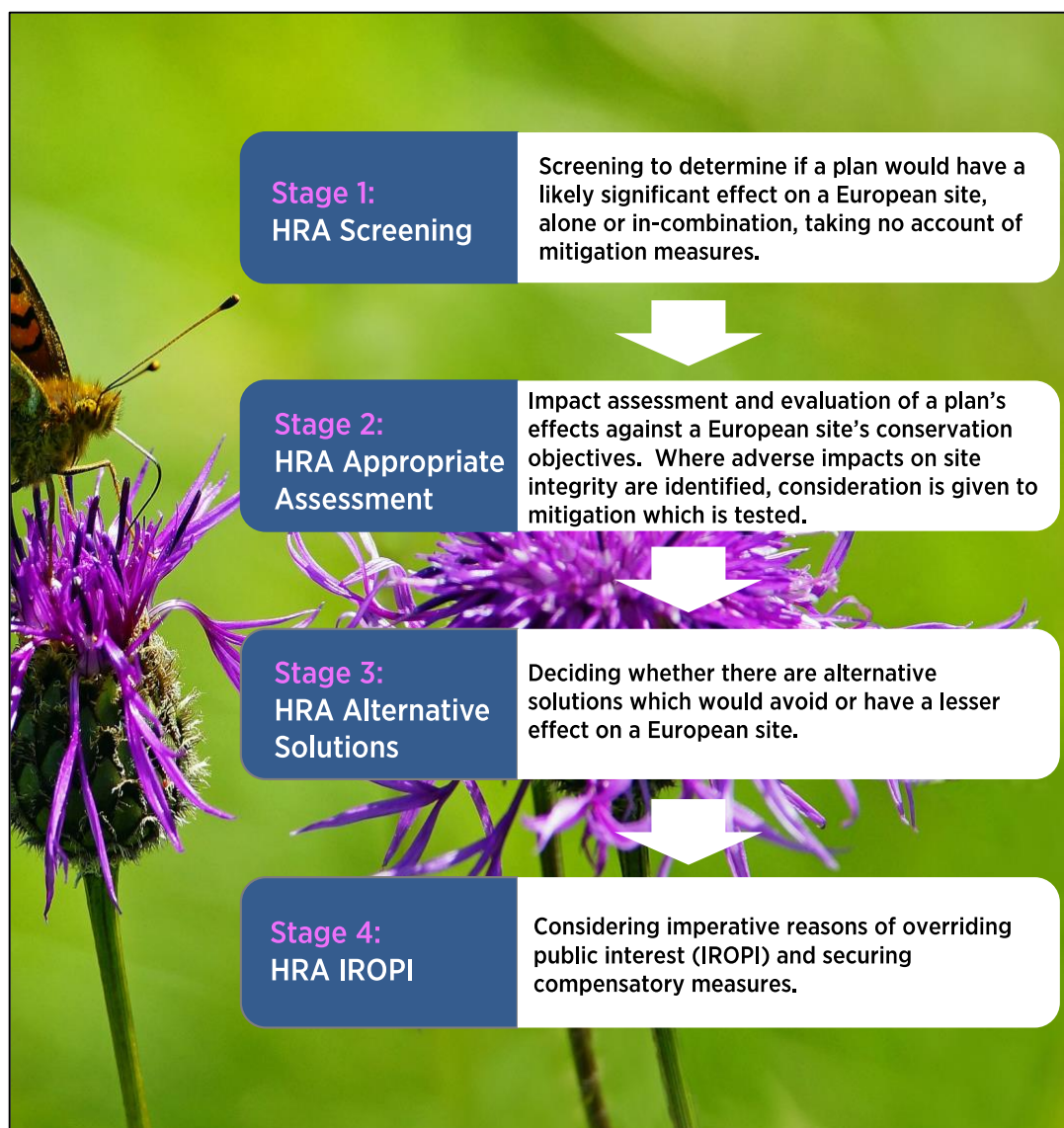


Figure 2.1: Stages in the Habitats Regulations Assessment process¹³

2.1.2 The first stage in the HRA process comprises the screening stage (see **Figure 2.1**). The purpose of the screening process is to firstly determine whether a plan is either (1) exempt (because it is directly connected with or necessary to the management of a European site), (2) whether it can be excluded (because it is not a plan), or (3) eliminated (because there would be no conceivable effects), from the HRA process. If none of these conditions apply, it is next necessary to identify whether there are any aspects of a plan which may lead to an LSE at a European site, either alone or in-combination with other plans or projects.

2.1.3 Where components of the GNSP will not result in LSEs on a European site (alone or in-combination) these are screened out and are not considered in further detail in the process. Where LSEs are identified, the HRA process moves to an AA of LSEs (Stage 2 - **Figure 2.1**).

¹³ Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (January) (2021) edition UK: DTA Publications Limited. Available at: <http://www.dtapublications.co.uk/> [Date accessed: 10/01/24].

- 2.1.4 Evaluation codes have been used to summarise whether or not each component of the GNSP is likely to have an LSE alone or in-combination. These codes are subsequently used to inform the formal screening decision (Column 2, **Table 2.1**). The results are presented in **Chapter 5** of this report.

Table 2.1: Screening evaluation and reasoning categories from Part F of the DTA Handbook¹⁴

Screening evaluation and reasoning categories from Chapter F of the Habitats Regulations Assessment Handbook (DTA Publications, 2013):	Screen in / Screen out
A. General statements of policy / general aspirations	Screen out
B. Policies listing general criteria for testing the acceptability / sustainability of proposals.	Screen out
C. Proposal referred to but not proposed by the Plan.	Screen out
D. General plan-wide environmental protection / designated site safeguarding / threshold policies.	Screen out
E. Policies or proposals that steer change in such a way as to protect European sites from adverse effects.	Screen out
F. Policies or proposals that cannot lead to development or other change.	Screen out
G. Policies or proposals that could not have any conceivable adverse effect on a site.	Screen out
H. Policies or proposals the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in-combination with other aspects of this or other plans or projects).	Screen out
I. Policies or proposals with a Likely Significant Effect on a site alone.	Screen in
J. Policies or proposals unlikely to have a significant effect alone.	Screen out
K. Policies or proposals unlikely to have a significant effect either alone or in-combination.	Screen out
L. Policies or proposals which might be likely to have a significant effect in-combination.	Screen in
M. Bespoke area, site or case-specific policies or proposals intended to avoid or reduce harmful effects on a European site.	Screen in

¹⁴Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (December) (2019) edition UK: DTA Publications Limited. Available at: <http://www.dtapublications.co.uk/> [Date accessed: 10/01/24].

- 2.1.5 Where components of the GNSP have no LSE alone, the screening assessment considers potential in-combination LSEs. Plans and projects which are considered to be of most relevance to the in-combination assessment of the GNSP include those that have similar impact pathways (see **Appendix A**). These include those plans and projects that have the potential to increase development in the HRA study area. In addition, other plans and projects with the potential to increase traffic across the study area which may act in-combination with the GNSP, such as transport, waste and mineral plans and projects, have also been taken into consideration. Plans which allocate water resources or are likely to influence water quality in the study area have been considered. Finally, neighbouring authority local plans which may increase development related public access and disturbance pressures at European sites have also been considered. The in-combination assessment is compliant with the Wealden Judgement¹⁵.
- 2.1.6 The European Court Judgement on the interpretation of the Habitats Directive in the case of People Over Wind and Sweetman vs Coillte Teoranta (Case C-323/17¹⁶) determined that mitigation measures are only permitted to be considered as part of an AA. The HRA screening process has therefore taken no account of incorporated mitigation or avoidance measures that are intended to avoid or reduce harmful effects on a European site when assessing the LSEs of the GNSP on European sites. These are measures which, if removed (i.e. should they no longer be required for the benefit of a European site), would still allow the lawful and practical implementation of a plan.

2.2 Stage 2: Appropriate Assessment and Integrity Test

- 2.2.1 Stage 2 of the HRA process comprises the AA and Integrity Test. The purpose of the AA is to undertake an assessment of the implications of a plan for a European site in light of its conservation objectives¹⁷.
- 2.2.2 As part of this process, decision makers should take account of the potential consequences of no action and the uncertainties inherent in scientific evaluation, and they should consult interested parties on the possible ways of managing the risk, for instance, through the adoption of mitigation measures. Mitigation measures should aim to avoid, minimise, or reduce significant effects on European sites. Mitigation measures may take the form of policies within the GNSP, or mitigation proposed through other plans or regulatory mechanisms. All mitigation measures must be deliverable and able to mitigate the adverse effects for which they are targeted.
- 2.2.3 The AA aims to present information in respect of all aspects of the GNSP and ways in which it could, either alone or in-combination with other plans and projects, impact a European site.

¹⁵ Wealden District Council & Lewes District Council before Mr Justice Jay. Available at: <http://www.bailii.org/ew/cases/EWHC/Admin/2017/351.html> [Date accessed: 10/01/24].

¹⁶ InfoCuria (2018) Case C-323/17. Available at: <http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN> [Date accessed: 10/01/24].

¹⁷ Department for Levelling up, Housing & Communities and Ministry of Housing Communities & Local Government (2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment. Available at: <https://www.gov.uk/guidance/appropriate-assessment> [Date accessed: 30/01/24].

- 2.2.4 The plan making bodies (as the Competent Authorities) must then ascertain, based on the findings of the AA, whether the GNSP will adversely affect the integrity of a European site either alone or in-combination with other plans and projects. This is referred to as the Integrity Test.

2.3 Dealing with uncertainty

- 2.3.1 Uncertainty is an inherent characteristic of HRA, and decisions can be made using currently available and relevant information. This concept is reinforced on the 7th September 2004 'Waddenzee' ruling¹⁸:

- 2.3.2 *"However, the necessary certainty cannot be construed as meaning absolute certainty since that is almost impossible to attain. Instead, it is clear from the second sentence of Article 6(3) of the Habitats Directive that the competent authorities must take a decision having assessed all the relevant information which is set out in particular in the Appropriate Assessment. The conclusion of this assessment is, of necessity, subjective in nature. Therefore, the competent authorities can, from their point of view, be certain that there will be no adverse effects even though, from an objective point of view, there is no absolute certainty."*

2.4 The Precautionary Principle

- 2.4.1 The HRA process is characterised by the Precautionary Principle which is embedded in the Integrity Test. The Precautionary Principle aims to ensure a higher level of environmental protection through preventative decision-taking in the case of risk¹⁹.

¹⁸EC Case C-127/02 Reference for a Preliminary Ruling 'Waddenzee' 7th September 2004 Advocate General's Opinion (para 107).

¹⁹EUR-Lex. The Precautionary Principle. Available at: <https://eur-lex.europa.eu/EN/legal-content/summary/the-precautionary-principle.html> [Date accessed: 07/03/24].

3 Scoping of threats and pressures at European sites

3.1 Introduction

- 3.1.1 An important initial stage of the screening process is gathering information on European sites which may be affected by the GNSP. This is informally known as scoping and provides an understanding of potential impact pathways from the GNSP and connections to European sites and their vulnerabilities. This information is then used to inform the screening assessment (**Chapter 5**). This chapter therefore scopes European sites and their associated threats and pressures in the context of potential impacts from the GNSP.

3.2 Identification of an HRA study area

- 3.2.1 Each European site has its own intrinsic qualities, besides the habitats or species for which it has been designated, that enables the site to support its particular ecosystems. An important aspect of this is that the ecological integrity of each site can be vulnerable to change from natural and human induced activities in the surrounding environment (known as pressures and threats). For example, sites can be affected by land use plans in a number of different ways, including the direct land take of new development, the type of use the land will be put to (for example, an extractive or noise-emitting use), the pollution / threat a development generates (air pollution, water pollution or increased recreational pressure), and the resources used (for example water abstraction).
- 3.2.2 An intrinsic quality of any European site is its functionality at the landscape ecology scale. This refers to how the site interacts with its immediate surroundings as well as the wider area. This is particularly the case where there is potential for developments resulting from a plan to generate water or air-borne pollutants, use water resources or otherwise affect water levels. Adverse effects may also occur via impacts to mobile species occurring outside a designated site boundary, but which are qualifying features of the site. For example, there may be effects on protected birds, bats and fish which use land outside a designated site for foraging, feeding, roosting, breeding, or other activities.
- 3.2.3 There is no guidance that defines the study area for inclusion in an HRA. Planning Practice Guidance for Appropriate Assessment indicates that:
- 3.2.4 *"The scope and content of an appropriate assessment will depend on the nature, location, duration and scale of the proposed plan or project and the interest features of the relevant site. 'Appropriate' is not a technical term. It indicates that an assessment needs to be proportionate and sufficient to support the task of the competent authority in determining whether the plan or project will adversely affect the integrity of the site".*

3.3 Scoping impact pathways

- 3.3.1 Threats and pressures to which European sites are vulnerable have been identified through reference to data held by the Joint Nature Conservation Committee (JNCC) and Natural England and through reference to Ramsar Information Sheets and Site Improvement Plans (SIPs). This information provides current and predicted issues at each European site and is summarised in **Appendix B**.

- 3.3.2 Supplementary advice notices prepared by Natural England often provide more recent information on threats and pressures upon European sites than SIPs and have therefore also been reviewed. A number of threats and pressures are unlikely to be exacerbated by the Local Plan and have therefore not been considered.
- 3.3.3 Sites of Special Scientific Interest (SSSIs) are protected areas in the United Kingdom designated for conservation. SSSIs are the building blocks of site-based nature conservation in the UK. A SSSI will be designated based on the characteristics of its fauna, flora, geology and/or geomorphology. Whilst typically analogous in ecological function, the reasons for its designation can be entirely different to those for which the same area is designated as a SAC, SPA or Ramsar.
- 3.3.4 Natural England periodically assesses the conservation conditions of each SSSI unit, assigning it a status. The conservation status of each SSSI highlights any European site that is currently particularly vulnerable to threats/pressures. Conservation status is defined as follows:
- Favourable;
 - Unfavourable – recovering;
 - Unfavourable – no change; or
 - Unfavourable – declining.
- 3.3.5 SSSI units in either an 'Unfavourable – no change' or 'Unfavourable – declining' condition indicate that the European site may be particularly vulnerable to certain threats or pressures. It is important to remember that the SSSI may be in an unfavourable state due to the condition of features unrelated to its designation. However, it is considered that the conservation status of SSSI units that overlap with European sites offer a useful indicator of habitat / species health at a particular location.
- 3.3.6 Natural England defines zones around each SSSI which may be at risk from specific types of development, these are known as Impact Risk Zones (IRZ). These IRZs are *"a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. The IRZs also cover the interest features and sensitivities of European sites, which are underpinned by the SSSI designation and "Compensation Sites", which have been secured as compensation for impacts on Natura 2000/Ramsar sites"*²⁰. The location of IRZs has been taken into consideration in this assessment as they provide a useful guide as to the location of functionally linked land (defined in **paragraph 3.3.7**) and likely vulnerabilities to development proposed within the Local Plan.

²⁰ Natural England (2019) Natural England's Impact Risk Zones for Sites of Special Scientific Interest User Guidance.

Available at: https://magic.defra.gov.uk/Metadata_for_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf [Accessed: 14/06/24].

3.3.7 Based on a review of the HRA work undertaken for the Councils' adopted Aligned Core Strategies, neighbouring LPA HRAs and local knowledge, the following potential impact pathways are considered to be within the scope of influence of the GNSP. Land use planning also has the potential to result in impacts upon qualifying features when located outside a designation boundary, known as functionally linked land (FLL)²¹. This HRA therefore also considers effects upon FLL or mobile species within the following topic assessments.

- **Air pollution:** Land use planning has the potential to increase atmospheric emissions of pollutants to the air. These can result in adverse effects at European sites such as eutrophication (nitrogen), acidification (nitrogen and sulphur) and direct toxicity (ozone, ammonia, and nitrogen oxides)²².
- **Water resources and water levels:** Urban development can change run off rates from urbanised areas to European sites or watercourses which run through them. An increase in housing provision can also influence supply and demand for water within the region which may impact water levels. Changes in water quantity also have the potential to affect functionally linked land (land or watercourses outside a designated site boundary).
- **Water quality:** Surface water run-off from urban areas has the potential to reduce the quality of water entering a catchment. Water quality may also be reduced through point source effluent discharges from new development at Wastewater Treatment Works (WwTWs) and other controlled discharge sources. Changes in water quality also have the potential to affect functionally linked land.
- **Recreational pressure:** New housing development has the potential to increase recreational pressure upon European sites which are accessible to the public.
- **Urbanisation effects:** Urban development has the potential to result in disturbing activities (such as noise, lighting, cat predation and visual disturbance). Disturbance effects may impact upon European sites themselves and their qualifying features when located outside a designated site boundary. It may also result in the fragmentation of connecting habitats and corridors which could hinder the movement of mobile qualifying species when located outside a designated site boundary.

²¹ "The term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore 'linked' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status". Source: Natural England (2016) Commissioned Report. NECR207. 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.

²² APIS (2016) Ecosystem Services and air pollution impacts. Available at: <http://www.apis.ac.uk/ecosystem-services-and-air-pollution-impacts> [Date accessed: 10/01/24].

3.4 Air quality

- 3.4.1 A change in air quality can have negative impacts upon habitats and species. It can result in the loss of sensitive species, an increase in species which benefit from certain nutrients and a change in species composition, structure, and function. Sources of air pollution can be direct, for example point industrial combustion sources, or diffuse, for instance an increase in emissions from traffic. Impacts can cause direct toxicity to plants or an indirect change in the chemical composition of soils e.g. nutrient enrichment or changes to soil pH (acidification).
- 3.4.2 Air quality impacts have been shown to typically affect European sites within 10km of a plan boundary²³. Campman and Kite (2021) note that *"this zone is based on professional judgment recognising that the effects of growth from development beyond 10km will have been accounted for in the Nitrogen Futures modelling work business as usual scenario"*²⁴. This 10km distance threshold can be a useful guide to identify the broad areas that may be impacted by air quality. However, it is acknowledged that consideration should also be given to larger residential or commercial allocations and their wider potential for air quality impacts in the context of the local and regional road network.
- 3.4.3 Data obtained from the Office for National Statistics highlights the most common destinations for journeys to work undertaken by car or van arising from and finishing in the GNSP area²⁵. The key traffic destinations / origins include the Greater Nottingham Authorities themselves and adjoining neighbouring authority areas such as Ashfield and Newark and Sherwood. The Birklands and Bilhaugh SAC is the only European site which is sensitive to air pollution and located within this key commuting area.
- 3.4.4 Traffic modelling has been undertaken to support the development of the GNSP. This modelling uses the East Midlands Gateway traffic model, which is a multimodal transport model built following guidance in the Department for Transport's (DfT) Transport Analysis Guidance (TAG). The model covers the road network across which it is anticipated that growth in the GNSP will have an influence²⁶. The area of influence does not extend to the Birklands and Bilhaugh SAC, given its distance at more than 11km to the north of the GNSP area. There are no other European sites which are located within both the key commuting areas and the area covered by the traffic model. As such, it is unlikely that any European site will be affected by a change in air quality as a result of development associated with the GNSP.

²³ Chapman, C and Kite, B. (2021) Main Report. Guidance on Decision-making Thresholds for Air Pollution. JNCC Report No. 696. Available at: <https://hub.jncc.gov.uk/assets/6cce4f2e-e481-4ec2-b369-2b4026c88447> [Date accessed: 10/01/24].

²⁴ JNCC. Nitrogen Future. <https://jncc.gov.uk/our-work/nitrogen-futures/> [Date accessed: 10/01/24].

²⁵ Office for National Statistics (2011) Location of usual residence and place of work by method of travel to work (2011 census data). Travel by car or van only. Available at: <https://www.nomisweb.co.uk/census/2011/WU03UK/chart/1132462281> [Date accessed: 07/03/24].

²⁶ Systra (2023) Greater Nottingham Strategic Plan Strategic Transport Assessment.

3.5 Water quality and water quantity

- 3.5.1 Urban development coming forward through the GNSP has the ability to affect water-dependent European sites through a number of impacts as listed below. These impacts have the potential to change the water balance (levels) and the quality of water entering European sites:
- Change in surface permeability and run off rates;
 - Increased water demand to supply new homes and businesses;
 - Reduced quality of surface run off water; and
 - Increased effluent discharge for treatment at Wastewater Treatment Works (WWTWs).
- 3.5.2 Decisions relating to water abstraction for supply and disposal of water are controlled through a number of licensing mechanisms and a high-level water planning framework which is subject to HRA. This ensures the protection of the water environment and compliance with the Water Framework Directive (WFD). This high-level water planning framework includes plans which inform the management of water quality and the supply of water at the catchment scale.
- 3.5.3 There are no European sites located within the GNSP boundary. European sites located outside the GNSP area can be affected by changes in water supply and quality where they are hydrologically linked to development allocated in the GNSP.
- 3.5.4 The GNSP area is located within the Humber River Basin District. The River Trent runs in a west to east direction to the south of Broxtowe, Nottingham City and Gedling and to the north of Rushcliffe. Broxtowe is drained by the River Erewash and its tributaries which flows in a southerly direction along the borough's western boundary towards the River Trent. The River Leen drains the western area of Gedling, flowing in a southerly direction through the centre of the Nottingham City before joining the River Trent to its south. The eastern area of Gedling is drained by tributaries of the River Trent including the Ouse Dyke and the Cocker Beck. Rushcliffe is also drained by a number of tributaries of the River Trent including the Fairham Brook, Polser Brook, Smite, Car Dyke, Shelford Brook and Whipling. In addition, the River Soar drains the western area of Rushcliffe joining the River Trent on Rushcliffe's western administrative boundary. The GNSP area is located predominantly within the Trent Lower and Erewash and the Soar Surface Water Management Catchments (SWMC). The GNSP area also falls within the Idle and Torne SWMC area but is not drained by any surface water features which link into this SWMC area.
- 3.5.5 River Basin Management Plans (RBMPs) provide a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, they also inform decisions on land-use planning.

- 3.5.6 The Humber RBMP²⁷ provides a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, they also inform decisions on land-use planning. RBMPs provide strategic level policy guidance in relation to baseline classification of water bodies, statutory objectives for protected areas and water bodies, and a summary of measures to achieve statutory protection.
- 3.5.7 The River Trent drains to the Humber Estuary, which is designated as a SAC, SPA and Ramsar for a number of qualifying features (**Appendix B**). LSEs due to a change in water quality are therefore scoped in for these designations. There are no other European sites downstream of the GNSP area which are hydrologically linked by surface water features.
- 3.5.8 The Greater Nottingham Planning Partnership has prepared a Water Cycle Study (WCS) as part of the GNSP evidence base, which draws on data provided by Severn Trent Water (STW) and the Environment Agency and sets out future strategies for water and wastewater infrastructure in the area²⁸. It also addresses water supply, groundwater, water abstraction, water quality, wastewater and flooding issues.
- 3.5.9 The WCS notes that STW is the potable water provider for the Plan area. Water companies divide their supply into Water Resource Zones (WRZs). A WRZ is the geographical area used by water companies to develop forecasts of supply and demand. STW has divided their supply area into 15 WRZs for the purpose of water resource planning²⁹. These zones have differing water resource concerns and require different levels of investment. The GNSP area lies predominantly within the Nottinghamshire WRZ as shown on **Figure 3.1**, with a small area to the south of the GNSP area located within the Strategic Grid WRZ. Only the Birklands and Bilhaugh SAC coincides with these WRZs, with no other European sites falling within a corresponding WRZ to the GNSP area.
- 3.5.10 The SIP for the Birklands and Bilhaugh SAC indicates that it is not sensitive to water quantity impacts. This is due to the site's geology, which is free draining sandstone, allowing surface water to percolate quickly to the underlying Sherwood aquifer. It also notes that surface water is not found on site and that the water table is currently 15-20m below the surface³⁰.

²⁷ Environment Agency (2022) Humber River basin district management plan: updated 2022. Available at: <https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022> [Accessed 29/05/24].

²⁸ Greater Nottingham Strategic Partnership (2024) Water Cycle Study.

²⁹ Severn Trent Water. WRZs. Available at: <https://www.severntrent.com/about-us/our-plans/water-resources-management-plan/> [Date accessed: 18/03/24].

³⁰ Natural England (2015) Site Improvement Plan: Birklands & Bilhaugh (SIP016). Available at: <https://publications.naturalengland.org.uk/file/5351066822508544> [Date accessed: 18/03/24].

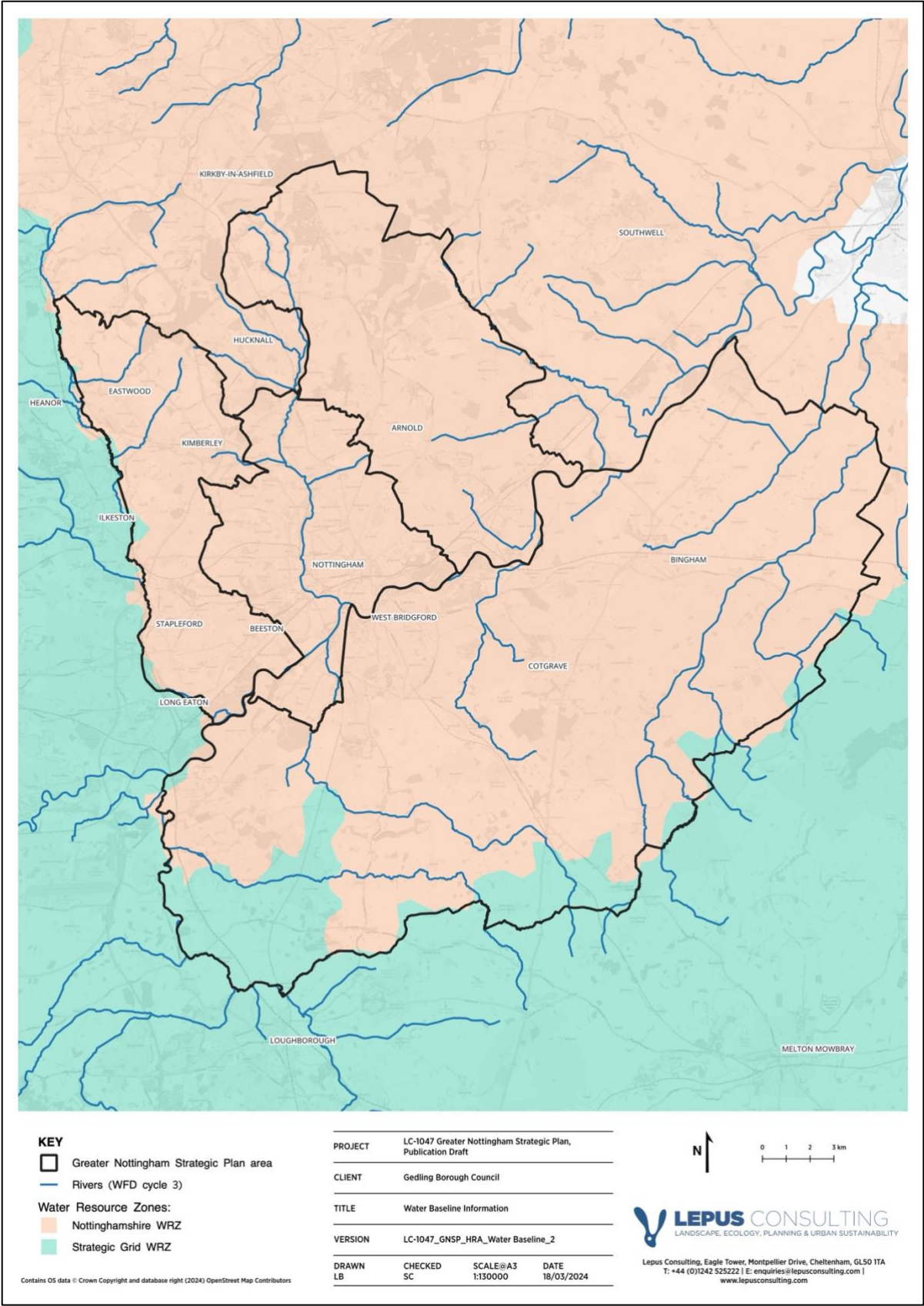


Figure 3.1: Water baseline information in GNSP area

- 3.5.11 The Environment Agency (EA) prepares Abstraction Licensing Strategies (ALS) through its Catchment Abstraction Management Strategy (CAMS) process. These ALSs are prepared for each sub-catchment within a river basin. The CAMS process aims to assess the amount of water available for further abstraction licensing, taking into account environmental needs and implementation of the RBMPs and water abstraction plans³¹. The CAMS process is published in a series of ALSs for each river basin. The GNSP area and Nottinghamshire WRZ lie predominantly within the Lower Trent and Erewash ALS.
- 3.5.12 It is a statutory requirement that every five years water companies produce and publish a Water Resources Management Plan (WRMP). The WRMP demonstrates long term plans to accommodate the impacts of population growth, drought, environmental obligations and climate change uncertainty in order to balance supply and demand. STW's WRMP was adopted in August 2019 and primarily focuses on a 25-year timeframe, from 2020-2045. STW published a draft of the WRMP (dWRMP24) in November 2022 which covers the period from 2025 – 2085³² and will supersede WRMP19 when adopted. WRMP24 will cover the GNSP period and take into consideration the anticipated level of growth in the GNSP. The WRMP will also set out objectives in relation to water management in the area, including demand management, water supply schemes and measures to protect the environment and address climate change.
- 3.5.13 The above review of desk-based information indicates that there are no hydrological links between the GNSP area and water-sensitive European sites (see **Table 3.1** for a summary). Therefore, water quantity LSEs can be scoped out of this assessment.
- 3.5.14 Land use planning has the potential to result in impacts upon qualifying features (for instance species of fish or birds) when located outside a designation boundary, known as functionally linked land (as defined in **paragraph 3.3.7**).
- 3.5.15 The tests set out under Article 105 of the Habitats Regulations need to be applied in respect of plans which may significantly affect functionally linked land that plays an important role in contributing to the favourable conservation status of the relevant species for which a European site is designated.
- 3.5.16 The Court of Justice of the European Union (CJEU) ruling in the Holohan case confirmed that habitats and / or species which are located outside of a designated site, if they are necessary to the conservation of the habitat types and species listed for the protected area, must be considered in an AA.
- 3.5.17 As noted, the GNSP area falls within the hydrological catchments associated with the Humber Estuary. The qualifying features of the Humber Estuary SAC and the Humber Estuary Ramsar include amongst other features, river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*). River lamprey have been recorded as far upstream as the River Dove (on the Staffordshire/Derbyshire border).

³¹ DEFRA. July 2021. Policy Paper: Water Abstraction Plan. Available at: <https://www.gov.uk/government/publications/water-abstraction-plan-2017/water-abstraction-plan> [Date accessed: 15/02/24].

³² Severn Trent Water. WRMP24. Available at: <https://www.severntrent.com/about-us/our-plans/water-resources-management-plan/> [Date accessed: 12/03/24].

- 3.5.18 Any potential deterioration in water quality or habitat outside the Humber Estuary SAC and Ramsar designations as a result of the GNSP may have implications for the migration of fish to upstream spawning habitat if it results in a barrier to movement. The impact of the GNSP upon functionally linked watercourses and habitat through a deterioration in water quality, flows and loss and / or deterioration of riparian and in-stream habitat may therefore have adverse effects on the achievement of the conservation objectives which aim to maintain and restore the condition of these features for relevant qualifying species. Natural England consider that Good Ecological Status under the WFD is an appropriate standard for functionally linked watercourses³³.
- 3.5.19 Taking into consideration potential changes in water levels (through abstraction for water supply), water quality (through surface water run-off and discharges from WwTWs) and impacts upon functionally linked watercourses, European sites were screened for potential hydrological impact pathways. **Table 3.1** indicates which European sites will be scoped into the screening assessment for further consideration in the HRA process in terms of hydrological impact pathways.

Table 3.1: Review of hydrological impact pathways to European sites within the influence of the GNSP

European site with hydrological links to the GNSP area	Sensitive to hydrological impacts (water quality and water quantity)	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Humber Estuary SAC, SPA and Ramsar	Yes	The Plan area is located within the Humber River Basin District. Watercourses draining the Plan area will ultimately drain into the Humber Estuary and it is therefore hydrologically connected via surface water features to these downstream designations. In addition, these downstream designations support species of migratory fish which use the upper catchment for spawning and are sensitive to changes in water quality.	The Humber Estuary designations are not located within the Nottinghamshire or Strategic Grid WRZ. The SIP for the Humber Estuary SAC does not identify it as being sensitive to a change in water levels. Therefore, potential abstraction impacts as a result of growth set out in the GNSP can be scoped out.	Yes

³³ Defra (2014) Water Framework Directive implementation in England and Wales: new and updated standards to protect the water environment (publishing.service.gov.uk). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/307788/river-basin-planning-standards.pdf [Date accessed: 10/01/24].

European site with hydrological links to the GNSP area	Sensitive to hydrological impacts (water quality and water quantity)	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Birklands and Bilhaugh SAC	No	Birkland and Bilhaugh SAC is not located within the GNSP area. As set out in Natural England's Site Improvement Plan, the SAC is not sensitive to changes in water quality. The SAC is not hydrologically linked to the GNSP area as it is located upstream, and water quality impacts are unlikely.	The SAC is located within the Nottinghamshire WRZ and also the Idle and Torne ALS catchment. As noted in paragraph 3.5.10 , the SIP for the Birklands and Bilhaugh SAC indicates that it is not sensitive to water quantity impacts ³⁴ . The Birklands and Bilhaugh SAC can therefore be scoped out of this assessment in terms of water quantity impacts.	No

3.6 Recreational pressure

- 3.6.1 Increased recreational pressure at European sites can result in damage to habitats through erosion and compaction, troubling of grazing stock, causing changes in behaviour to animals such as birds at nesting and feeding sites, spreading invasive species, dog fouling, tree climbing etc.
- 3.6.2 A common approach taken across the UK to address recreational impacts at European sites is to establish a Zone of Influence (ZOI) based on detailed visitor survey data. The ZOI is the area within which there are likely to be significant effects arising from recreational activities undertaken by additional residents due to growth. This is often calculated by taking the distance at which 75% of interviewees surveyed have travelled to reach a particular site (based on a review of visitor survey data).
- 3.6.3 The broad principle of buffer zones is one component of the HRA screening process for recreational pressures. This process also takes into consideration other factors such as recreational management at sites, proximity to settlements and existing recreational resources.

³⁴ Natural England (2015) Site Improvement Plan: Birklands & Bilhaugh (SIP016). Available at: <https://publications.naturalengland.org.uk/file/5351066822508544> [Date accessed: 18/03/24].

- 3.6.4 Where available, recreational ZOI distances have been applied to determine potential pathways of recreational effects from the GNSP. The recreational draw of a European site depends on a number of factors. These include the extent and range of facilities provided (in particular parking), accessibility both within the European site and links to the wider area, incorporation of a European site as part of a wider designation such as a National Park and the site's promotion. A review of recreational impact assessments undertaken for other European sites across the UK indicates visitors typically live within 4.2 km (overall median value) of nature conservation sites and that the majority (75%) live within 12.6 km³⁵. However, this review recognises that some visitors are prepared to travel longer distances to visit particular sites, for instance coastal and wetland sites. As such, a precautionary distance of 15km has been applied to scoping of European sites at which there may be potential recreational impact pathways. There is one European site located within 15km of the GNSP area, the Birklands and Bilhaugh SAC.
- 3.6.5 As part of the Bassetlaw Local Plan review, a Recreational Impact Assessment (RIA) was commissioned for Birklands and Bilhaugh SAC/Sherwood Forest National Nature Reserve (NNR)³⁶. The aim of this RIA was to identify potential recreational mitigation required to ensure no adverse impacts from the Bassetlaw Local Plan, either alone or in-combination with other plans and projects. The assessments included consideration of a Garden Village which was a key component of the Bassetlaw Local Plan. Since preparation of the RIA, two landowners unexpectedly withdrew their site from the proposed Garden Village development. This was reflected in the version of the Bassetlaw Plan which was submitted for independent examination³⁷. The RIA however still provides some useful baseline information in relation to the SAC regarding habitat types present, bird surveys and recreational impacts which have been drawn upon in this HRA.
- 3.6.6 The RIA identified existing recreational impacts which are taking place on site including trampling of habitats, damage to veteran trees, contamination, and disturbance to ground nesting birds. The visitor surveys highlighted that approximately a fifth of all interviewees visited the survey area one to three times per week, whilst another fifth of interviewees visited less than once per month. Analysis of visitor postcode data, when looking at only the two most frequent activity types undertaken on site (walkers and dog walkers), and those who visit at least once a month, suggested a recreational ZOI of 8.9km.
- 3.6.7 The GNSP area does not fall within this 8.9km ZOI, as shown in **Figure 3.2**, and therefore recreational impacts upon the Birklands and Bilhaugh SAC can be scoped out of the HRA process. There are no other European sites within 15km of the GNSP area.

³⁵ Weitowitz, D, C. Panter, C. Hoskin, R. and Liley, D. October 2019. The effect of urban development on visitor numbers to nearby protected nature conservation sites. Journal of Urban Ecology, Volume 5, Issue 1. Available at: <https://academic.oup.com/jue/article/5/1/juz019/5602629> [Date accessed: 10/01/24].

³⁶ Saunders, P., Lake, S. & Liley, D. (2021). Birklands & Bilhaugh SAC Recreation Impact Assessment Report- a report prepared for Bassetlaw District Council in conjunction with Newark and Sherwood District Council. Available at: <https://www.bassetlaw.gov.uk/media/6691/cd-016-birklandsbilhaugh-sac-draft-recreation-impact-assessment-report.pdf> [Date accessed: 15/01/24].

³⁷ Bassetlaw District Council (2021) Bassetlaw Local Plan 2020 – 2037 Publication Version. August 2021. Available at: <https://www.bassetlaw.gov.uk/media/6527/local-plan-publication-version-2020-2037.pdf> [Date accessed: 04/01/24].

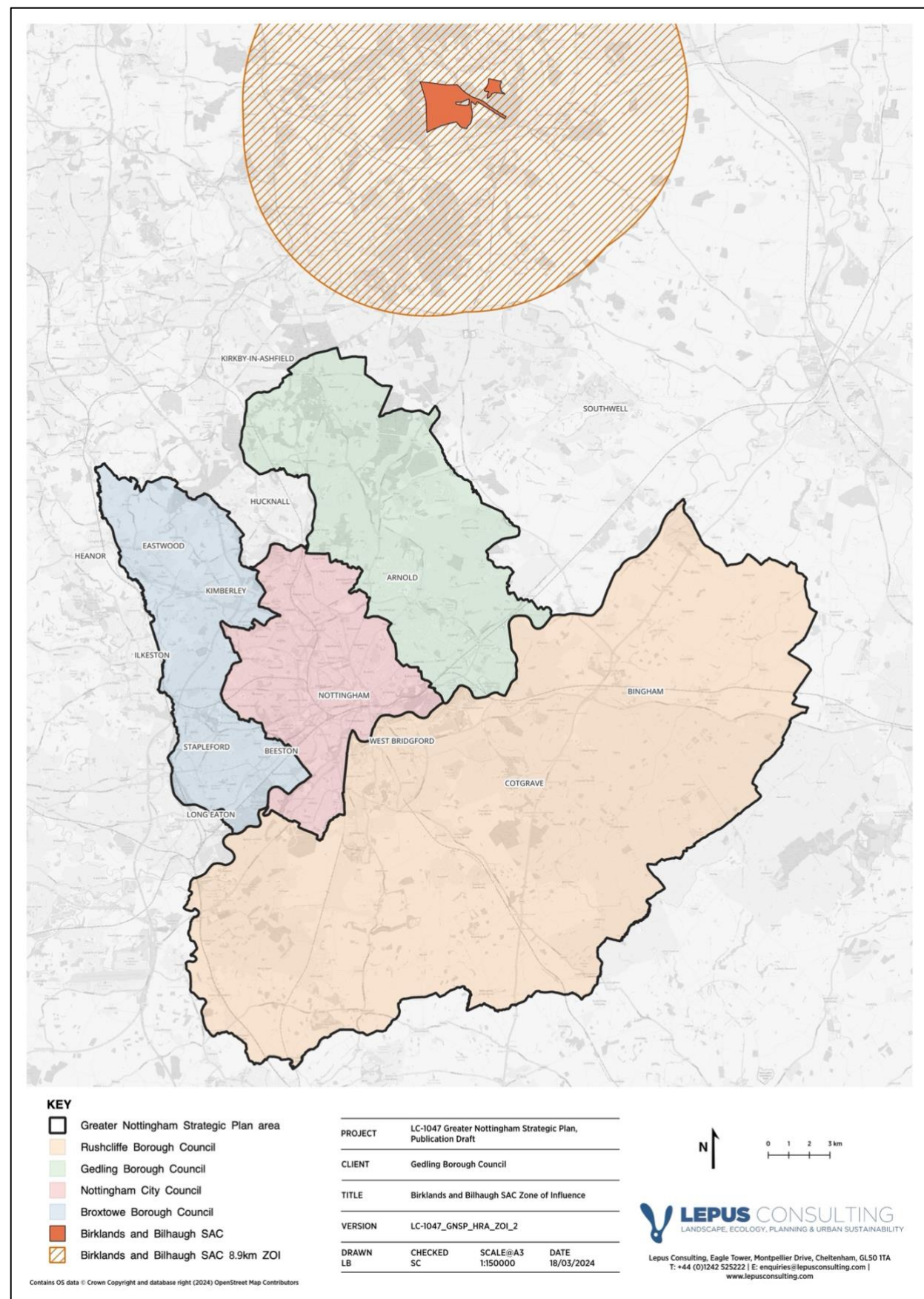


Figure 3.2: Location of GNSP area in relation to Birklands and Bilhaugh SAC Recreational Zone of influence.

3.7 Urbanisation effects

- 3.7.1 Urbanisation effects typically occur when development is located close to a European site boundary. These may include impacts such as noise disturbance, lighting effects, cat predation, fly-tipping, wildfire, littering, vandalism, and fragmentation of habitat. Strategic mitigation schemes elsewhere in the UK have set a presumption against development (i.e. no net increase in residential dwellings) on the basis of site-specific evidence to safeguard against these impacts of between 400m³⁸ and 500m³⁹. These distances recognise the distance within which cat predation is likely to take place, and also the increased frequency of visits made by people living in close proximity to a designated site. There are no European sites located within 500m of the GNSP area and therefore urbanisation effects are unlikely.

3.8 European sites and threats and pressures

- 3.8.1 **Figure 3.3** illustrates the location of European sites which will be scoped into the HRA process for further consideration in the screening assessment (**Chapter 5**). These include the following:

- Humber Estuary SAC – water quality
- Humber Estuary Ramsar – water quality
- Humber Estuary SPA – water quality

³⁸ Thames Basin Heaths Strategic Joint Partnership. Thames Basin Heaths SPA Delivery Framework. Available at: <https://www.guildford.gov.uk/media/21979/Thames-Basin-Heaths-SPA-delivery-framework/pdf/thames-basin-heaths-spa-delivery-framework.pdf?m=636114482807070000> [Date accessed: 10/01/23].

³⁹ Panter, C., Liley, D., Lake, S., Saunders, P., and Caals, Z. 2022. Visitor survey, recreational impact assessment and mitigation requirements for the Chilterns Beechwoods SAC and the Dacorum Local Plan, Report by Footprint Ecology for Dacorum Borough Council.

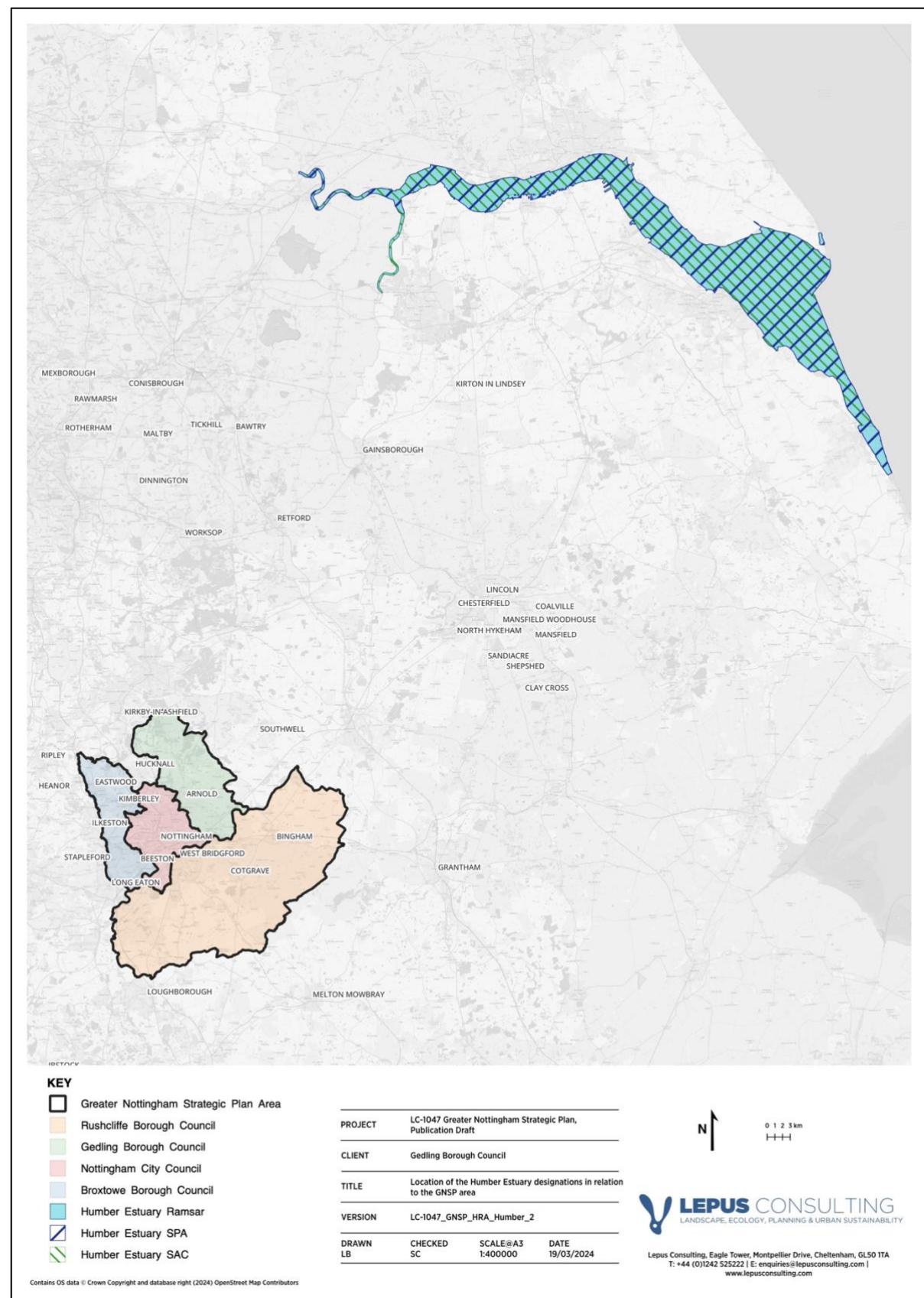


Figure 3.3: Location of the Humber Estuary designations in relation to the GNSP area

4 Sherwood Forest possible potential Special Protection Area (ppSPA)

4.1 Natural England advice

- 4.1.1 At a Public Inquiry in 2011, the Secretary of State refused planning permission for an Energy Recovery Facility (ERF) on land at the former Rufford Colliery site at Rainworth. This was due to likely effects of development on breeding populations of nightjar and woodlark within Sherwood Forest⁴⁰. This area has been notified as a Royal Society for the Protection of Birds (RSPB) Important Bird Area (IBA)⁴¹ and identified as an indicative core area by Natural England in 2014⁴². The ppSPA is comprised of these two areas and shown in **Figure 4.1**.

⁴⁰ Communities and Local Government (2011) Town and Country Planning Act 1990 – Section 77. Application by Veolia Nottinghamshire Limited Land at Former Rufford Colliery, Rainworth, Nottinghamshire, NG21 0ET (Application Ref: 3/07/01793/CMW. Available at: <https://webarchive.nationalarchives.gov.uk/20121029114856/http://www.communities.gov.uk/documents/planning-callins/pdf/1914959.pdf> [Date accessed: 10/01/24].

⁴¹ An Important Bird and Biodiversity Area (IBA) is an area identified using an internationally agreed set of criteria as being globally important for the conservation of bird populations. Area obtained from RSPB (Updated on 20th July 2021) Available at: <https://opendata-rspb.opendata.arcgis.com/datasets/RSPB::ibas-uk/explore?location=53.114506%2C-1.169710%2C11.91> [Date accessed: 18/03/24]

⁴² Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region.

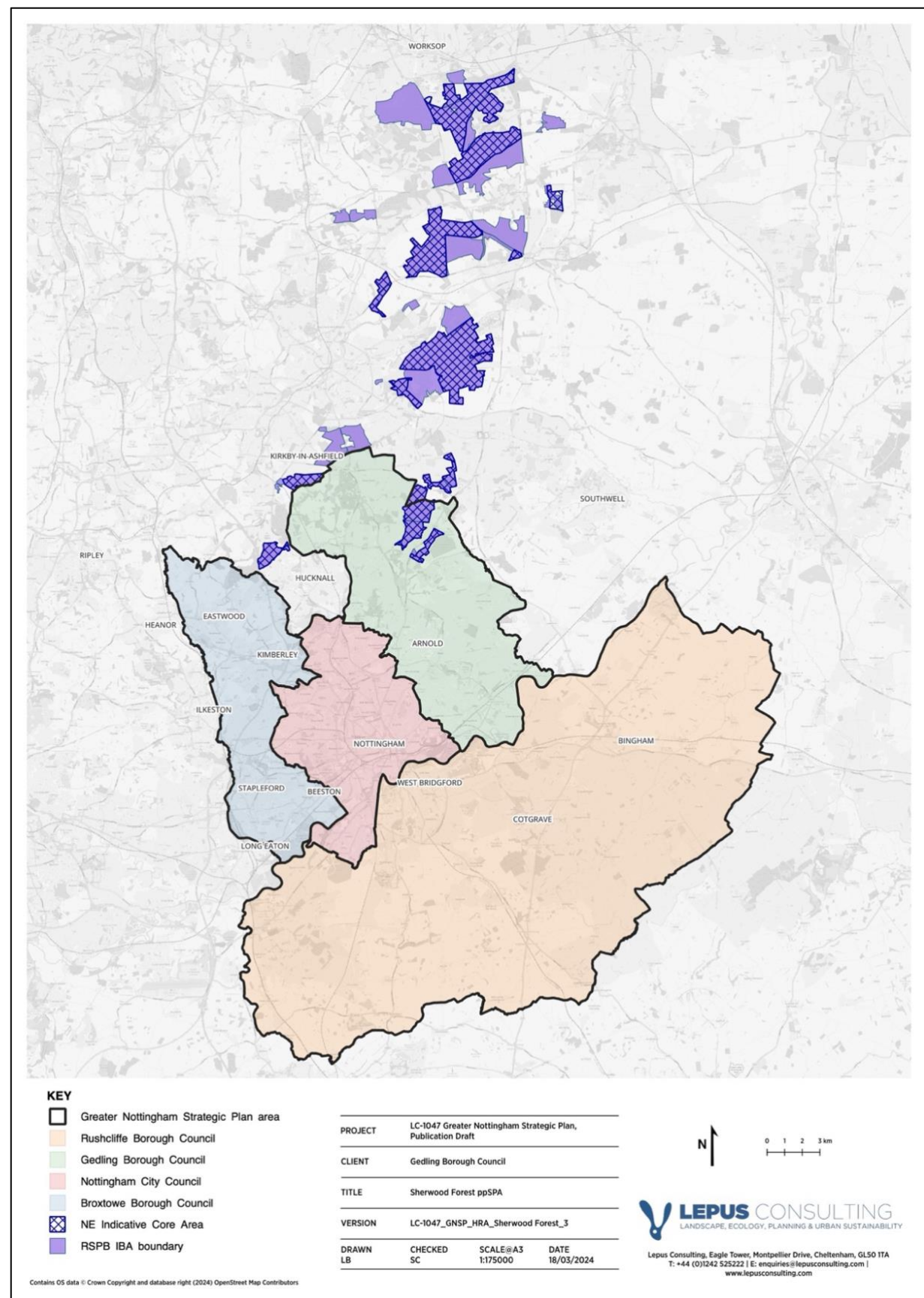


Figure 4.1: Sherwood Forest ppSPA location map⁴³

- 4.1.2 These areas of land are informally known together as the Sherwood Forest possible potential Special Protection Area (ppSPA). The Sherwood Forest ppSPA encompasses those areas of greatest ornithological interest for breeding nightjar and woodlark⁴⁴.
- 4.1.3 Following the Rufford Colliery Public Inquiry, Natural England provided advice to all affected LPAs in 2014 in relation to the Sherwood Forest ppSPA⁴⁵. This advice recommends a precautionary approach be adopted which ensures reasonable and proportionate steps are taken to avoid or minimise, as far as possible, any potential adverse effects from development on the breeding populations of nightjar and woodlark in the Sherwood Forest area. Natural England recommend that plans and proposals be accompanied by an additional and robust assessment of the likely impacts arising from the proposals on breeding nightjar and woodlark in the Sherwood Forest area. This should ideally cover the potential direct, indirect, and cumulative impacts which may include, but may not be limited to, the following;
- Disturbance to breeding birds from people, their pets and traffic;
 - Loss, fragmentation and/or damage to breeding and/or feeding habitat;
 - Bird mortality arising from domestic pets and/or predatory mammals and birds;
 - Bird mortality arising from road traffic and/or wind turbines; and
 - Pollution and/or nutrient enrichment of breeding habitats.
- 4.1.4 As such, whilst not a formal European site designation, in order to ensure a risk-based approach has been undertaken, impacts from the GNSP upon the Sherwood Forest ppSPA have been considered separately in this HRA.
- 4.1.5 The native population of nightjar and woodlark⁴⁶ present at Sherwood Forest ppSPA is believed to be close to, or meets, the qualifying feature standards that are used to designate European sites (SPAs) for breeding birds; chiefly that the population represents more than 1% of the UK population. However, other variables are also considered relevant to the creation of a SPA designation.

⁴³ RSPB IBA GIS layer (Updated 20th July 2021) Available at: <https://opendata-rspb.opendata.arcgis.com/datasets/RSPB::ibas-uk/explore?location=53.114506%2C-1.169710%2C11.91> [Date accessed: 18/03/24]. NE Indicative Core Area drawn from Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region: Map highlighting the areas of greatest ornithological interest for breeding nightjar and woodlark, submitted as evidence to the Rufford ERF Public Inquiry 2010.

⁴⁴ This area has been established on the basis of evidence provided to the Rufford Colliery Public Inquiry and comprises national nightjar and woodlark surveys undertaken in 2004 and 2006.

⁴⁵ Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region.

⁴⁶ Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region.

4.2 Nightjar in Sherwood Forest ppSPA

- 4.2.1 Sherwood Forest ppSPA supports a population of breeding nightjar⁴⁷. The normal counting unit for nightjars is churring males. In 2004 the UK population of nightjar was estimated at 4,600 churring males⁴⁸. The threshold for SPA classification is to support 1% of the UK population, which for nightjar would be 46 churring males. The most up-to-date nightjar survey data from the Nottinghamshire Biological and Geological Records Centre (NBGRC) undertaken by the Royal Society for the Protection of Birds (RSPB) reveal the number of territories in Sherwood Forest, based on the number of churring males without adjustment, recorded during a 2016 survey, to be 96⁴⁹. Each territory is approximately 1km². Further analysis of the data accounting for habitat blocks, gave a minimum estimate of 66 pairs, which was considered to be similar to previous surveys of Sherwood: 67 territories in 1981, 73 in 1992 and 66 in 2004. This suggests that nightjar are maintaining their population.
- 4.2.2 A steep linear decrease in the number of successful fledglings per breeding attempt has become evident, with studies suggesting nest failure is most likely in areas frequented by walkers and dogs⁵⁰.
- 4.2.3 **Figure 4.2**, replicated from the NBGRC report, shows the number of churring males recorded across Sherwood Forest. This shows a fairly even distribution across the ppSPA, although populations might be denser in the more northern portions of the forest. This distribution of nightjar in Sherwood accords well with the RSPB IBA and the Natural England Indicative Core Area (see **Figure 4.1**)⁵¹. **Figure 4.3** illustrates nightjar (and woodlark) records provided by the NBGRC for the period between 2008 to 2020.
- 4.2.4 As detailed in **Section 3.6**, an RIA was commissioned for Birklands and Bilhaugh SAC/Sherwood Forest NNR as part of the Bassetlaw Local Plan review. An additional RIA was also commissioned at Clumber Park SSSI. Both these sites underpin parts of the Sherwood Forest ppSPA. These RIAs provide some useful baseline information in relation to the ppSPA in relation to habitat types present, bird surveys and recreational impacts which has been drawn upon in this HRA.

⁴⁷ Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region. Available at: https://www.ashfield.gov.uk/media/xmhma3qg/natural_england_s_advice_notes_on_the_sherwood_ppspa_2014.pdf [Date accessed: 08/01/24].

⁴⁸ Conway, G., Wotton, S., Henderson, I., Langston, R., Drewitt, A. & Currie, F. (2007) Status and distribution of European Nightjars *Caprimulgus europaeus* in the UK in 2004. *Bird Study* 54: 98–111.

⁴⁹ Cornish, C., Lowe, A., Wilkinson, C., Lucas, E and Wotton, S. 2018. A report by RSPB for the Sherwood Habitats Strategy Group.

⁵⁰ Langston, R.H.W., Liley, D., Murison, G., Woodfield, E. & Clarke, R.T. (2007) What effects do walkers and dogs have on the distribution and productivity of breeding European Nightjar *Caprimulgus europaeus*? *Ibis* 149, supplement 1: 27–36.

⁵¹ Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region. Available at: <https://www.mansfield.gov.uk/downloads/file/329/natural-england-s-advice-notes-on-the-sherwood-ppspa-2014> [Date accessed: 04/01/24].

- 4.2.5 The RIAs included bird surveys, targeting woodlark and nightjar. The surveys indicated four to five territorial nightjar within the Sherwood Forest NNR which indicates that the locality potentially supports a significant proportion of the qualifying populations of the Sherwood Forest ppSPA.
- 4.2.6 The nightjar is a ground-nesting summer migrant which feeds on moths and other flying insects at night, mainly at dusk and dawn. They predominantly feed over heathland and along forest rides but are most successful at feeding when there is range of food-rich habitats present⁵². Nightjar nests are usually located within gaps in dry lowland heathland, coppice woods or forest clearings with limited tree canopy cover. During the day the nightjar is found on open ground habitats and often use trees as song or lookout posts⁵³. They require an open mosaic of habitats to meet all lifecycle stages. The height, cover, variation and composition of vegetation and characteristics of habitat are important to support breeding and successful nesting, rearing of young, concealment from predators and movement along flight lines and roosting. Requirements for a nightjar include⁵⁴:
- Heathland;
 - Open woodland;
 - Clearings;
 - Recently felled conifer plantations; and
 - Heterogenous and semi-open natural habitats.

⁵² RSPB /NCC (2006) Norfolk Biodiversity Action Plan. Available at:
<https://www.norfolkbiodiversity.org/assets/Uploads/Nightjar3.pdf> [Date accessed: 10/01/24].

⁵³ Cornish, C., Lowe, A., Wilkinson, C., Lucas, E and Wotton, S. 2018. A report by RSPB for the Sherwood Habitats Strategy Group.

⁵⁴ Sierro, Antoine, et al. "Habitat use and foraging ecology of the nightjar (*Caprimulgus europaeus*) in the Swiss Alps: towards a conservation scheme." Biological conservation 98.3 (2001): 325-331.

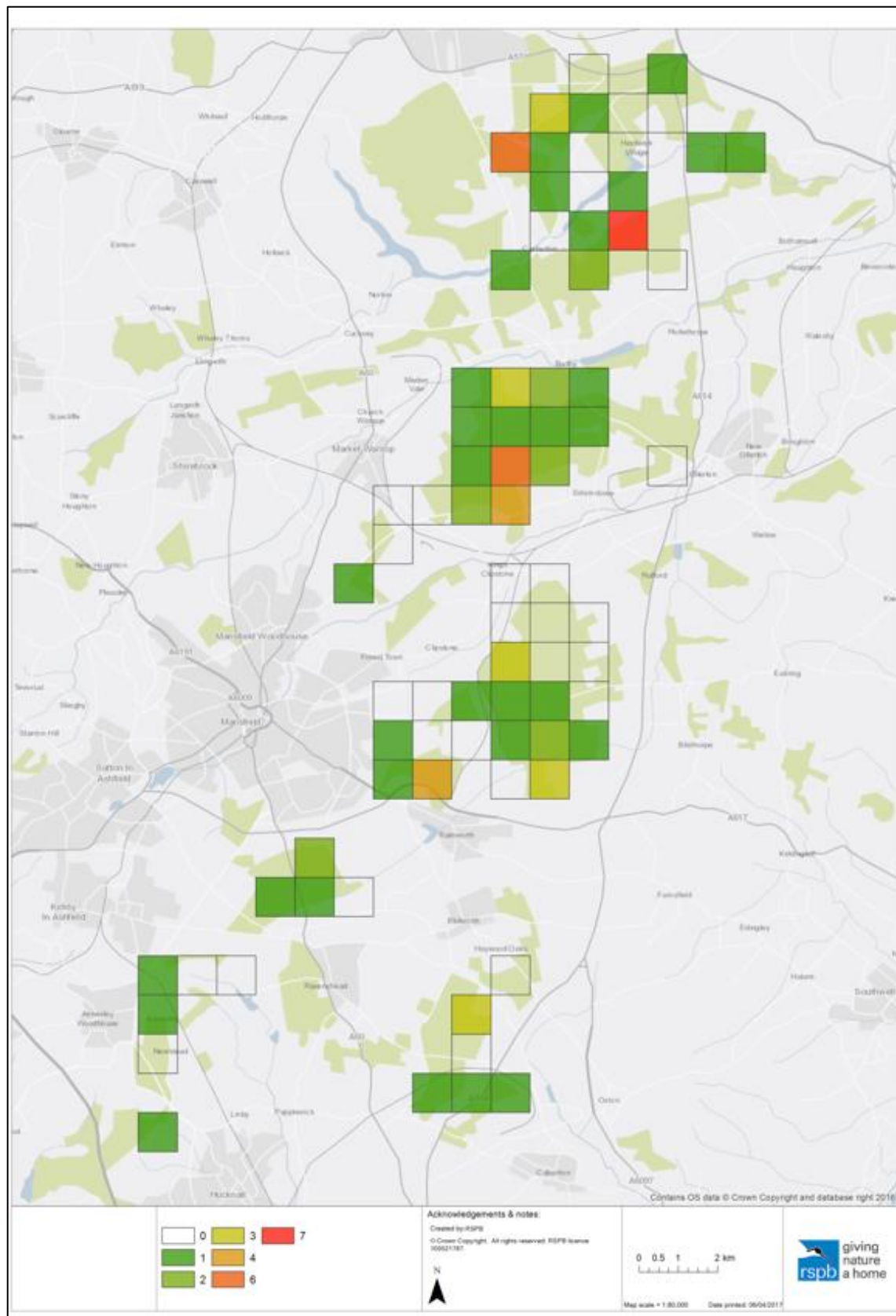


Figure 4.2: Records of (nightjar) churring males at Sherwood Forest based on a nightjar survey completed in 2016 by the RSPB (source: NBGRC)

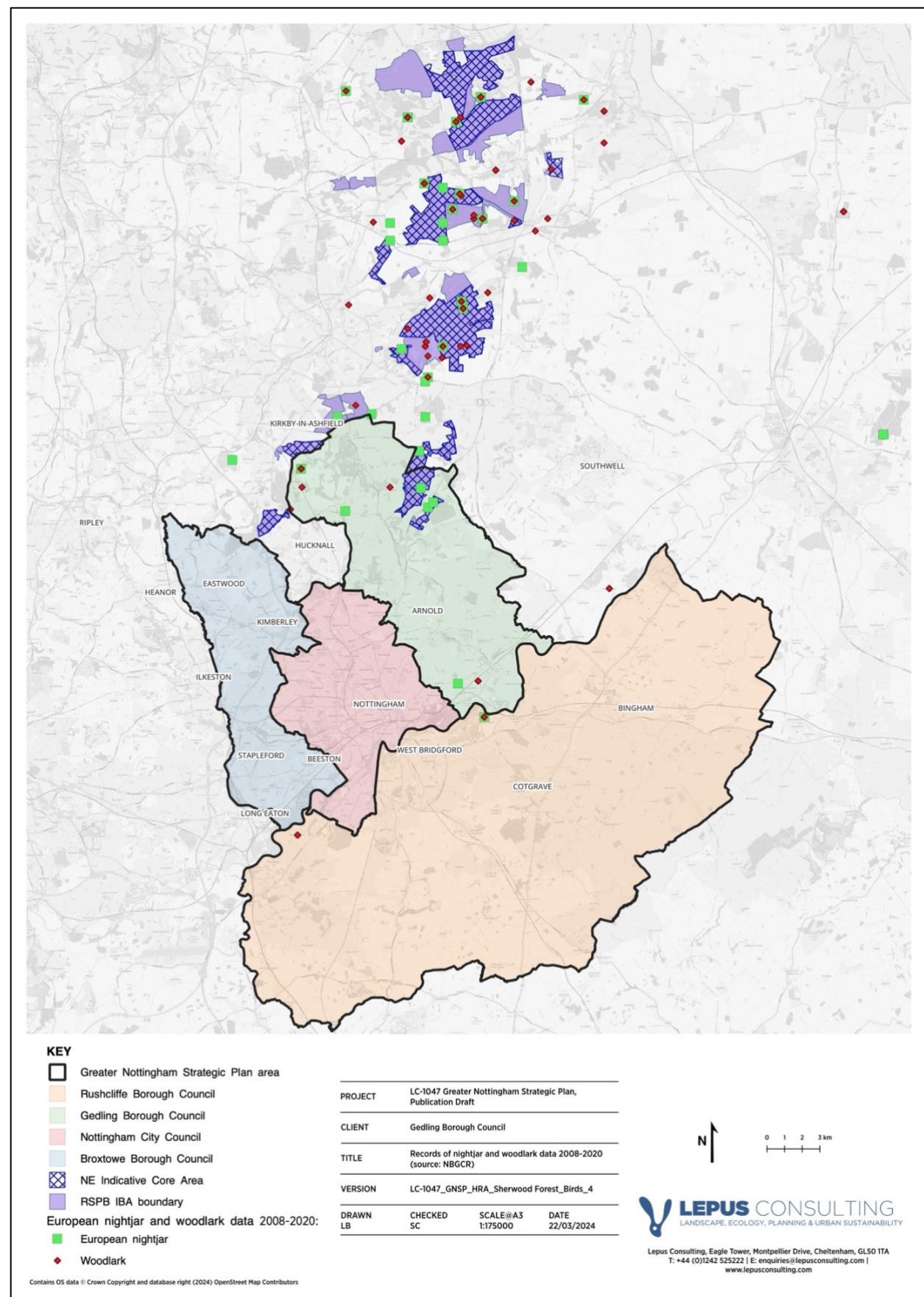


Figure 4.3: Records of nightjar and woodlark data 2008 – 2020 (source: NBGRC)

4.3 Woodlark in Sherwood Forest ppSPA

4.3.1 Populations of woodlark in Sherwood Forest are less well established than nightjar. Their territories are considered to average approximately 3.4ha, ranging from 0.9 to 8.3ha, whilst male territories rarely, if ever, overlap⁵⁵. The mean distance woodlark travel from nest to forage site is 3.1km, with the majority travelling between 2km and 4km⁵⁶.

4.3.2 The Bassetlaw Local Plan RIAs bird surveys indicated the presence of four to six pairs of woodlark within the Sherwood Forest NNR, indicating that the locality potentially supports a significant proportion of the qualifying populations of the Sherwood Forest ppSPA.

4.3.3 Woodlark are a ground nesting bird which feeds predominantly on beetles, caterpillars and spiders foraged from the soil or from short turf⁵⁷. During the winter, they change their diet to feed on seeds and often join flocks of finches, skylarks and buntings on stubbles and set-aside fields and therefore agricultural fields may become an important habitat type at this time of the year. Similarly to nightjar, woodlark require an open mosaic structure of habitat to support all life cycle stages. Occasional trees around woodland edges or scattered trees provide song and lookout posts. Their habitat requirements include:

- Lowland heathland with short, sparse, natural developed turf interspersed with tussocky vegetation;
- A high abundance of invertebrate prey on bare ground;
- Winter fields (stubbles and set-asides); and
- Heterogeneous land type with two to four land cover types suitable for foraging and nesting.

4.4 Sherwood Forest designations

4.4.1 Sherwood Forest ppSPA coincides with seven SSSIs (see **Appendix C**) and the Birklands and Bilhaugh SAC as shown in **Figure 4.4**.

4.4.2 The SSSI condition data for each of these sites indicates that all of the sites have some units that are in an 'unfavourable' condition. The unfavourable condition of these units is due to poor woodland management of the scrub as well as public access and disturbance through the construction of surfaced walkways and buildings.

4.4.3 In addition, the ppSPA also contains a number of other underpinning designations as follows:

- The Greenwood (Community Forest)
- Sherwood Heath Local Nature Reserve (LNR)
- Sherwood Forest NNR
- Rainworth Water LNR

⁵⁵ Sirami, C., Brotons, L., & Martin, J. L. (2011). Woodlark *Lullula arborea* and landscape heterogeneity created by land abandonment. *Bird Study*, 58(1), 99-106.

⁵⁶ Bright, J. A., Langston, R. H. W. and Anthony, S. (2009) Mapped and written guidance in relation to birds and onshore wind energy development in England. RSPB Research Report No 35.

⁵⁷ The Wildlife Trust (2023) Woodlark. Available at: Date accessed: 30/01/24].

- Oak Tree Heath LNR
- Cockglode and Rotary Wood LNR
- Clumber Park Nature Reserve

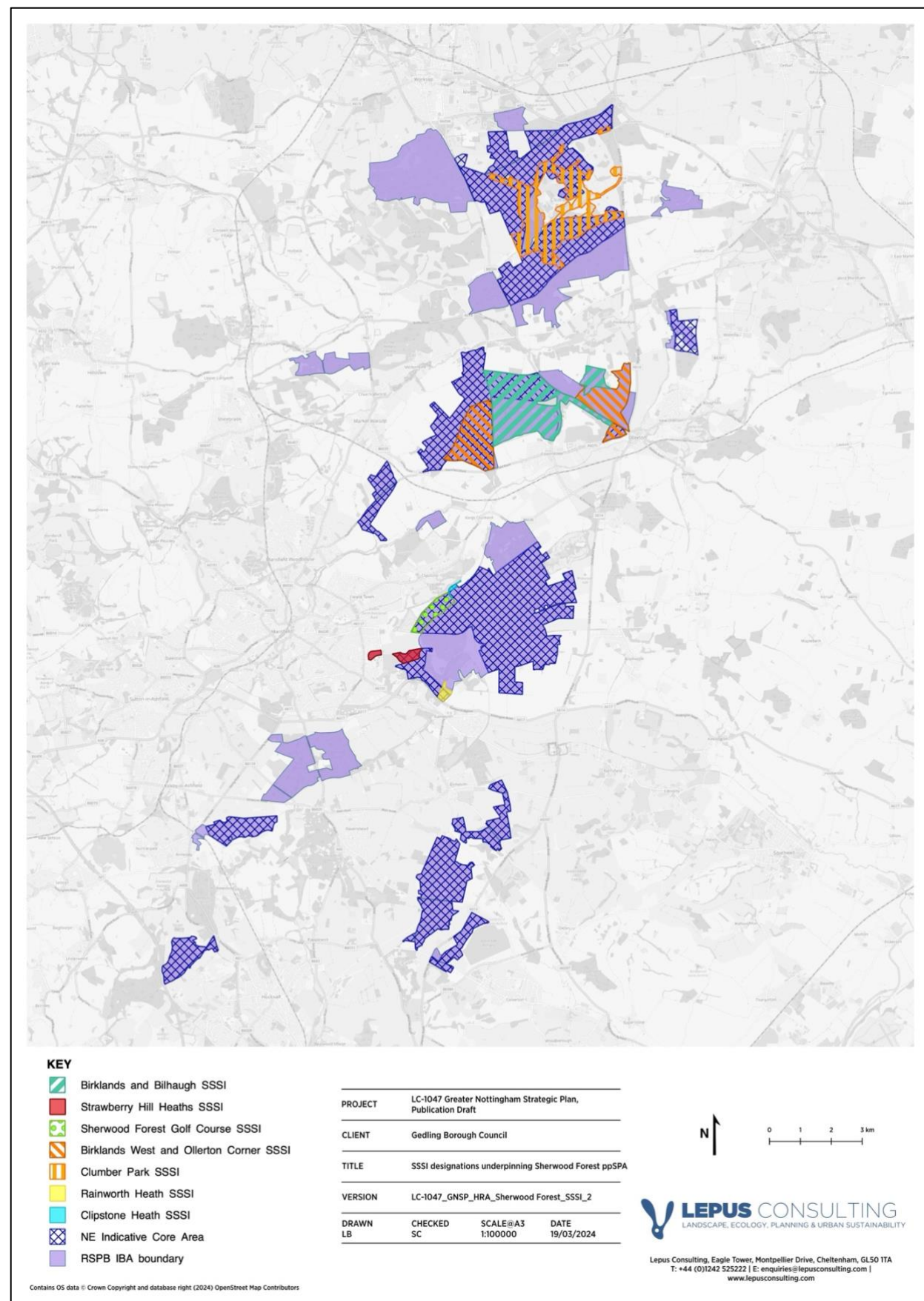


Figure 4.4: Corresponding SSSI designations within Sherwood Forest ppSPA

4.5 Scoping of threats and pressures at the Sherwood Forest ppSPA

Air quality

4.5.1 **Section 3.4** describes the negative impacts air quality can have upon habitats and species when critical loads or critical levels are exceeded. Natural England has developed a standard methodology for the assessment of traffic related air quality impacts under the Habitats Regulations which is relevant to the HRA of land use plans⁵⁸. This guidance sets a methodology and thresholds for screening of air quality LSEs at the HRA screening stage (Stage 1 of the HRA process).

4.5.2 Natural England's guidance (in the form of a series of questions / thresholds listed below) has been applied to determine potential air quality impact pathways to European sites:

- Does the GNSP give rise to emissions which are likely to reach a designated site?
- Are the qualifying features of sites within 200m of a road sensitive to air pollution?
- Could the sensitive qualifying features of the site be exposed to emissions?
- Application of screening thresholds (alone and then, if necessary, in-combination).

Does the GNSP give rise to emissions which are likely to reach a designated site?

4.5.3 The GNSP will trigger housing and employment development and therefore increase traffic related emissions. Air quality impacts have been shown to typically affect European sites within 10km of a plan boundary and within key commuting areas (see **Section 3.4**)^{59,60}. A number of components of the Sherwood Forest ppSPA are located within the GNSP area and also within 10km of the GNSP boundary and key commuting areas (see **Figure 4.5**). These ppSPA components are also situated within the traffic model area (**Section 3.4**).

⁵⁸ Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001). Available at:

<http://publications.naturalengland.org.uk/publication/4720542048845824> [Date accessed: 10/01/24].

⁵⁹ Chapman, C and Kite, B. (2021) Main Report. Guidance on Decision-making Thresholds for Air Pollution. JNCC Report No. 696. Available at: <https://hub.jncc.gov.uk/assets/6cce4f2e-e481-4ec2-b369-2b4026c88447> [Date accessed: 10/01/24].

⁶⁰ JNCC. Nitrogen Future. <https://jncc.gov.uk/our-work/nitrogen-futures/> [Date accessed: 10/01/24].

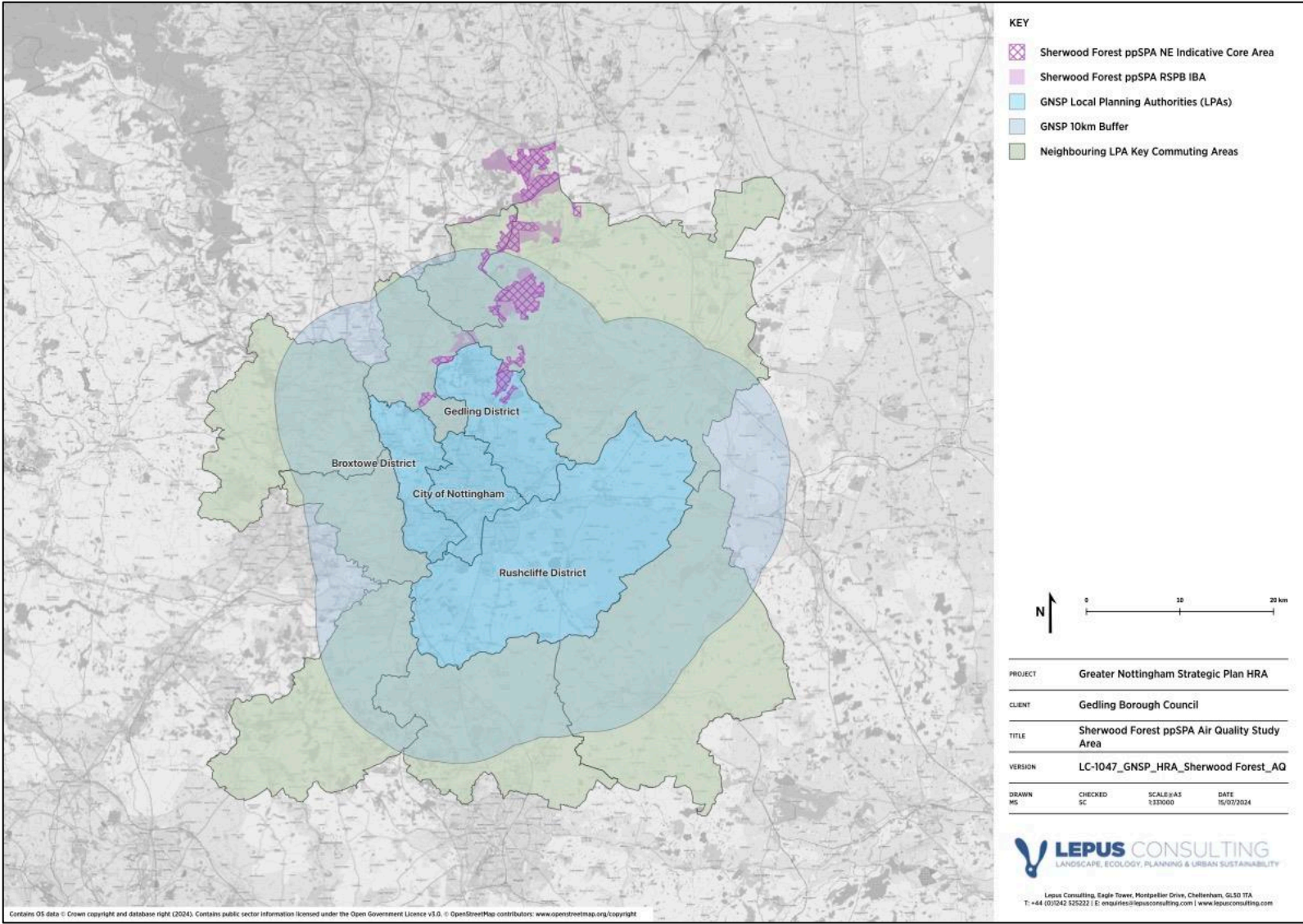


Figure 4.5: Air quality study area in relation to Sherwood Forest ppSPA

Are the qualifying features of sites within 200m of a road sensitive to air pollution?

- 4.5.4 It is widely accepted that air quality impacts are greatest within 200m of a road source, decreasing with distance^{61,62,63}. As the ppSPA comprises several components spread out over a large area, a number of strategic routes and non-strategic road links pass within 200m of the ppSPA. These routes are likely to be used by commuters to and from neighbouring authority areas as set out in **Section 3.4**.
- 4.5.5 Natural England's advice⁶⁴ indicates that the Sherwood Forest ppSPA is sensitive to 'pollution and/or nutrient enrichment of breeding habitats' which may include nitrogen deposition and acidification due to air pollution triggered by new development.
- 4.5.6 Whilst only small areas of the ppSPA are underpinned by SSSIs, a review of baseline mapping data shows that those which do underpin the ppSPA (**Figure 4.4**) support many habitats which are sensitive to air pollution and upon which nightjar and woodlark populations depend. Given the diverse diet of these birds it is unlikely that a change in air quality will affect food availability. However, given their specific nesting requirements, impacts from air pollution upon these habitats have the potential to occur. Local air pollution sources in the area include large farms, biomass and waste gas plants and road traffic⁶⁵.

⁶¹ The Highways Agency, Transport Scotland, Welsh Assembly Government, The Department for Regional Development Northern Ireland (2007) Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1: Air Quality.

⁶² Natural England (2016) The ecological effects of air pollution from road transport: an updated review. Natural England Commissioned Report NECR 199.

⁶³ Bignal, K., Ashmore, M. & Power, S. (2004) The ecological effects of diffuse air pollution from road transport. English Nature Research Report No. 580, Peterborough.

⁶⁴ Natural England (2014) Advice note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region. Available at: <https://www.mansfield.gov.uk/downloads/file/329/natural-england-s-advice-notes-on-the-sherwood-ppspa-2014> [Date accessed: 10/01/24].

⁶⁵ DEFRA (2019) Clean Air Strategy 2019. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf [Date accessed: 18/01/24].

4.5.7 **Table 4.1** summarises the critical loads and current nitrogen deposition for features of the SSSIs which coincide with Sherwood Forest ppSPA (**Figure 4.4**) and **Table 4.2** shows levels of acidity⁶⁶. It is noted that not all habitat types for which the underpinning SSSIs are designated provide important habitat for nightjar and woodlark. It is also noted that not all areas of the ppSPA are underpinned by a SSSI designation. Nightjar can be found on heathlands, moorlands, in open woodland within clearings and in recently felled conifer plantations. Nightjar feed on insects (moths and beetles)⁶⁷. Woodlark feed on seeds and insects and require sparse, short grassy or heathy turf, together with bare ground, as they forage for food on the ground; they also require tussocky vegetation for nesting and scattered trees to use as song posts⁶⁸. It can be seen that critical loads are exceeded (red shading) and within the critical load ranges (orange shading) for a number of these air quality sensitive features.

Table 4.1: Nitrogen Critical Loads at SSSIs that coincide with Sherwood Forest ppSPA⁶⁹

Features	Relevant Nitrogen Critical Load Class	Empirical Critical Load (kg N/ha/yr)	Current Nitrogen Deposition (Kg N/ha/yr) ⁷⁰
Clumber Park SSSI			
<i>Alnus glutinosa</i> - <i>Carex paniculata</i> Woodland	Broadleaved deciduous woodland	10-15	Max: 29.1 Min: 27.8 Average: 28.5
<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> Heath	Dry heaths	5-15	Max: 16.9 Min: 16.1 Average: 16.5
<i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> grassland	Low and medium altitude hay meadows	10-20	Max: 16.9 Min: 16.1 Average: 16.5
<i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i> grassland	Non-Mediterranean dry acid and neutral closed grassland	6-10	Max: 16.9 Min: 16.1 Average: 16.5
<i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Rumex acetosella</i> grassland	Inland sanddrift and dune with siliceous grassland	5-15	Max: 16.9 Min: 16.1 Average: 16.5
<i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Rumex acetosella</i> low land acid grassland	Non-Mediterranean dry acid and neutral closed grassland	6-10	Max: 16.9 Min: 16.1 Average: 16.5
<i>Typha latifolia</i> swamp	Designated feature/feature habitat not sensitive to eutrophication	n/a	n/a
Assemblages of breeding birds - Woodland	No critical load has been assigned for this feature	n/a	n/a
Invertebrate assemblage	No comparable habitat	n/a	n/a
Lowland open waters and their margins	No critical load has been assigned for this feature	n/a	n/a

⁶⁶ Air Pollution Information Systems (APIS) Available at: <http://www.apis.ac.uk/> [Date accessed: 08/01/24].

⁶⁷ RSPB. Bird A-Z. Available at: <https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/woodlark/> [Date accessed: 10/01/24].

⁶⁸ Dorset Wildlife Trust (2023) Woodlark. Available at: <https://www.dorsetwildlifetrust.org.uk/wildlife-explorer/birds/larks-sparrows-pipits-wagtails-and-dunnock/woodlark> [Date accessed: 08/01/24].

⁶⁹ Green – below critical load range. Amber – within critical load range. Red – exceeds critical load range.

⁷⁰ Total N deposition to Forest or Moorland depending on habitat type (kg/ha/yr).

Features	Relevant Nitrogen Critical Load Class	Empirical Critical Load (kg N/ha/yr)	Current Nitrogen Deposition (Kg N/ha/yr) ⁷⁰
Welbeck Lake SSSI			
Grey heron (<i>Ardea cinerea</i>)	No broad habitat assigned	n/a	n/a
Lowland open water	No broad habitat assigned	n/a	n/a
Thoresby Lake SSSI			
<i>Carex riparia</i> swamp	Designated feature/feature habitat not sensitive to eutrophication	n/a	n/a
Acid grassland – <i>Galium saxatile</i> grassland	Non-Mediterranean dry acid and neutral closed grassland	6-10	Max: 17.767 Min: 17.757 Average: 17.762
Fen, marsh and swamp (<i>Phragmites australis</i> swamp and reed-beds)	Rich fens	15-25	Max: 17.767 Min: 17.757 Average: 17.762
Birkland and Bilhaugh SSSI			
Broad-leaved, mixed and yew woodland (<i>Quercus</i> spp. <i>Betula</i> spp. <i>Deschampsia flexuosa</i> woodland)	<i>Acidophilous quercus</i> – dominated woodland	10-15	Max: 32.526 Min: 30.809 Average: 31.677
Broad-leaved, mixed and yew woodland (<i>Quercus robur</i> , <i>Pteridium aquilinum</i> and <i>Rubus fruticosus</i> woodland)	<i>Carpinus</i> and <i>Quercus</i> mesic deciduous forest	15-20	Max: 32.526 Min: 30.809 Average: 31.677
Dwarf shrub heath (<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i>)	Dry heaths	5-15	Max: 18.992 Min: 17.977 Average: 18.468
Invertebrate assemblage	No comparable habitat	n/a	none
Birklands West and Ollerton Corner SSSI			
<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> Heath	Dry heaths	5-15	Max: 19.064 Min: 18.101 Average: 18.554
Invertebrate assemblage	No comparable habitat	n/a	None
Strawberry Hill Heaths SSSI			
Dwarf shrub heath (<i>Calluna vulgaris</i> – <i>Deschampsia flexuosa</i> heath)	Dry heaths	5-15	Max: 19.658 Min: 19.609 Average: 19.628
Dwarf shrub heath (<i>Calluna vulgaris</i> – <i>Erica cinerea</i> heath)	Dry heaths	5-15	Max: 19.658 Min: 19.609 Average: 19.628
Rainworth Heath SSSI			
Dwarf shrub heath (<i>Calluna vulgaris</i> – <i>Deschampsia flexuosa</i> heath)	Dry heaths	5-15	Max: 19.521 Min: 19.28 Average: 19.402
Dwarf shrub heath (<i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath)	Northern wet heath: <i>Erica tetralix</i> dominated wet heath	5-15	Max: 19.521 Min: 19.28 Average: 19.402

Table 4.2: Acidity Critical Loads at SSSIs that coincide with Sherwood Forest ppSPA⁷¹

Features	Relevant Acidity Critical Load Class	Acidity Critical Load (keq)	Acid Deposition keq/ha/yr ⁷²
Clumber Park SSSI			
<i>Alnus glutinosa</i> - <i>Carex paniculata</i> Woodland	Unmanaged Broadleaved/Coniferous Woodland	MinCLminN: 0.142 MaxCLminN: 0.142 MinCLMaxS: 1.172 MaxCLMaxS: 1.207 MinCLMaxN: 1.314 MaxCLMaxN: 1.349	Maximum: 2.028 Minimum: 1.947 Average: 1.992
<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> Heath	Dwarf shrub heath	MinCLminN: 0.892 MaxCLminN: 0.892 MinCLMaxS: 0.48 MaxCLMaxS: 0.5 MinCLMaxN: 1.372 MaxCLMaxN: 1.392	Maximum: 1.331 Minimum: 0.826 Average: 1.07
<i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> Grassland	Calcareous grassland (using base cation)	MinCLminN: 0.856 MaxCLminN: 0.856 MinCLMaxS: 4 MaxCLMaxS: 4 MinCLMaxN: 4.856 MaxCLMaxN: 4.856	Maximum: 1.331 Minimum: 0.826 Average: 1.07
Assemblages of breeding birds - Woodland	No critical load assigned for this feature	n/a	none
Invertebrate assemblage	No comparable acidity class	n/a	none
Lowland open waters and their margins	No critical load assigned for this feature	n/a	none
Welbeck Lake SSSI			
Grey heron	No broad habitat assigned	n/a	none
Lowland open water	No broad habitat assigned	n/a	none
Thoresby Lake SSSI			
<i>Carex riparia</i> swamp	Designated feature/feature habitat not sensitive to eutrophication	n/a	none
Acid grassland – <i>Galium saxatile</i> grassland	No critical loads available for this site	n/a	none
Fen, marsh and swamp (<i>Phragmites australis</i> swamp and reed-beds)	No critical loads available for this site	n/a	none

⁷¹ Green – below critical load range. Amber – within critical load range. Red – exceeds critical load range. Exceedance values taken from APIS site critical loads and levels data plots.

⁷² Total acid deposition to Forest (keqN/ha/yr).

Features	Relevant Acidity Critical Load Class	Acidity Critical Load (keq)	Acid Deposition keq/ha/yr ⁷²
Birkland and Bilhaugh SSSI			
Broad-leaved, mixed and yew woodland (<i>Quercus</i> spp. <i>Betula</i> spp. <i>Deschampsia flecuosa</i> woodland)	Broadleaved /coniferous woodland	MinCLminN: 0.142 MaxCLminN: 0.142 MinCLMaxS: 1.243 MaxCLMaxS: 1.245 MinCLMaxN: 1.385 MaxCLMaxN: 1.387	Maximum: 2.268 Minimum: 2.154 Average: 2.211
Broad-leaved, mixed and yew woodland (<i>Quercus robur</i> , <i>Pteridium aquilinum</i> and <i>Rubus fruticosus</i> woodland)	Broadleaved /coniferous woodland	MinCLminN: 0.142 MaxCLminN: 0.142 MinCLMaxS: 1.243 MaxCLMaxS: 1.245 MinCLMaxN: 1.385 MaxCLMaxN: 1.387	Maximum: 2.268 Minimum: 2.154 Average: 2.211
Dwarf shrub heath	Dwarf shrub heath	MinCLminN: 0.892 MaxCLminN: 0.892 MinCLMaxS: 0.51 MaxCLMaxS: 0.51 MinCLMaxN: 1.402 MaxCLMaxN: 1.402	Maximum: 1.296 Minimum: 1.232 Average: 1.262
Invertebrate assemblage	No comparable acidity class	n/a	n/a
Birklands West and Ollerton Corner SSSI			
<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> Heath	Dwarf shrub heath	MinCLminN: 0.892 MaxCLminN: 0.892 MinCLMaxS: 0.5 MaxCLMaxS: 0.52 MinCLMaxN: 1.392 MaxCLMaxN: 1.412	Maximum: 1.31 Minimum: 1.238 Average: 1.27
Invertebrate assemblage	No comparable acidity class	n/a	None
Strawberry Hill Heaths SSSI			
Dwarf shrub heath (<i>Calluna vulgaris</i> – <i>Deschampsia flexuosa</i> heath)	Dwarf shrub heath	MinCLminN: 0.892 MaxCLminN: 0.892 MinCLMaxS: 0.5 MaxCLMaxS: 0.52 MinCLMaxN: 1.392 MaxCLMaxN: 1.412	Maximum: 1.362 Minimum: 1.355 Average: 1.358
Dwarf shrub heath (<i>Calluna vulgaris</i> – <i>Erica cinerea</i> heath)	Dwarf shrub heath	MinCLminN: 0.892 MaxCLminN: 0.892 MinCLMaxS: 0.5 MaxCLMaxS: 0.52 MinCLMaxN: 1.392 MaxCLMaxN: 1.412	Maximum: 1.362 Minimum: 1.355 Average: 1.358

Features	Relevant Acidity Critical Load Class	Acidity Critical Load (keq)	Acid Deposition keq/ha/yr ⁷²
Rainworth Heath SSSI			
Dwarf shrub heath (<i>Calluna vulgaris</i> – <i>Deschampsia flexuosa</i> heath)	Dwarf shrub heath	MinCLminN: 0.892 MaxCLminN: 1.035 MinCLMaxS: 0.27 MaxCLMaxS: 0.52 MinCLMaxN: 1.305 MaxCLMaxN: 1.412	Maximum: 1.348 Minimum: 1.335 Average: 1.341
Dwarf shrub heath (<i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath)	Dwarf shrub heath	MinCLminN: 0.892 MaxCLminN: 1.035 MinCLMaxS: 0.27 MaxCLMaxS: 0.52 MinCLMaxN: 1.305 MaxCLMaxN: 1.412	Maximum: 1.348 Minimum: 1.335 Average: 1.341

Could the sensitive qualifying features of the site be exposed to emissions?

- 4.5.8 As noted above, the GNSP will trigger housing and employment development and therefore has the potential to increase traffic related emissions within 10km of the GNSP area, key commuting zones and modelled area and along road links within 200m of Sherwood Forest ppSPA.
- 4.5.9 Road links within 200m of the ppSPA which are located within the air quality study area are illustrated on **Figure 4.6**.

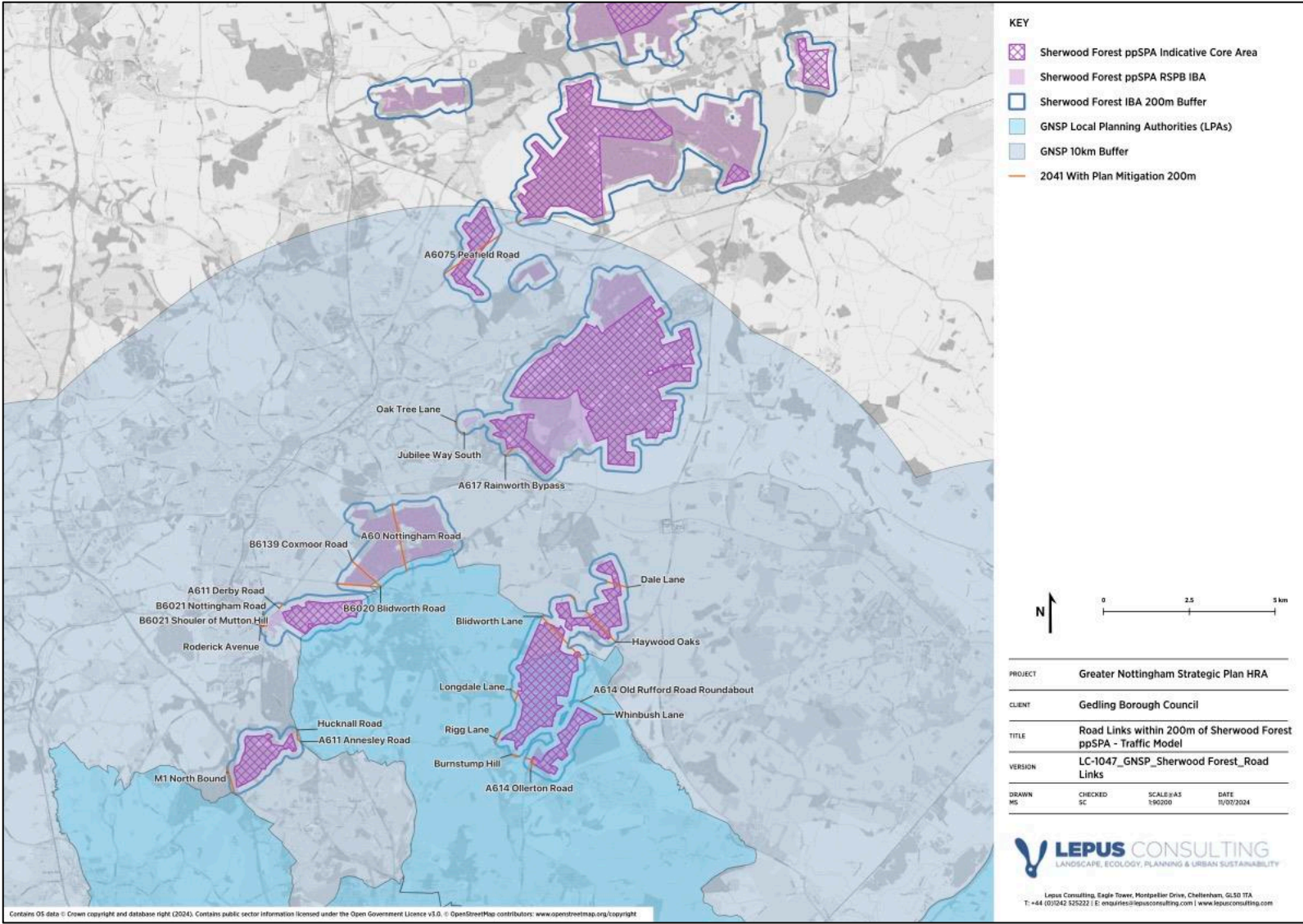


Figure 4.6: Road links from traffic model within 200m of the Sherwood Forest ppSPA

Application of screening thresholds (alone and then, if necessary, in-combination)

- 4.5.10 Natural England's advice on the assessment of air quality impacts under the Habitats Regulations states that consideration should be given to the risk of road traffic emissions associated with plans such as GNSP⁷³. This advice states that an assessment of the risks from road traffic emissions can be expressed in terms of the average annual daily traffic flow (AADT as a proxy for emissions). The use of the AADT screening threshold is advocated by National Highways in their Design Manual for Roads and Bridges (DMRB). This screening threshold is intended to be used as a guide to determine whether a more detailed assessment of the impact of emissions from road traffic is required. This non-statutory or guideline threshold is based on a predicted change of daily traffic flows of 1,000 AADT or more (or heavy-duty vehicle flows on motorways (HDV) change by 200 AADT or more).
- 4.5.11 The AADT thresholds do not themselves imply any intrinsic environmental effects and are used solely as a trigger for further investigation. Widely accepted environmental benchmarks for imperceptible impacts are set at 1% of the critical load or level, which is considered to be roughly equivalent to DMRB thresholds for changes in traffic flow of 1,000 AADT and for HDV of 200 AADT. This has been confirmed by modelling using the DMRB Screening Tool that used average traffic flow and speed figures from the DfT data to calculate whether the nitrogen oxide (NO_x) outputs could result in a change of >1% of critical load / level on different road types. A change of >1,000 AADT on a road was found to equate to a change in traffic flow which might increase emissions by 1% of the Critical Load or Level and might consequentially result in an environmental effect nearby (e.g. within 10 metres of roadside).
- 4.5.12 The AADT thresholds and 1% of critical load/level are considered by Natural England to be suitably precautionary as any emissions below this level are widely considered to be imperceptible and, in the case of AADT, undetectable through the DMRB model. There can, therefore, be a high degree of confidence in its application to screen for risks of an effect.
- 4.5.13 Traffic data, provided by Systra, was derived from the East Midlands Gateway Traffic Model as set out in **Section 3.4**. This model has been developed as a multimodal transport model built following guidance in the DfT's Transport Analysis Guidance (TAG).
- 4.5.14 Strategic road links within 200m of the Sherwood Forest ppSPA were identified. These strategic road links represent those links which have the potential to result in a change of AADT levels by 1,000 or more. Traffic data were provided from the traffic model for each of these road links as 24-hour AADT flows, with percentage HDV flows, for the following scenarios:
- Baseline year (2023): baseline traffic flows

⁷³ Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001). Available at:
<http://publications.naturalengland.org.uk/publication/4720542048845824> [Date accessed: 10/01/24]

- 2041 'Do Nothing' or 'Reference Case': future assessment year which does not include the influence of planned development set out in the GNSP but does allow for planned growth in neighbouring LPA areas.
- 2041 'Do Something' or 'With Development' Scenario with traffic mitigation measures: future assessment year which includes planned development set out in the GNSP and planned growth in neighbouring LPAs (Do Minimum or Reference Case above) but with traffic interventions.

4.5.15 The results for the Do-Nothing and Do-Something scenarios were compared against one-another to show the impacts of the GNSP in isolation. The in-combination assessment was completed by comparing the results of the base year with the Do-Something scenarios.

4.5.16 A summary of traffic data provided by Systra for road links within the modelled area which are located within 200m of the ppSPA are presented in **Table 4.3**. This data was screened against Natural England's 1,000 AADT threshold for LSEs. The change in AADT was firstly considered alone and then secondly in-combination.

Table 4.3: Summary of traffic data and application of screening thresholds⁷⁴

Road link name	Baseline flows (AADT, 2023)	Do Nothing flows (AADT, 2041)	Do Something flows (AADT, 2041)	Impact of the GNSP alone	Impact of the GNSP in-combination
A60 Nottingham Road	18149	23935	24032	97	5883
A6075 Peafield Road	5652	5755	5751	-4	99
A611 Annesley Road	19407	25886	32164	6278	12757
A611 Annesley Road North and South Bound	8779	12974	16670	3696	7891
A611 Derby Road (1)	16705	18352	19094	742	2389
A611 Derby Road (2)	12978	14430	14921	491	1943
A611 Derby Road (3)	16705	18352	19094	742	2389
A611 Derby Road (4)	20496	23916	26082	2166	5586
A614 Old Rufford Road Roundabout North	12204	13183	13457	274	1253
A614 Ollerton Road (1)	14091	15598	16006	408	1915
A614 Ollerton Road (2)	18094	19182	19679	497	1585
A617 Rainworth Bypass (1)	10876	15854	14350	-1504	3474
A617 Rainworth Bypass (2)	8692	14415	15945	1530	7253

⁷⁴ Changes over the 1,000 AADT threshold have been highlighted in red shading.

Road link name	Baseline flows (AADT, 2023)	Do Nothing flows (AADT, 2041)	Do Something flows (AADT, 2041)	Impact of the GNSP alone	Impact of the GNSP in-combination
B6020 Blidworth Road	7828	8643	8851	208	1023
B6021 Nottingham Road	7704	10316	11407	1091	3703
B6021 Shoulder of Mutton Hill	4900	7812	8833	1021	3933
B6139 Coxmoor Road	2987	3380	5261	1881	2274
Blidworth Lane	1779	654	851	197	-928
Burnstump Hill	5879	5846	6247	401	368
Dale Lane	255	284	361	77	106
Haywood Oaks	457	499	781	282	324
Hucknall Road	0	0	0	0	0
Jubilee Way South	14784	15892	16061	169	1277
Longdale Lane (1)	7174	7603	8182	579	1008
Longdale Lane (2)	7257	8266	9018	752	1761
M1	57555	73669	76034	2365	18479
Oak Tree Lane	20972	23661	24075	414	3103
Rigg Lane	83	663	835	172	752
Roderick Avenue	3913	4740	4390	-350	477
B6030 Mansfield Road ⁷⁵	3694	3673	3648	-25	-46

4.5.17 There is one small section of the B6030 (Mansfield Road) which is located within 200m of the Sherwood Forest ppSPA (and within 10km of the Plan area) but which is outside the traffic modelled area. A slightly more southerly link of the B6030 has therefore been used as a proxy to provide traffic flows for this location.

4.5.18 The A6075 runs within 200m of a number of components of the ppSPA. Traffic data is not available from the transport model for sections of the A6075 to the north of the study area and therefore traffic data for more southerly sections of the A6075 has been used as a proxy

⁷⁵ Data for taken for a B6030 road link which is located beyond 200m of the ppSPA, as the link within 200m of the ppSPA at this location is not located within the model area. This has been used as a proxy.

4.5.19 As detailed in **Table 4.3**, road links which showed an exceedance of the 1,000 AADT screening threshold due to the GNSP alone are listed below.

- M1
- B6139 Coxmoor Road
- B6021 Shoulder of Mutton Hill
- B6021 Nottingham Road
- A617 Rainworth Bypass (2)
- A611 Derby Road (4)
- A611 Annesley Road
- A611 Annesley Road North and South Bound

4.5.20 All other road links showed no exceedance alone of the 1,000 AADT screening threshold. It was therefore necessary to apply this threshold to the GNSP in-combination with other plans and projects. In-combination data shows that a number of additional road links exceed the 1,000 AADT screening thresholds as summarised in **Table 4.3** and as listed below:

- A60 Nottingham Road
- A611 Derby Road (1), (2) and (3)
- A614 Old Rufford Road Roundabout
- A614 Ollerton Road (1) and (2)
- A617 Rainworth Bypass (1)
- B6020 Blidworth Road
- Jubilee Way South
- Longdale Lane (1) and (2)
- Oak Tree Lane

4.5.21 As noted in Natural England⁷⁶ and Chartered Institute of Ecology and Environmental Management (CIEEM)⁷⁷ guidance on the assessment of air quality at designated sites, AADT thresholds do not themselves imply any intrinsic environmental effects, instead being used solely as a trigger for further investigation in the HRA process.

4.5.22 Given the exceedances identified in **Table 4.3**, air quality impacts at the Sherwood Forest ppSPA are scoped in for further consideration in the HRA process.

Water quality and water quantity

4.5.23 Sherwood Forest ppSPA is partly located within the GNSP area. Water has however not been identified in the Natural England Advice note as a potential threat to this site and will therefore not be considered further in the HRA⁷⁸.

⁷⁶ Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001). Available at:

<http://publications.naturalengland.org.uk/publication/4720542048845824> [Date accessed: 02/02/21]

⁷⁷ CIEEM. January 2021. Advisory Note: Ecological Assessment of Air Quality Impacts

⁷⁸ Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region.

Recreational effects

- 4.5.24 As noted in **Section 3.6**, RIAs were undertaken as part of the Bassetlaw Local Plan Review at two areas which form a small part of the overall ppSPA. These include the Birklands and Bilhaugh SAC/Sherwood Forest NNR⁷⁹ and Clumber Park SSSI⁸⁰. Accessibility across the rest of the ppSPA area varies in nature and has not been subject to visitor surveys.
- 4.5.25 The Birklands and Bilhaugh SAC/Sherwood Forest NNR and Clumber Park SSSI have a large visitor draw. Other sites within the ppSPA designation, such as those managed by the Forestry Commission, are also likely to draw visitors from a wider area. Public access is not possible or limited in others and is likely to have a much smaller draw for visitors.
- 4.5.26 The visitor survey undertaken as part of the RIAs highlighted the distance people travelled to Clumber Park SSSI, Sherwood Forest NNR and Birklands and Bilhaugh SAC⁸¹. Based on the visitor survey data, a suggested ZOI of 24.7km was determined for Clumber Park SSSI, with 8.9km suggested for the Sherwood Forest NNR and Birklands and Bilhaugh SAC.
- 4.5.27 To reflect the findings of the RIAs, Natural England updated their advice and IRZs in February 2023 in relation to Clumber Park SSSI⁸². This advice relates to additional recreational pressure resulting from proposed new residential development (of 50 dwellings or more) within 10km of the SSSI (see **Figure 4.6** for Clumber Park SSSI 10km IRZ). Natural England require such development to consider recreational pressures through an AA and consider appropriate mitigation measures through provision of adequate alternative green space. Natural England's advice encompasses Birklands and Bilhaugh SAC and parts of the Sherwood Forest ppSPA. The GNSP area does not lie within this 10km SSSI buffer zone.

⁷⁹ Saunders, P., Lake, S. & Liley, D. (2021). Birklands & Bilhaugh SAC Recreation Impact Assessment Report- a report prepared for Bassetlaw District Council in conjunction with Newark and Sherwood District Council. Available at: <https://www.bassetlaw.gov.uk/media/6691/cd-016-birklandsbilhaugh-sac-draft-recreation-impact-assessment-report.pdf> [Date accessed: 10/01/24].

⁸⁰ Saunders, P., Lake, S. & Liley, D. (2021). Clumber Park SSSI Recreation Impact Assessment Report- a report prepared for Bassetlaw District Council in conjunction with Newark and Sherwood District Council. Available at: https://www.bassetlaw.gov.uk/media/6838/622_clumber_park_recreation_impact_assessment_report_080322_final.pdf [Date accessed: 10/01/24].

⁸¹ It is noted that the visitor survey undertaken for the RIA covered the Sherwood Forest National Nature Reserve (which comprises a large proportion of Budby South Forest RSPB Reserve) in addition to the SAC.

⁸² Natural England. February 2023. Letter to affected LPAs. Subject: Update to Natural England's advice to ensure appropriate consideration of recreational pressure impacts to Clumber Park Site of Special Scientific Interest (SSSI) from relevant residential development.

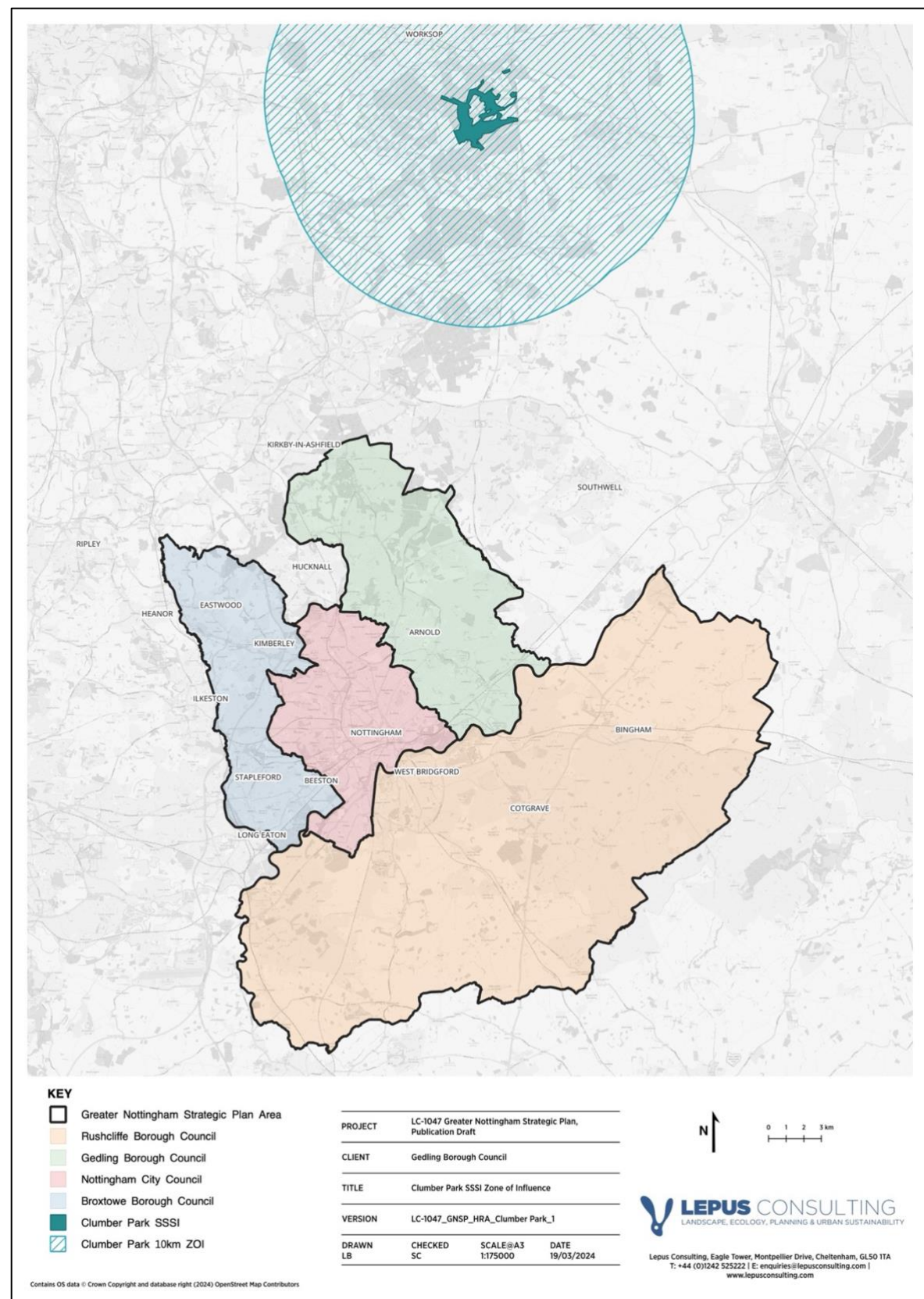


Figure 4.7: Location of GNSP area in relation to the suggested Clumber Park SSSI 10km IRZ 10km

- 4.5.28 There are various recreational activities and uses of the Sherwood Forest ppSPA that are likely to attract visitors from a wide catchment area. Activities include Sherwood Forest Country Park and Visitor Centre, Rufford Abbey and Country Park and the Centre Parcs holiday resort near Sherwood Pines Forest.
- 4.5.29 Natural England recommend taking a 'risk-based' approach to plan making at the Sherwood Forest ppSPA in relation to the impacts upon breeding nightjar and woodlark. This includes consideration of the following effects which may be worsened by increased public access and disturbance:
- Disturbance to breeding birds from people, their pets and traffic;
 - Loss, fragmentation and/or damage to breeding and/or feeding habitat; and
 - Bird mortality arising from domestic pets and/or predatory mammals and birds.
- 4.5.30 Given the location of the Sherwood Forest ppSPA within and adjacent to the GNSP area, recreational effects upon this designation will be considered in more detail in the HRA process.

Urbanisation effects

- 4.5.31 Given the birds of importance at the Sherwood Forest ppSPA include some of the same species as those for which the Thames Basin Heaths SPA is designated (nightjar and woodlark), it is reasonable to assume that a similar buffer distance of 400m may apply for consideration of urbanisation impacts. A study undertaken by Liley *et al*⁸³ indicates a correlation which suggests that patches of heathland surrounded by a high human population are less likely to support nightjar (due to urbanisation effects). However, other factors may also contribute to distribution such as declining availability of foraging areas.
- 4.5.32 Given the sensitivities of the Sherwood Forest ppSPA to urbanisation effects and its location within and adjacent to the GNSP area, it has been scoped in for further consideration in the HRA process.

Summary of impacts at the ppSPA

- 4.5.33 The Sherwood Forest ppSPA will be scoped into the HRA process for further consideration in the screening assessment, taking into consideration air quality, increased recreational pressures and urbanisation effects.

⁸³ 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.

5 Screening of the GNSP

5.1 Policy and allocations pre-screening

5.1.1 Each component of the GNSP has been appraised against the HRA pre-screening criteria (see **Table 2.1**), taking into consideration case law and best practice. **Appendix D** provides the output of this pre-screening exercise.

5.1.2 It is concluded that LSEs, either from the GNSP alone or in-combination with other plans or projects, could be screened out for a number of policy options. This is because they fell into the following categories (see **Table 2.1** for a description of each category):

- Category B: Policies listing general criteria for testing the acceptability / sustainability of proposals
- Category D: Environmental protection / site safeguarding
- Category F: Policies or proposals that cannot lead to development or other change.

5.1.3 A number of components of the GNSP were however considered likely to have an LSE on the basis of this assessment as they fell into the following categories:

- Category I: Policies or proposals with a likely significant effect on a site alone
- Category L: Policies or proposals which might be likely to have a significant effect in-combination
- Category M: Bespoke area, site or case-specific policies or proposals intended to avoid or reduce harmful effects on a European site.

5.1.4 LSEs were identified at the following European sites:

- Humber Estuary SAC – water quality
- Humber Estuary Ramsar – water quality
- Humber Estuary SPA – water quality

5.1.5 In addition, to ensure a 'risk-based' approach was adopted, consideration has also been given to the Sherwood Forest ppSPA, with air pollution, increased recreational pressures and urbanisation LSEs being identified.

5.2 Screening conclusion

5.2.1 The GNSP is not directly connected with or necessary to the management of any European site or the Sherwood Forest ppSPA. As required under Regulation 105 of the Habitats Regulations, an assessment has been undertaken of LSEs of the GNSP Plan upon European sites. The screening checks (**Appendix E**) indicate that the GNSP has the potential to have LSEs on the Humber Estuary SAC, SPA and Ramsar sites for a number of policies / allocations in-combination. The screening exercise has also identified potential LSEs upon the Sherwood Forest ppSPA. The screening assessment takes no account of mitigation measures that the GNSP may incorporate to mitigate adverse impacts upon European sites or the ppSPA. It is therefore concluded that the GNSP will be screened into the HRA process. The next stage of the HRA process will be Stage 2 - Appropriate Assessment.

6 Appropriate Assessment – Humber Estuary SAC, SPA and Ramsar

6.1 Introduction

- 6.1.1 The HRA screening process (**Appendix D**) concluded there is potential for the GNSP to have an adverse impact on hydrologically sensitive European sites and associated functionally linked habitat due to a potential change in water quality through surface water run-off and discharges from WWTWs.

6.2 Water Quality Appropriate Assessment

- 6.2.1 Water quality impacts have been screened in for the Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar in terms of direct impacts upon the designations themselves and also in terms of water quality impacts upon mobile qualifying features (river lamprey and sea lamprey) when using functionally linked watercourses outside these designation boundaries.
- 6.2.2 Natural England's SIP for the Humber Estuary identifies water pollution as a threat. This predominantly relates to an annual Dissolved Oxygen (DO) sag in the tidal River Ouse with potential implications for the migration of sea lamprey. It also relates to pollutants leaching from Capper Pass, a former aluminium smelting plant and that several of the Barton and Barrow clay pits on the south bank of the estuary fail the total phosphorus (P) target and need lake management plans and nutrient budgets⁸⁴. It is important that development set out in the GNSP does not add to these impacts in order for the Humber Estuary SAC, Humber Estuary SPA and Humber Estuary Ramsar site's conservation objectives to be achieved.
- 6.2.3 Water pollution can come from point and diffuse sources associated with new development. Increased domestic and / or employment discharge can lead to increased discharges at WWTWs (point source pollution). Diffuse sources of pollution can include contaminated runoff from new roads, drainage from residential areas and accidental spillages (for instance during construction of development or from commercial and employment sites).

⁸⁴ Natural England (2015) Humber Estuary SIP. Available at:
<http://publications.naturalengland.org.uk/publication/5427891407945728> [Date accessed: 28/02/24].

- 6.2.4 The Environment Agency (EA) as the environmental regulator, among other roles, has responsibility for water quality and resources in England. It manages discharges to the water environment through issue of Environmental Permits (EPs), which control the release of sewage discharges from WwTW. Issue of these EPs considers flow conditions and provides consent for maximum pollutant concentrations for each discharge. The objective of this system is to ensure that the receiving watercourses are not prevented from meeting their environmental objectives, with specific regard to the physico-chemical status element of the WFD classification. STW is the statutory sewerage undertaker providing wastewater services for the whole of Greater Nottingham. STW has a statutory obligation to provide capacity for new development, and to comply with the EPs set by the EA. Discharges from employment and commercial premises and WwTWs associated with GNSP development will therefore require an EP to be issued from the EA to ensure compliance of water quality with requirements of the WFD.
- 6.2.5 Drainage and wastewater management plans (DWMPs) have been introduced to ensure the sustainability of drainage and wastewater management infrastructure and the services it provides to customers and the environment. These plans set out how water and sewerage companies intend to extend, improve and maintain a robust and resilient drainage and wastewater system over the long term. STW's Drainage and Wastewater Management Plan (2023)⁸⁵ takes into consideration assumptions from LPAs, including the Greater Nottingham Councils, on new development coming forward in local plans and ensures adequate investment in wastewater and drainage systems is in place. This includes the strategic allocations set out in the GNSP.
- 6.2.6 The vision for the GNSP sets out the importance of environmentally sensitive development which should consider water quality benefits. Policy 10 (Design and Enhancing Local Identity) and Policy 16 (Blue and Green Infrastructure and Landscape) of the GNSP recognise the important role that blue Infrastructure can play in protecting and improving the water environment in line with the objectives of the WFD. These policies advocate the incorporation of these features into new development to help improve water quality among other benefits. Policy 1 of the GNSP recognises the importance for new development to incorporate Sustainable Drainage Systems (SuDS) where possible to address flood risk but also their ability to improve water quality. Policy 1 indicates that SuDS will be delivered through the subsequent LPA plans.
- 6.2.7 Policy 19 of the GNSP (Developers Contribution Policy) sets out general principles which require development to be supported by necessary infrastructure. Whilst specific details on adequate supply of water, appropriate sewerage and surface water infrastructure are not specified within this policy, these requirements will form part of the necessary infrastructure provision at new development and will be provided by the statutory water supplier in line with the WRMP.

⁸⁵ Severn Trent Water (2023) Drainage and Wastewater Management Plan 2025 – 2050.

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- 6.2.8 The Greater Nottingham Planning Partnership WCS⁸⁶ seeks to ensure that the levels of growth forecast in the GNSP are aligned with the strategies of the relevant water and sewerage provider (STW) so that sufficient resources are available to serve new residential and employment development. The WRMP24 takes into consideration forecast housing growth in the supply area including that forecast within the GNSP.
- 6.2.9 Runoff from roads, roofs and areas of hard standing may not require an EP. These sources of runoff can be managed through adoption of SuDS as required through GNSP Policy 1 and implementation of subsequent local plans.
- 6.2.10 Taking the high-level regulatory water quality protective framework and GNSP policy requirements into consideration, it can be concluded that there will be no adverse impacts on site integrity at the Humber Estuary SPA, Humber Estuary SAC and Humber Estuary Ramsar, or qualifying species using functionally linked watercourses, due to a change in water quality as a result of the GNSP.

⁸⁶ Greater Nottingham Strategic Partnership (2024) Water Cycle Study.

7 Appropriate Assessment – Sherwood Forest ppSPA

7.1 Introduction

7.1.1 Whilst the Sherwood Forest ppSPA is not a designated European site, in line with Natural England’s guidance (see **Chapter 4**), an AA of LSEs has been undertaken to ensure a ‘risk-based’ approach has been taken. The HRA screening process (**Appendix D**) indicates that a number of components of the GNSP have the potential to result in LSEs at the Sherwood Forest ppSPA. Policies with the potential for air quality, recreational and urbanisation impacts are set out in **Table 7.1**.

Table 7.1: Summary of GNSP policies with potential LSEs at Sherwood Forest ppSPA

Policy Number and Name
Vision of Greater Nottingham in 2041
Policy 3: Housing
Policy 5: Employment Provision and Economic Development
Policy 6: Nottingham City Centre
Policy 9: Gypsy and Traveller and Travelling Showpeople
Policy 19: Strategic Allocation Boots Site (Broxtowe)
Policy 20: Strategic Allocation Field Farm, North of Stapleford (Broxtowe)
Policy 21: Strategic Allocation Toton Strategic Location for Growth and Chetwynd Barracks (Broxtowe)
Policy 22: Strategic Allocation Former Bennerley Coal Disposal Point (Broxtowe)
Policy 23: Strategic Allocation Top Wighay Farm (Gedling)
Policy 24: Strategic Allocation Former Stanton Tip (Nottingham City)
Policy 25: Strategic Allocation Broad Marsh (Nottingham City)
Policy 26: Strategic Allocation Melton Road, Edwalton (Rushcliffe)
Policy 27: Strategic Allocation Land North of Bingham (Rushcliffe)
Policy 28: Strategic Allocation Former RAF Newton (Rushcliffe)
Policy 29: Strategic Allocation Former Cotgrave Colliery (Rushcliffe)
Policy 30: Strategic Allocation South of Clifton (Rushcliffe)
Policy 31: Strategic Allocation East of Gamston / North of Tollerton (Rushcliffe)
Policy 32: Strategic Allocation Former Ratcliffe on Soar Power Station (Rushcliffe)

7.2 Air Quality Appropriate Assessment

7.2.1 The following section of the AA focuses on assessing more precisely the ecological impacts of air pollution on nightjar and woodlark populations associated with the Sherwood Forest ppSPA, taking a ‘risk-based’ approach as set out by Natural England.

7.2.2 This assessment follows Natural England’s current guidance and therefore assesses the likely effects to inform a conclusion as to whether an adverse effect on site integrity can be ruled out. The following assessment also draws on the CIEEM guidance following a six-step methodology, which includes a consideration of factors such as:

- The action needed to achieve the conservation objectives for the ppSPA;

- The expected future trend in pollutants of concern (and the scientific reasonableness of any trend);
- The magnitude of any future 'in combination' dose and how it may change the trend; and
- The physical extent of the affected area as a proportion of that interest feature within the European site⁸⁷.

7.2.3 Nitrogen oxides (NO_x) are produced during the combustion processes, partly from nitrogen compounds in fuel, but mostly by a direct combination of atmospheric oxygen and nitrogen in flames⁸⁸. Road transport emissions of NO_x in 2021 were the largest contributor to UK total emissions of NO_x with most emissions related to diesel vehicles⁸⁹. The introduction of catalytic converters has seen an overall reduction in emissions since 1990. NO_x has the potential to impact habitats through direct toxicity and through their contribution to nitrogen deposition.

7.2.4 Ammonia originates from both natural and anthropogenic sources, with the main man-made source being agriculture. Other man-made sources of ammonia include industrial processes and vehicular emissions (from catalyst-equipped petrol vehicles and selective catalytic reduction on light and heavy goods diesel fuelled vehicles). As with NO_x, elevated levels of ammonia can be directly toxic to plants and can also enrich a system with nitrogen causing eutrophication and acidification effects on habitats.

7.2.5 Air Pollution Information System (APIS) describes nitrogen deposition as the 'input of reactive nitrogen from the atmosphere to the biosphere both as gases, dry deposition and in precipitation as wet deposition'⁹⁰. Anthropogenic sources of enhanced reactive nitrogen deposition come from emissions of NO_x and fossil fuel combustion and reduced nitrogen from agricultural sources.

7.2.6 Nitrogen is a major growth nutrient for plants. An increase in nitrogen can be toxic to plants and can lead to eutrophication which can cause species loss and changes in the structure and function of ecosystems. Nitrogen can also cause acidification of soils. Traffic related inputs of NO_x and ammonia have an impact on the rates of nitrogen deposition. Nitrogen deposition rates are habitat specific as different habitats have different tolerances to different levels.

7.2.7 As noted in **Chapter 4**, Natural England's advice⁹¹ indicates that the Sherwood Forest ppSPA is sensitive to 'pollution and/or nutrient enrichment of breeding habitats' which may include nitrogen deposition and acidification due to air pollution triggered by new development.

⁸⁷ CIEEM. January 2021. Paragraph 20. Advisory Note: Ecological Assessment of Air Quality Impacts.

⁸⁸ Air Pollution Information Systems (2017) Pollutants, available at: <http://www.apis.ac.uk/> [Date accessed: 19/02/24].

⁸⁹ National Atmospheric Emissions Inventory. Available at: https://naei.beis.gov.uk/overview/pollutants?pollutant_id=6 [Date accessed: 19/02/24].

⁹⁰ APIS. Nitrogen Deposition. Available at: <http://www.apis.ac.uk/> [Date accessed: 19/02/24].

⁹¹ Natural England (2014) Advice note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region. Available at:

- 7.2.8 Whilst a change in air quality is unlikely to directly affect woodlark and nightjar populations within the Sherwood Forest ppSPA, there is potential for indirect impacts upon their habitat. As set out in **Chapter 4**, woodlark and nightjar rely on a mosaic of open habitats to meet all lifecycle stages with heathland, open woodland, clearings and recently felled coniferous woodland being favoured. The height, cover, variation and composition of vegetation and characteristics of habitat are important to support breeding and successful nesting, rearing of young, concealment from predators and movement along flight lines and roosting.
- 7.2.9 Whilst a small proportion of the ppSPA is underpinned by SSSI designations (see **Figure 4.4**), it is noted that a large proportion of the ppSPA is not. **Tables 4.1** and **4.2** illustrate the sensitivities of woodlark and nightjar supporting habitat to changes in air quality, setting out relevant critical loads and highlighting current exceedances of these critical loads across underpinning SSSIs. Any increase in nitrogen deposition could exacerbate pollution levels and thereby undermine the integrity of the ppSPA and its conservation objectives.
- 7.2.10 Current and future exceedances of critical loads at these underpinning SSSIs may result in changes to the chemical status of habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats. Given the diverse diet of these birds it is unlikely that a change in air quality will affect food availability. However, given their specific nesting requirements, impacts from air pollution upon these habitats has the potential to occur.
- 7.2.11 It is important to gain a detailed understanding of the habitat types within 200m of the road links which may be affected by the GNSP and how these may be used by nightjar and woodlark populations. **Figure 4.5** illustrates road links which are located within 200m of the ppSPA and **Table 4.3** summarises road links where Natural England's screening thresholds were exceeded for a GNSP alone and a GNSP in-combination scenario.

- 7.2.12 **Appendix E** provides a review of ppSPA habitats located within 200m of each road link. This data has been collated through a review of existing publicly available habitat survey data including priority habitat inventory data⁹², the RSPB's Sherwood Forest heathland extent and potential mapping project⁹³ (**Figure 7.2**), information held on Natural England's Designated Sites System Viewer for the underpinning SSSI designations⁹⁴ and a review of aerial photography. It is noted that priority habitat inventory data does not cover the whole area of the ppSPA and there are sections of the ppSPA which are not underpinned by a SSSI designation.
- 7.2.13 As noted in **Section 4.4**, the effects of air pollution are considered unlikely to be significant beyond 200m of each road link. As set out in **Appendix E**, a number of areas, which are located within 200m of a road links where the screening threshold of 1,000 AADT is exceeded, coincide with the Sherwood Forest ppSPA. This habitat is also noted to have the potential to meet the lifecycle stage requirements for woodlark and nightjar - with heathland and woodland (some open in nature and some managed) being present.
- 7.2.14 Other areas within 200m of the road network which are within the ppSPA designation contain dense coniferous and deciduous woodland which is not likely to incorporate the open mosaic habitat required for the lifecycle of these species. A review of previous ecological work undertaken for the area⁹⁵ suggests these dense wooded areas comprise primarily plantation woodland managed on a rotational basis. By its nature, the rotational management of woodland will provide a more open and heterogeneous range of habitats favoured by these species of bird, which will reduce as trees mature and the canopy develops.

⁹² Priority habitat mapping data is a spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance. This replaces Natural England's previous separate BAP habitat inventories. Available at: <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::priority-habitats-inventory-england/about> [Date accessed: 15/03/24].

⁹³RSPB Opendata (2018). The RSPB's Heathland Extent and Potential (HEaP) project mapped all existing lowland heathland in England from aerial photographs. It then identified an inventory of potential opportunities to create new heathland to expand and link existing patches – avoiding significant negative impacts on local economies and culture – July 2018. The HEaP maps are intended to provide a baseline of all existing lowland heathland extent and distribution in England, and to map the potential for its re-creation. It does not aim to replace existing national and local inventories, but rather to support them by filling gaps where they exist and by providing a country scale context for local initiatives. Available at: <https://opendata-rspb.opendata.arcgis.com/datasets/RSPB::heathland-extent-and-potential-heap/explore?location=52.648836%2C-1.841365%2C6.86> [Date accessed: 15/03/24].

⁹⁴Natural England. Designated Site Details. Available at: <https://designatedsites.naturalengland.org.uk/> [Date accessed: 19/02/24].

⁹⁵ LUC (August 2021) Bassetlaw Local Plan Habitat Regulations Assessment – Screening Assessment and Appropriate Assessment. Available at: https://www.bassetlaw.gov.uk/media/6475/hra-report-for-reg-19_summer-2021.pdf [Date accessed: 19/02/24].

- 7.2.15 Felling of the woodland crop will result in the removal of nutrient build up from the environment. The associated management practices of woodland cropping are much more likely to determine habitat suitability when compared to nitrogen deposition and acidification from traffic emissions. In addition, whilst it is noted that woodland is vulnerable to a change in air quality, taller vegetation such as woodland, restricts the dispersal of pollutants in the air from road sources, acting as a buffer and limiting the overall impact.
- 7.2.16 As set out in **Appendix E**, there are a number of areas of heathland habitat within 200m of road links where the 1,000 AADT thresholds are exceeded. These areas of habitat represent approximately 10.02ha of the RSPB mapped 'existing' heathland. Overall, within the wider area of the ppSPA the RSPB has mapped 478.6ha of existing heathland.
- 7.2.17 Heathland is more sensitive to the impacts of increased traffic related emissions. The RSPB IBA factsheet for Sherwood Forest notes that woodlark and nightjar are highly sensitive to human intrusions and disturbance. These areas of heathland are located in close proximity to key road links, and in a number of cases at junctions / roundabouts. Therefore, the use of these areas by woodlark and nightjar are likely to be unfavourable due to traffic related noise, vibration, and lighting levels.
- 7.2.18 Review of RSPB Heathland Extent and Potential (HEaP) mapping data indicates that there is a larger area of suitable existing heathland habitat beyond 200m of road links which exceed the 1,000 AADT screening threshold which would provide a less disturbed environment for woodlark and nightjar. In addition, as part of the Sherwood Forest Futurescapes project⁹⁶, the RSPB has mapped areas for potential re-creation of heathland habitat which covers the majority of the ppSPA and also the wider area beyond this designation. This project aims to expand and link-up these vital areas of habitat to enable wildlife to move more freely across the landscape. Projects such as this which promote landscape scale habitat management and enhancement will have a large impact upon woodlark and nightjar populations making populations more robust to localised impacts.
- 7.2.19 Local contributions to nitrogen deposition are provided on APIS for those SSSIs which underpin areas of the ppSPA (see **Figure 7.3**)⁹⁷. This data suggests that road traffic contributes a small proportion to overall nitrogen deposition at these SSSIs when compared to fertiliser application and livestock. For example, at Clumber Park SSSI, road transport represents an 8.89% contribution, whilst together fertiliser application and livestock represent a 49.80% contribution.

⁹⁶ Policy Commons (2014) Sherwood Forest C D h E U C r L. Available at: <https://policycommons.net/artifacts/1718702/sherwood-forest-c-d-h-e-u-c-r-l/2450259/> [Date accessed: 20/02/24].

⁹⁷ APIS (2016) APIS Report. Available at: <https://www.apis.ac.uk/src/> [Date accessed: 19/02/24].

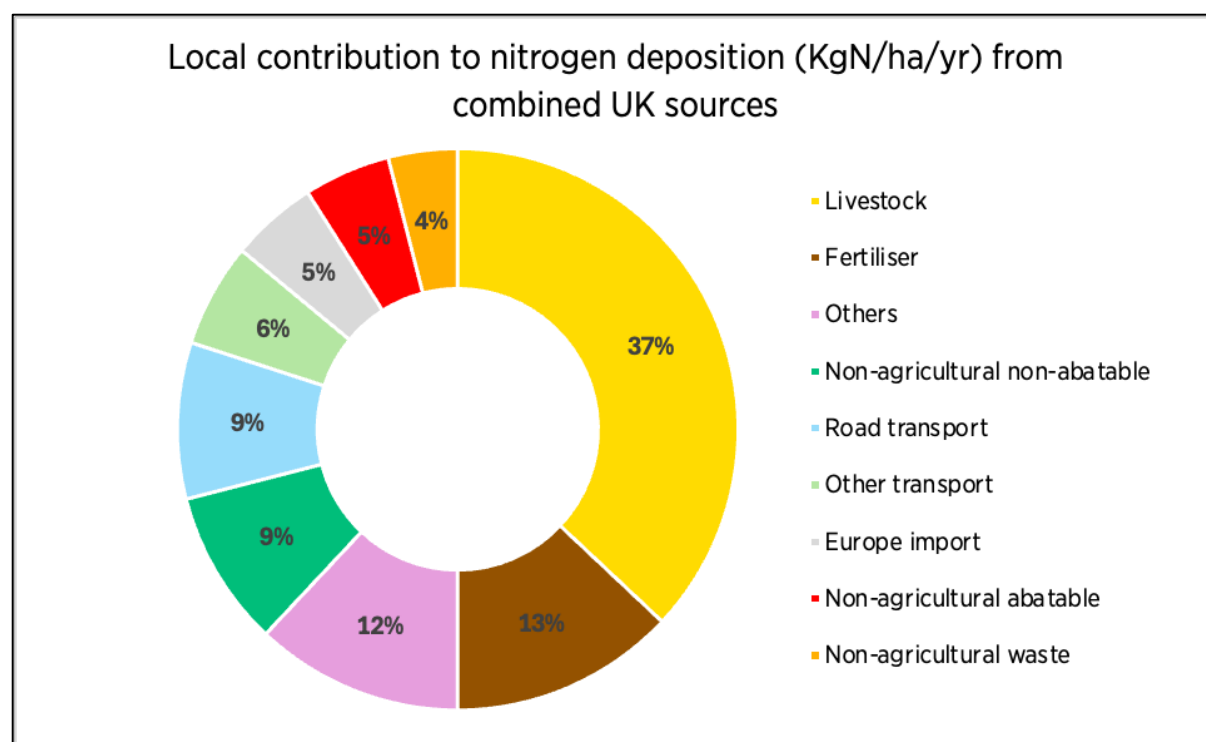


Figure 7.1: Local contribution to nitrogen deposition combined UK sources – (using Clumber Park SSSI data from APIS)⁹⁸

7.2.20 In addition to traffic related air quality impacts, air quality also has the potential to be deteriorated at European sites through industrial point sources of pollution. Diffuse traffic sources of pollution and point sources of pollution have the potential to act in-combination to cause air pollution. It is recognised that the following allocations trigger industrial and manufacturing related development.

- Boots Site (Broxtowe)
- Toton Strategic Location for Growth and Chetwynd Barracks (Broxtowe)
- Top Wighay Farm (Gedling)
- Former Stanton Tip, Hempshill Vale (Nottingham City)
- Land North of Bingham (Rushcliffe)
- Former RAF newton (Rushcliffe)
- Former Cotgrave Colliery (Rushcliffe)
- South of Clifton (Rushcliffe)
- Strategic Allocation East of Gamston / North of Tollerton (Rushcliffe)
- Rushcliffe on Soar Power Station (Rushcliffe)

7.2.21 Policy wording for the above allocations requires development to '*Ensure that at the planning application stage planning permission will not be granted for manufacturing uses which would have an adverse air quality impact upon the site integrity of any European site for nature conservation including the Sherwood Forest ppSPA (either alone or in combination with other pollution sources such as traffic)*'.

⁹⁸ Air Pollution Information Service. Available at: <https://www.apis.ac.uk/> [Date accessed: 19/02/24].

- 7.2.22 This will reflect the hierarchical nature of plan making and is compliant with case law which requires the Competent Authority to be satisfied that mitigation solutions can be achieved in practice^{99,100}, whilst recognising the multi-staged planning and approval procedural approach to plan making¹⁰¹.
- 7.2.23 Policies set out in the GNSP (**Table 7.2**) incorporate measures for sustainable transport and a requirement to encourage a modal shift and promote active transport options. These will have a positive impact upon air quality by discouraging the private car and encouraging use of sustainable forms of transport, the electric car and active travel. There are also a number of national initiatives to reduce vehicle related emissions, such as the Government's commitment for all new cars to be zero emission by 2035.

Table 7.2: Summary of GNSP policies that include air quality mitigation

Policy name	Mitigation provided by GNSP policy
Draft Objectives: Spatial Objectives.	The GNSP objectives aim to address climate change and also promote the use of sustainable transport systems reducing the need to travel and therefore improving air quality.
Policy 1: Climate Change	This policy addresses climate change and sustainable growth and promotes active travel options which will enhance air quality.
Policy 6: Nottingham City Centre	This policy requires new development to reduce air pollution and provide mitigation to improve air quality.
Policy 10: Design and Enhancing Local Identify	This policy looks at high quality sustainable designs for new development.
Policy 14: Managing Travel Demand	This policy aims to reduce the dominance of motor vehicles and support active travel through the creation of walking, cycling and public transport networks, which will assist in improving air quality.
Policy 15: Transport Infrastructure Priorities	This policy promote sustainable and active forms of transport which will assist in improving air quality.
Policy 16: Blue and Green Infrastructure and Landscape	This policy aims to deliver, conserve, and enhance GI. Retention of GI has the potential to assist in the improvement of air quality locally.
Policy 17: Biodiversity	Policy 17 requires designated international, national and local sites of biological or geological importance for nature conservation to be mapped and safeguarded in development plans, and protected in line with the established hierarchy of sites and their respective legislation. It recognises that whilst there are no European sites within the GNSP area,

⁹⁹ Ltd (NANT Ltd) v Suffolk Coastal District Council, Court of Appeal, 17 February 2015. Available at: <https://www.eastsuffolk.gov.uk/assets/Planning/Suffolk-Coastal-Local-Plan/Core-Strategy-and-DMP/No-Adastral-New-Town-Ltd-v-SCDC.pdf> [Date accessed: 19/02/24].

¹⁰⁰ Opinion of Advocate General Kokott delivered on 9 June 2005. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland. Failure of a Member State to fulfil obligations - Directive 92/43/EEC - Conservation of natural habitats - Wild fauna and flora. Case C-6/04. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62004CC0006> [Date accessed: 19/02/24].

¹⁰¹ R (o a o Devon Wildlife Trust) v. Teignbridge DC [2015] EWHC 2159 (Admin). 28 July 2015. Available at: <https://vlex.co.uk/vid/r-devon-wildlife-trust-792693573> [Date accessed: 19/02/24].

Policy name	Mitigation provided by GNSP policy
	some areas of woodland to the north of the plan area, and extending into Gedling Borough, have been identified as a ppSPA, due to the presence of breeding nightjar and woodlark populations. Whilst this is not a formal designation, it does mean that these areas are under consideration by the Joint Nature Conservation Committee and may be declared a potential Special Protection Area in due course. This policy commits the GNSP and Infrastructure Delivery Plan to take a precautionary approach and treat the ppSPA as a confirmed European Site (following Natural England Advice).
Policy 19 Strategic Allocation Boots Site (Broxtowe and Nottingham City)	This policy includes proposals which safeguard air quality and groundwater resources

7.2.24 The Nottinghamshire Local Transport Plan covers the whole of the county and will run until 31 March 2026¹⁰². It aims to encourage healthy and sustainable travel options with a focus on public transport provision, promoting and facilitating active and healthy travel linked to the GI network. It also aims to provide transport related air quality improvements over the plan period.

7.2.25 The following factors have been taken into consideration in this section of the AA:

- GNSP policy wording to encourage a modal shift, promote active forms of transport and encourage uptake of electric vehicles;
- GNSP strategic policy wording in respect of air quality;
- National and county policy initiatives to encourage a modal shift, electric vehicles and active transport;
- Management of woodland habitat as a rotational crop;
- Extent and distribution of heathland habitat and location in close proximity to sources of disturbance such as road networks; and
- Future projects to enhance heathland habitat across the wider area.

7.2.26 Taking these into consideration it can be concluded that there will be no adverse impacts on site integrity at the Sherwood Forest ppSPA due to a change in air quality as a result of the GNSP.

¹⁰² Nottinghamshire County Council. Local Transport Plan. Available at: <https://www.nottinghamshire.gov.uk/transport/public-transport/plans-strategies-policies/local-transport-plan> [Date accessed: 19/02/24].

7.3 Recreational Pressure Appropriate Assessment

- 7.3.1 The following section of the AA focuses on assessing more precisely the ecological impacts of increased recreational pressure upon nightjar and woodlark populations associated with the Sherwood Forest ppSPA, taking a 'risk-based' approach as required by Natural England.
- 7.3.2 As noted in **Chapter 4**, Natural England's advice¹⁰³ indicates that the Sherwood Forest ppSPA is vulnerable to 'disturbance to breeding birds from people, their pets and traffic and also loss, fragmentation and/or damage to breeding and/or feeding habitat'. These direct and indirect impacts may be caused by a number of factors including increased recreational pressure and dog walking.
- 7.3.3 The Sherwood Forest ppSPA is underpinned by a number of designations (**Chapter 4**) including seven SSSIs (see **Figure 4.4**) and a number of LNRs. Given the size, extent, and distribution of the ppSPA, recreational access varies across the site. There are no SSSIs which coincide with the proportion of the ppSPA located within the GNSP area.
- 7.3.4 There are two SSSI locations within the Sherwood Forest ppSPA that are owned and managed by Nottinghamshire Wildlife Trust; these sites are the Rainworth Heath SSSI, located approximately 2.9km from the GNSP area, and Strawberry Hill Heath SSSI, located approximately 3.9km from the GNSP area. Both SSSIs are open access but neither have designated parking available^{104, 105}.
- 7.3.5 The northern section of the ppSPA contains Clumber Park Country Park, which includes the whole of the smaller Clumber Park SSSI designation and the National Trust's Clumber Park site. This area provides walking, cycling and horse-riding trails promoted by the National Trust and long-distance routes such as the Robin Hood Way. There are also visitor facilities provided such as parking, toilets, a shop, cafes, and cycle hub.
- 7.3.6 In the centre of the ppSPA are the Forestry Commission sites; the Sherwood Pines Forest Park and Birklands Sherwood Forest, both of which are open access. They provide visitor facilities, a Go Ape, a number of activity and walking trails, play areas, bike hire, wild running, mountain biking trails and camping options. The area to the southwest of these sites contains a smaller number of Rights of Way (PRoW).

¹⁰³ Natural England (2014) Advice note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region. Available at: <https://www.mansfield.gov.uk/downloads/file/329/natural-england-s-advice-notes-on-the-sherwood-ppspa-2014> [Date accessed: 19/02/24].

¹⁰⁴ Nottinghamshire Wildlife Trust. Rainworth Heath. Available at: <https://www.nottinghamshirewildlife.org/nature-reserves/rainworth-heath> [Date accessed: 22/02/24].

¹⁰⁵ Nottingham Wildlife Trust. Strawberry Hill Heath. Available at: <https://www.nottinghamshirewildlife.org/nature-reserves/strawberry-hill-heath> [Date accessed: 22/02/2024].

- 7.3.7 As noted in **Section 4.4**, as part of the Bassetlaw Local Plan Review, RIAs were undertaken at two areas which form a small part of the overall ppSPA. These include the Birklands & Bilhaugh SAC/Sherwood Forest NNR¹⁰⁶ and Clumber Park SSSI¹⁰⁷. Accessibility across the rest of the ppSPA area varies in nature and has not been subject to visitor surveys.
- 7.3.8 The Birklands and Bilhaugh SAC/Sherwood Forest NNR and Clumber Park SSSI have a large visitor draw. Other sites, such as those managed by the Forestry Commission are also likely to draw visitors from a wider area. Public access is not possible or limited in others and likely to have a much smaller draw for visitors.
- 7.3.9 Habitats recorded as part of the RIA within the Birklands and Bilhaugh SAC included a mix of broadleaved woodland (ancient oak woodland), broadleaved woodland (birch high forest) and acid grassland. Within the northern section of the Sherwood Forest NNR, the RIA recorded areas of mixed heathland and shrub with acid grassland, scattered trees, and mixed plantation woodland. Habitats recorded in the RIA at Clumber Park SSSI included a range of habitats such as semi-natural broad-leaved woodland, plantation woodland, heathland and grassland, marginal vegetation, and ornamental plantings. Recreational impacts observed on these habitats included loss of ground flora and soil compaction, damage to exposed roots (including those of veteran trees), abrasion to tree limbs and removal of deadwood for den building and eutrophication along path edges. Recreational impacts at other areas of the ppSPA have not been subject to a baseline survey. The RIAs however give a good indication of the types of visitors impacts which may be experienced elsewhere across the ppSPA to varying levels depending on the level of access.
- 7.3.10 The bird surveys undertaken as part of these RIA indicated that in the Clumber Park SSSI, nightjar appear to favour less disturbed areas of the site, whilst woodlark is more widely distributed and therefore vulnerable to increased recreational pressure. At the NNR and SAC, nightjar were shown to also favour less well used parts of the RSPB Reserve and the edges of the site, whilst woodlark are distributed across the two western thirds of the RSPB Reserve and showed a preference for fenced enclosures. The RIAs indicate that these birds are sensitive to both direct recreational disturbance from people and dog walking and also indirect recreational impacts upon their habitat. Bird disturbance surveys have not been undertaken at other areas of the ppSPA, but birds are likely to respond in a similar manner to those surveyed as part of the RIAs.

¹⁰⁶ Saunders, P., Lake, S. & Liley, D. (2021). Birklands & Bilhaugh SAC Recreation Impact Assessment Report- a report prepared for Bassetlaw District Council in conjunction with Newark and Sherwood District Council. Available at: <https://www.bassetlaw.gov.uk/media/6691/cd-016-birklandsbilhaugh-sac-draft-recreation-impact-assessment-report.pdf> [Date accessed:19/02/24].

¹⁰⁷ Saunders, P., Lake, S. & Liley, D. (2021). Clumber Park SSSI Recreation Impact Assessment Report- a report prepared for Bassetlaw District Council in conjunction with Newark and Sherwood District Council. Available at: https://www.bassetlaw.gov.uk/media/6838/622_clumber_park_recreation_impact_assessment_report_080322_final.pdf [Date accessed:19/02/24].

- 7.3.11 Bird survey data from the NBGRC (**Figure 4.3**) illustrates that nightjar and woodlark have been recorded within six out of the seven SSSI designated sites, including; Clumber Park SSSI, Strawberry Hill Heaths SSSI, Sherwood Forest Golf Course SSSI, Thoresby Lake SSSI, Birkland and Bilhaugh SSSI and the Birklands West and Ollerton Corner SSSI. Bird data was also recorded within the GNSP area, but outside the ppSPA designation, within Gedling and Rushcliffe.
- 7.3.12 The visitor survey undertaken as part of the RIA highlighted the types of visits and activities undertaken and visitor behaviour at both the Clumber Park SSSI, Sherwood Forest NNR and Birklands & Bilhaugh SAC¹⁰⁸. The most frequently recorded activities were shown to be walking and dog walking, with bird / wildlife watching undertaken at the SAC and cycling / mountain biking undertaken at the SSSI. Dog walkers were the group who visited both sites the most frequently. Over three quarters of visitors arrived at the SAC and four fifths at the SSSI by car, with the remainder travelling to each site by foot. Proximity to home was the most commonly given reason for site choice. Other reasons given for visiting were the Major Oak, local knowledge of the site, familiarity, the environment for dogs, scenery, and wildlife interest.
- 7.3.13 No allocations are located within the 8.9km Birklands and Bilhaugh ZOI (**Figure 3.2**), and no allocations are located within the 10km SSSI IRZ area for Clumber Park SSSI (**Figure 4.6**). It is noted that these ZOI do not cover the whole of the ppSPA and, given the varying levels of access across the ppSPA, cannot be used as a ppSPA wide recreational ZOI. Each component of the ppSPA must therefore be assessed on the basis of its individual visitor draw, current management and recreational provisions both at each site and in the surrounding area.
- 7.3.14 Whilst allocations set out in the GNSP may not individually have an adverse impact upon the ppSPA due to increased recreational pressure, when taken together cumulatively, and in-combination with growth in neighbouring LPA areas, there is the potential for adverse direct and indirect impacts upon ppSPA populations of nightjar and woodlark and their habitat.
- 7.3.15 Based on the work undertaken as part of the RIAs, recreational impacts, where access is possible, are likely to comprise damage to habitats with indirect impacts upon birds and disturbance to the birds themselves. Disturbance has the potential to adversely impact upon these species through a change in feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites, increased predation of eggs and chicks and desertion of supporting habitat. Effects may occur on habitat both within and outside of the ppSPA boundary. Such impacts may have a knock-on effect upon the successful nesting, rearing, feeding and/or roosting of these bird species. Sources of disturbance may also reduce the availability of suitable habitat through displacement and contraction of habitats.

¹⁰⁸ It is noted that the visitor survey undertaken for the RIA covered the Sherwood Forest National Nature Reserve (which comprises a large proportion of Budby South Forest RSPB Reserve) in addition to the SAC.

- 7.3.16 The southern components of the Sherwood Forest ppSPA which are located with the northern GNSP area, in the borough of Gedling, and immediately adjacent to its boundary are illustrated in **Figure 4.1**. These components of the ppSPA coincide with the following woodland blocks:
- **Annesley Park Forest and Wighay Wood:** No PRoW or open access land present. There are no formal car parks at this location. The northern section of the ppSPA at Annesley Park Forest is part of the Annesley Hall Registered Park and Garden, which has historic connections to famous local authors such as Lord Byron.
 - **Notts Golf Course:** There are no PRoW or open access land at this component of the ppSPA.
 - **Normanshill Wood, Harlow Wood and Thieves Wood:** The long-distance Robin Hood Way passes in the west to east direction through this component of the ppSPA. There is a PRoW running in a north south direction along the eastern boundary of Harlow Wood and a further PRoW which connects to the Robin Hood Way in Thieves Wood. There are also a number of forestry tracks which may be used informally. Thieves Wood is owned by Forestry England and provides picnic areas and a refreshment van. Walking routes are promoted within the woodland on the Forestry England website. There are two formal car parks at this location.
 - **Bildworth Woods, Sansom Woods, Watchwood Woods and Haywood Oaks Farm Woodland:** All four woodland components at this location are open access. The Robin Hood Way runs through Bildworth Woods, with a number of other PRoW throughout all woodland blocks. There are five formal car parks at these sections of the ppSPA. Bildworth Woods is a Forestry England site with walking and equestrian routes which are promoted on the Forestry England website. There are also picnic areas and a refreshment cabin.
 - **Cuckney Hay Woods, Oakfields Plantation and Park House Plantations:** This areas of woodland are managed by Forestry England and are crossed by a number of PRoW. There are no car parks or facilities within or close to these woodland blocks.
- 7.3.17 To the north of these woodland components lies the **Forestry England Sherwood Pines Forest Park** element of the ppSPA which contains a number of promoted recreational activities as outlined in **paragraph 7.3.6**. Beyond Sherwood Pines Forest Park, two components of woodland, **Cavendish Wood and Peafield New Plantation**, are also part of the ppSPA. Both woodland blocks are crossed by a number of PRoW.
- 7.3.18 The Sherwood Forest NNR is located within 15km of the GNSP area. As noted in **paragraph 7.3.13**, no allocations are located within the 8.9km Birklands and Bilhaugh SAC ZOI and therefore recreational impacts are unlikely (**Figure 3.2**).

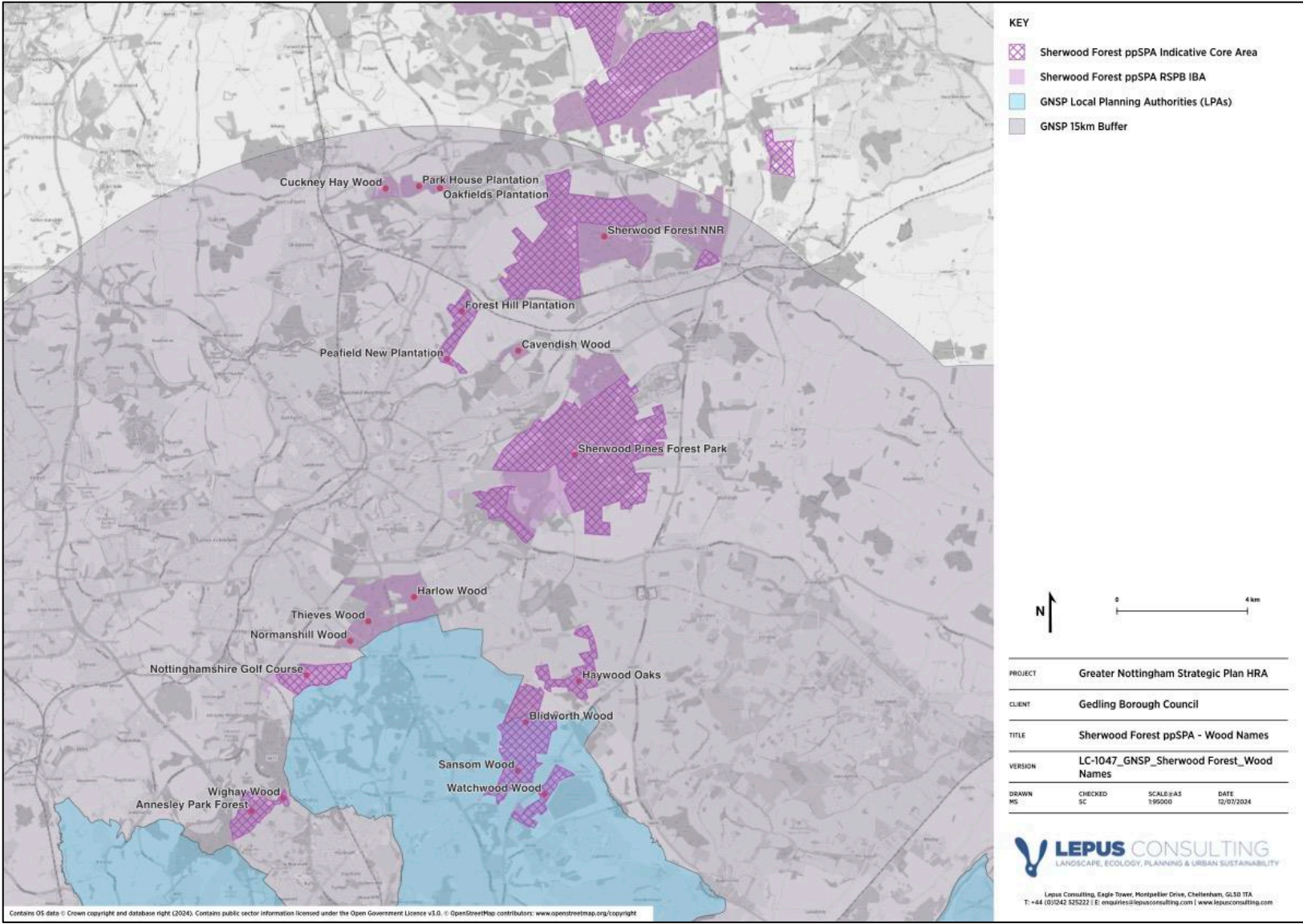


Figure 7.2: Map to show woodland names of Sherwood Forest ppSPA comments within 15km of GNSP area

- 7.3.19 All other components of the ppSPA which lie further to the north are located more than 15km from the closest GNSP allocation and are therefore not considered further in terms of recreational impacts.
- 7.3.20 A strategic recreational approach to mitigation has not been developed for the ppSPA and it is noted that recreational accessibility and visitor data has not been collated for all parts of the ppSPA.
- 7.3.21 All GNSP strategic allocations which include residential development however have the potential to have a cumulative recreational impact upon the ppSPA when considered together and an in-combination effect when considered alongside neighbouring LPA development. Recreational impacts are likely to include disturbance to woodlark and nightjar and indirect effects upon their supporting habitat.
- 7.3.22 It is anticipated that the policies listed in **Table 7.3**, which form part of the GNSP, will have a positive impact and contribute towards the mitigation of recreational impacts from population growth at the ppSPA. These policies include requirements to protect, enhance and create new greenspaces within strategic allocations made in the GNSP which allocate residential development.

Table 7.3: Summary of GNSP policies that protect, enhance and create greenspaces for new growth set out in the GNSP

Policy name	Policy wording in respect of protecting, enhancing and creating greenspaces
Policy 4: Green Belt	This policy protects the Green Belt against inappropriate development.
Policy 16: Blue and Green Infrastructure and Landscape	This policy aims to deliver, conserve, and enhance GI. It contains case-specific policy wording intended to avoid or reduce harmful effects on the ppSPA.
Policy 17 Biodiversity and the Ecological Network	<p>This policy aims to protect, restore, expand and enhance the ecological network of designated, and non-designated sites, and priority habitats. It sets out measures to ensure that blue and green infrastructure also benefits biodiversity, ecological networks and ecosystem services. It also recognises the precautionary approach which must be taken at the ppSPA.</p> <p>Policy 17 states that '<i>The Infrastructure Delivery Plan sets out requirements for a range of mitigation measures as recommended in the Habitats Regulation Assessment</i>'. This plan notes that '<i>for strategic and non-strategic development adjoining the sub-regional centre of Hucknall, any development within 400m of the ppSPA should include appropriate mitigation measures which may include the incorporation of buffers, screens, swales, bunds, cat deterrent planting and landscaping, fencing, directional lighting, and low noise emitting equipment among other solutions. Best practice techniques to minimise lighting, noise standards and quiet construction techniques may also be used to minimise impacts upon breeding birds. In addition, the timing of works should be scheduled to avoid the sensitive bird breeding season</i>'.</p>

Policy name	Policy wording in respect of protecting, enhancing and creating greenspaces
Policy 19 Strategic Allocation Boots Site (Broxtowe)	This policy requires the retention and creation of areas of semi-natural habitat adjacent to Beeston Canal and improvements to on-site open space provision and links to existing open space/green infrastructure.
Policy 20 Strategic Allocation Field Farm, North of Stapleford (Broxtowe)	This policy requires the retention of existing mature trees, hedgerows and grass verges and green infrastructure in between areas of new development.
Policy 21 Strategic Allocation Toton Strategic Location for Growth and Chetwynd Barracks (Broxtowe)	At Toton this policy requires the provision of multi-functional blue and green infrastructure corridors across various parts of the site, including along the southern boundary and retention of existing mature trees, hedgerows and grass verges. At Chetwynd Barracks this policy requires the retention of existing mature trees, hedgerows and grass verges and Hobgoblin Wood. It also requires that the management of woodland, green infrastructure and open spaces be secured in perpetuity for both locations.
Policy 23 Strategic Allocation Top Wighay Farm (Gedling)	This policy requires the retention and enhancement of existing habitats, including the Local Wildlife Site (LWS) (Joe's Wood) and the creation and enhancement of open space and green infrastructure which links to the wider Green Infrastructure network including National Cycle Route 6 (Bestwood Park to Newstead Blue Green Infrastructure Corridor). It also requires the protection of the historic water course which bisects the eastern part of the site which feeds into Linby Docks and the creation of significant Green Infrastructure areas and buffers, particularly on the south eastern boundaries of the site.
Policy 24 Strategic Allocation Former Stanton Tip (Nottingham City)	This policy requires the retention and enhancement of existing habitats, including the LWS and creation of new areas to improve biodiversity and linkages to the River Leen corridor.
Policy 25 Strategic Allocation Broad Marsh (Nottingham City)	This policy places a requirement on development to include the creation and enhancement of open space and green infrastructure with provision of a box park.
Policy 26 Strategic Allocation Melton Road, Edwalton (Rushcliffe)	This policy requires the creation and enhancement of open space and green infrastructure which links to the wider Green Infrastructure network and provides for biodiversity enhancements for Sharphill Wood and provision of a community park facility.
Policy 27 Strategic Allocation Land North of Bingham (Rushcliffe)	This policy requires the creation and enhancement of open space and green infrastructure which links to the wider green infrastructure network and the provision of a community park to include Parsons Hill.
Policy 28 Strategic Allocation Former RAF Newton (Rushcliffe)	This policy requires the creation and enhancement of open space and green infrastructure which links to the wider green infrastructure network and implementation of a landscape and ecology management plan.

Policy name	Policy wording in respect of protecting, enhancing and creating greenspaces
Policy 29 Strategic Allocation Former Cotgrave Colliery (Rushcliffe)	This policy requires the creation and enhancement of open space and green infrastructure which links to the wider green infrastructure network and the creation of landscape buffers between the proposed development and the surrounding area. It also requires the protection of the Grantham Canal corridor.
Policy 30 Strategic Allocation South of Clifton (Rushcliffe)	This policy requires the creation and enhancement of open space and green infrastructure including Green Infrastructure areas and buffers. It also requires green corridors to be created through the site linking feature such as the Heart Leas and Drift Lane plantations.
Policy 31 Strategic Allocation East of Gamston / North of Tollerton (Rushcliffe)	This policy requires the creation and enhancement of open space and green infrastructure which links to the wider green infrastructure network and the creation of significant Green Infrastructure areas and buffers, particularly on the southern and northern boundaries. .

- 7.3.23 As identified in **Table 7.3**, a number of the residential strategic allocation policies contain wording which require the retention, creation and enhancement of open space and GI to link to the wider GI network both on and off-site. GI requirements promoted through Policy 16 (see **Table 7.3**) also have the advantage of providing a range of other functions such as providing multiple benefits for wildlife, improving quality of life and water quality and flood risk, health and wellbeing, recreation, access to nature and adaptation to climate change. Policy 17 requires designated international, national and local sites of biological or geological importance for nature conservation to be mapped and safeguarded in development plans, and protected in line with the established hierarchy of sites and their respective legislation. It recognises the risk-based approach to be taken at the Sherwood Forest ppSPA.
- 7.3.24 The closest strategic allocation which includes residential development to the ppSPA is Top Wighay Farm, which allocates 1,515 dwellings, and is located approximately 185m to the east of the closest component of the ppSPA (Annesley Park Forest and Wighay Wood).
- 7.3.25 This strategic allocation extends to 87.18ha and comprises a consented area which has outline planning permission (2020/0050) which was granted on 25th March 2022 and covers 40.35 ha, and an extension to the consented area covering a further 46.83ha. The outline planning permission has been granted for mixed-use development comprising; 805 homes, land for employment purposes (up to 49,500m² of E(g)(i) E(g)(ii) and B8 uses), a local centre of not more than 2,800 square metres, a 1.5 form entry primary school and associated infrastructure, open space and landscaping. Policy 24, Strategic Allocation Top Wighay Farm notes that development must allow for "*provision of amenity open space (to include retention of the Local Wildlife Site Joe's Wood), allotments, playing pitches and children's play facilities*". This wording will ensure that recreational impacts are directed away from the ppSPA and instead to an appropriate provision.

- 7.3.26 A shadow HRA was undertaken in 2020¹⁰⁹ to support the consented area of this strategic allocation with outline planning permission. Mitigation set out in the shadow HRA requires a suitable public open space provision be provided on the site. This includes an area of approximately 11.56ha (subject to detailed plans) and circular walking routes of between 1.6-2km. It is noted that the closest component of the ppSPA (Annesley Park Forest and Wighay Wood) is not directly connected to this allocation through the PRoW network. Therefore this component of the ppSPA is not accessible to the public (see **paragraph 7.3.16**) and it is unlikely that there will be recreational impacts on this component from development at Top Wighay Farm or from any other allocation in the GNSP.
- 7.3.27 All other strategic residential allocations are located further to the south of the ppSPA, and whilst individually are unlikely to increase recreational pressure upon the ppSPA, may in-combination have a recreational impact at components of the ppSPA where public access is possible, including:
- Normanshill Wood, Harlow Wood and Thieves Wood
 - Bildworth Woods, Sansom Woods, Watchwood Woods and Haywood Oaks Farm Woodland
 - Forestry England Sherwood Pines Forest Park
 - Cavendish Wood and Peafield New Plantation
- 7.3.28 As set out in **Table 7.3**, all strategic allocations which allocate residential development contain wording which ensures sufficient open amenity / green space is provided and which is suitable for the level of development proposed. As with Top Wighay Farm, this will ensure that recreational impacts are directed away from the ppSPA and instead directed to an appropriate provision. It is also noted that all other allocations are separated from the ppSPA by transport infrastructure and urban development with the majority being located to the south and east of Nottingham.
- 7.3.29 Taking into consideration access to and facilities at each component of the ppSPA, policy wording secured through the GNSP and the scale and location of development, it can be concluded that there will be no adverse impact on site integrity from increased recreational pressure alone or in-combination on the Sherwood Forest ppSPA.

¹⁰⁹ RammSanderson (2020) Shadow Habitat Regulations Assessment: Top Wighay Farm, Hucknall.

7.4 Urbanisation Effects Appropriate Assessment

- 7.4.1 Urbanisation effects often include cat predation of ground nesting birds, lighting (illumination), fly tipping, noise, and vandalism. Urbanisation effects can result from all types of development set out in the GNSP (residential, gypsy and traveller and employment). As noted in **Section 4.4**, commonly applied urbanisation zones of influence extend around 400m from the edge of a designation as this reflects likely impacts from pets (e.g. cat predation), the distance from which people access a site on foot and a precautionary distance for noise and visual mitigation. An example of this is the Thames Basin Heaths SPA Delivery Framework¹¹⁰ which has established a 400m zone where development may not take place.
- 7.4.2 Natural England's advice¹¹¹ requires the assessment of impacts upon the ppSPA to include a consideration of:
- Disturbance to breeding birds from people, their pets and traffic;
 - Bird mortality arising from domestic pets and/or predatory mammals and birds; and
 - Bird mortality arising from road traffic and/or wind turbines.
- 7.4.3 Woodlark and nightjar, as ground nesting birds, are particularly vulnerable to predation from domestic pets (such as cats), and as they feed predominantly at dusk and dawn¹¹² they are vulnerable to light disturbance from road traffic and also sensitive to sources of noise and vibration¹¹³.
- 7.4.4 Disturbance in these forms has the potential to adversely impact upon woodlark and nightjar through a change in feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites, increased predation of eggs and chicks and desertion of supporting habitat. Effects may occur on habitat both within and outside (functionally linked habitat) of the ppSPA boundary. Such impacts may have a knock-on effect upon the successful nesting, rearing, feeding and/or roosting of these bird species. Sources of disturbance may also reduce the availability of suitable habitat through displacement and contraction of habitats.

¹¹⁰ Thames Basin Heaths Joint Strategic Partnership Board (2009). Thames Basin Heaths SPA Delivery Framework. <https://www.bracknell-forest.gov.uk/sites/default/files/2021-08/thames-basin-heaths-spa-delivery-framework.pdf> [Date accessed: 19/02/24].

¹¹¹ Natural England (2014) Advice note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region. Available at: <https://www.mansfield.gov.uk/downloads/file/329/natural-england-s-advice-notes-on-the-sherwood-ppspa-2014> [Date accessed: 19/02/24].

¹¹² University Of East Anglia. Woodlark and Nightjar Recreational Disturbance and Nest Predator Study 2008 and 2009 Final report to Breckland District Council. Available at: https://www.breckland.gov.uk/media/1968/Birds-Woodlark-and-Nightjar-Recreation-Distribution-and-Nest-Predator-Study/pdf/UEA_Report_to_Breckland_FINAL_09-2010.pdf [Date accessed: 19/02/24].

¹¹³ Natural England (2016) Thames Basin Heaths SPA Supplementary Advice. [Date accessed: Available at: <http://publications.naturalengland.org.uk/file/4590853229117440> [Date accessed: 19/02/24].

- 7.4.5 Top Wighay Farm, which allocates 1,515 dwellings and 6.52ha of employment land, is located within 400m of the ppSPA. approximately 185m to its east as illustrated in **Figure 7.3**. It is therefore necessary to ensure that operational and construction related noise, visual and lighting proposals and cat predation do not have a disturbance impact upon woodlark and nightjar populations. No other allocations set out in the GNSP are situated within 400m of the ppSPA.
- 7.4.6 It is noted that Top Wighay Farm currently comprises agricultural land with hedgerows. It does not support habitat features which would support woodlark and nightjar populations and therefore is not likely to contain functionally linked habitat.
- 7.4.7 All other strategic allocations are located significantly further south of the ppSPA (more than 5,000m) and are separated from the ppSPA by residential areas, employment areas, open farmland and road / rail infrastructure. However, as illustrated in **Figure 4.3**, data received from the NBGRC indicates that records of woodlark and nightjar have been recorded further south than the ppSPA's designation boundary. A review of mapping data indicates that no allocations coincide with any RSPB existing heathland habitat or woodland or heathland priority habitat mapping. With the exception of the Former Bennerley Coal Disposal Point, Field Farm and Former Stanton Tip sites, all allocations comprise built up or arable land which is unlikely to be suitable for woodlark and nightjar. A review of aerial photography indicates that the Former Bennerley Coal Disposal Point, Field Farm and Former Stanton Tip allocations contain small areas of scrub and woodland within their site boundaries which may provide suitable habitat for these species of bird. However, mapping data also indicates that these allocations are surrounding by residential areas, employment development and road / rail infrastructure and are not linked to the ppSPA. As such, they are unlikely to provide suitable functionally linked bird habitat.

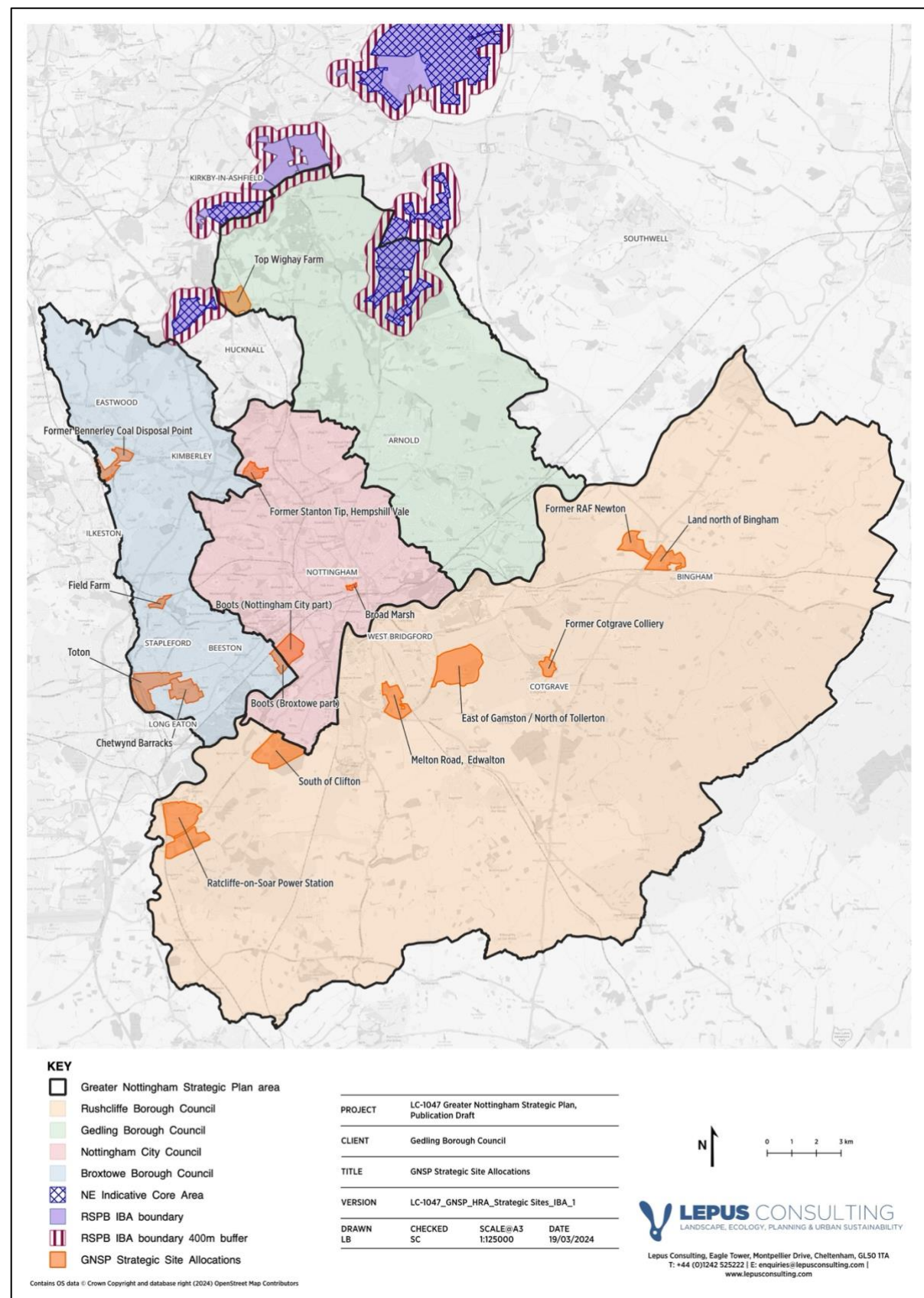


Figure 7.3: Map to show location of GNSP strategic allocations and a 400m buffer around Sherwood Forest ppSPA boundary

Cat Predation

- 7.4.8 Domestic cats are a threat to biodiversity¹¹⁴ and have been the subject of numerous studies in recent years. Cats are opportunistic hunters and pose primary threats to small mammals, reptiles, and birds in the UK^{115,116}. Domestic cats have similar or higher prey numbers per month when compared to wild carnivores. The ecological effects of cat predation are amplified by the high density of cats in housing developments. Therefore, cat behaviour extends the ecological footprint of developments beyond their proposed boundaries¹¹⁷.
- 7.4.9 The most recent comprehensive study on domestic cat ranges and their ecological impact revealed that 75% of cats utilised disturbed habitat¹¹⁸, with their ranges mainly concentrated within 100m of their homes.
- 7.4.10 Earlier studies on domestic cat ranges showed that cats prefer garden habitats, even when there are green spaces and natural habitats nearby¹¹⁹. Additionally, a number of studies found no relationship between natural habitat availability and cat range^{120,121}. Cats living in peri-urban areas with more green spaces were also shown to have a larger predation range (urban = 79m; suburban = 141m; peri-urban = 148m; maximum 278m)¹²².
- 7.4.11 A study in 2008 found that the maximum linear distance for cat range is 300m¹²³. However, this study recommended an additional 20% safety margin be applied, resulting in a recommended total buffer zone of 360m.
- 7.4.12 Top Wighay Farm is situated adjacent to Annesley Road (A611) which is the main route into Hucknall, Annesley and links to the M1 motorway. The A611 is located in between the Top Wighay Farm allocation and the ppSPA. This strategic route will therefore act as a partial barrier to the movement of cats from Top Wighay Farm to the ppSPA.

¹¹⁴ Medina et al. 2011. A global review of the impacts of invasive cats on island endangered vertebrates. *Global Change Biology*, 17. pp. 3503-3510.

¹¹⁵ Doherty et al. 2016. Invasive predators and global biodiversity loss. *Proceedings of the National Academy of Sciences USA*, 113. pp. 11261-11265.

¹¹⁶ Kays et al. 2020. The small home ranges and large local ecological impacts of pet cats. *Animal Conservation ZSL*

¹¹⁷ Thompson and Jones. 1999. Human population density and prediction of local plant extinction in Britain. *Conservation Biology*, 13. pp. 185-189.

¹¹⁸ Thompson and Jones. 1999. Human population density and prediction of local plant extinction in Britain. *Conservation Biology*, 13. pp. 185-189.

¹¹⁹ Hanmer, Thomas and Fellowes. 2017. Urbanisation influences range size of the domestic cat (*Felis catus*): consequences for conservation. *Journal of Urban Ecology*, 3 (1).

¹²⁰ Lilith, Calver and Garkaklis. 2008. Roaming habits of pet cats on the suburban fringe in Perth, Western Australia: what size buffer zone is needed to protect wildlife in reserves?

¹²¹ Thomas et al. 2014. Ranging Characteristics of the Domestic Cat (*Felis catus*) in an Urban Environment. *Urban Ecosystems*, 17. pp. 911-921.

¹²² Hanmer, Thomas and Fellowes. 2017. Urbanisation influences range size of the domestic cat (*Felis catus*): consequences for conservation. *Journal of Urban Ecology*, 3 (1).

¹²³ Lilith, Calver and Garkaklis. 2008. Roaming habits of pet cats on the suburban fringe in Perth, Western Australia: what size buffer zone is needed to protect wildlife in reserves?

- 7.4.13 As noted in **paragraph 7.3.25**, part of this strategic allocation has received outline planning permission which was subject to a shadow HRA. The shadow HRA provided a worst-case estimate based on a similar scheme in 2017¹²⁴, which suggests that the Top Wighay Farm allocation would result in approximately 244 cats upon completion of development. The shadow HRA noted that development proposals on site indicate that the western section is reserved for commercial areas such as offices or workshops, which do not typically house domesticated cats. The shadow HRA concluded that the closest point between the ppSPA and the area within which cats are likely to roam was 365m and that development is therefore highly unlikely to result in increased levels of cat predation at the ppSPA from the outline planning application site.
- 7.4.14 The concept masterplan for the area of the allocation which has not received outline planning permission shows that the closest area of residential development is located within approximately 225m of the ppSPA.
- 7.4.15 Requirements to achieve Biodiversity Net Gain, open space and GI targets should ideally be sited on land in between new development at this allocation and the ppSPA. This will provide a barrier to the movement of cats and focus residential development away from breeding bird populations maintaining at least a 400m buffer zone. Policy 23 therefore also requires Green Infrastructure areas to be sited on land in between new development at this allocation and the ppSPA.
- Noise and Visual disturbance
- 7.4.16 Other urbanisation impacts include noise and lighting impacts. Research undertaken as part of the INTERREG IVB-Project "Tidal River Development" TIDE project has resulted in the development of the TIDE toolkit¹²⁵. This toolkit aims to support managers in understanding the complexities of estuarine systems. It includes a 'Waterbird Disturbance Tool Kit' which provides a process whereby the level of potential disturbance (noise and visual disturbance) to waterbirds from a range of construction activities on or adjacent to wetland systems can be assessed.
- 7.4.17 The toolkit relates specially to estuarine environments. It is noted that the strategic allocation at Top Wighay Farm is an inland arable site surrounded by existing development and hedgerows and is therefore very different in nature to the open and expansive landscape of an estuary. However, the toolkit can usefully inform an assessment of disturbance impacts associated with this allocation.

¹²⁴ With 17% of households in the east midlands containing an average 1.8 cats.

¹²⁵ Cutts N, Hemingway K and Spencer J (2013) The Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning and Construction Projects. Produced by the Institute of Estuarine and Coastal Studies (IECS). Version 3.2. Available at: https://www.tide-toolbox.eu/tidetools/waterbird_disturbance_mitigation_toolkit/ [Date Accessed: 31/05/24].

- 7.4.18 It is widely acknowledged that noise levels decrease from source. In terms of noise impacts, the toolkit indicates that plant generating 100dB(A) at source will likely result in an acceptable level of noise for birds (of below 70dB(A)) at a distance of 200m from the noise source. A maximum noise level of 120dB(A) at source would reduce to an acceptable level of noise for birds (of below 70dB(A)) at just over 300m from source¹²⁶.
- 7.4.19 In terms of visual disturbance, the toolkit indicates that flight response may be initiated between 100 – 150m from source, and up to 300m for more sensitive species of bird.
- 7.4.20 This research suggests that a buffer distance of approximately 400m within which urbanisation effects may be experienced is precautionary in terms of this assessment, but that for noise and visual disturbance specifically, a 300m buffer distance could be tolerated given the presence of trees, hedgerows and the A611 between the site and ppSPA.
- 7.4.21 The shadow HRA prepared in support of the part of the strategic allocation which has received outline planning permission drew on a noise assessment which was carried out in 2019¹²⁷ and provided an assessment of likely long-term noise impacts as a result of the traffic arising from the development. This showed that there is no expected increase between baseline noise figures and the predicted 2028 baseline including the development, with no additional mitigation being required. However, this assessment did not include an assessment of construction noise impacts. The shadow HRA references an updated assessment which is required through planning conditions in order to understand the likely impacts of construction phase noise and operational impacts from the commercial and educational use of the section of the site which has received outline planning permission.
- Mitigation
- 7.4.22 Mitigation which has been used elsewhere for development within 400m of the ppSPA includes the incorporation of buffers, screens, swales, bunds, cat deterrent planting and landscaping, fencing, directional lighting, and low noise emitting equipment among other solutions. Best practice techniques to minimise lighting¹²⁸, noise¹²⁹ standards and quiet construction techniques can also be used to minimise impacts upon breeding birds. In addition, the timing of works should be scheduled to avoid the sensitive bird breeding season.

¹²⁶ The Waterbird Disturbance Mitigation Toolkit. TIDE tools - tide-toolbox.eu. Available at: https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/8f/bd/8fbd7e9-ea6f-4474-869f-ec1e68a9c809/11367.pdf [Date Accessed: 31/05/24]

¹²⁷ Stroma, 2019. Air Quality Assessment at Top Wighay Farm, Hucknall. Ref: 132552

¹²⁸ Guidance Note 08/18 'Bats and artificial lighting' by the Bat Conservation Trust and the Institution of Lighting Professionals (2018)

¹²⁹ BS 5228-1:2009+A1:2014: "Code of practice for noise and vibration control on construction and open sites. Noise.

- 7.4.23 Policy 23 contains wording which reads 'All development within 400m of the Sherwood Forest possible potential Special Protection Area (ppSPA) should be avoided where possible. A small part of the proposed Top Wighay Farm strategic allocation is located within the 400 m buffer and any development permitted on this part of the site would need to demonstrate appropriate mitigation is secured to avoid or mitigate any adverse impact upon the integrity of the ppSPA'. This is likely to include best practice mitigation as outlined above in **paragraph 7.4.22**.
- 7.4.24 It is anticipated that GNSP Policy 17: Biodiversity and the Ecological Network will also provide protection of the Sherwood Forest ppSPA and require development to take a risk-based approach to the assessment of impacts upon this informal designation. It is noted in Policy 17 that: "*The Greater Nottingham Strategic Plan and Infrastructure Delivery Plan therefore take a precautionary approach and treat the potential prospective Special Protection Area as a confirmed European Site (following Natural England Advice)*".
- 7.4.25 The exact details of mitigation measures which will need to be included at this allocation will be provided at the planning application stage. This reflects the hierarchical nature of plan making. Given there are widely used techniques available to mitigate urbanisation impacts (**paragraph 7.4.22**), there is no uncertainty over the deliverability of these mitigation measures.
- 7.4.26 This approach is compliant with case law which requires the Competent Authority to be satisfied that mitigation solutions can be achieved in practice^{130,131}, whilst recognising the multi-staged planning and approval procedural approach to plan making¹³².
- 7.4.27 Taking into consideration the location of development in relation to the ppSPA, availability of mitigation techniques in relation to urbanisation effects and also the protective nature of GNSP policy wording, it can be concluded that there will be no adverse impact on the integrity of the ppSPA from urbanisation impacts either alone or in-combination.

¹³⁰ Ltd (NANT Ltd) v Suffolk Coastal District Council, Court of Appeal, 17 February 2015. Available at: <https://www.eastsuffolk.gov.uk/assets/Planning/Suffolk-Coastal-Local-Plan/Core-Strategy-and-DMP/No-Adastral-New-Town-Ltd-v-SCDC.pdf> [Date accessed: 19/02/24].

¹³¹ Opinion of Advocate General Kokott delivered on 9 June 2005. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland. Failure of a Member State to fulfil obligations - Directive 92/43/EEC - Conservation of natural habitats - Wild fauna and flora. Case C-6/04. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62004CC0006> [Date accessed: 19/02/24].

¹³² R (o a o Devon Wildlife Trust) v. Teignbridge DC [2015] EWHC 2159 (Admin). 28 July 2015. Available at: <https://vlex.co.uk/vid/r-devon-wildlife-trust-792693573> [Date accessed: 19/02/24].

8 Conclusions and Next Steps

8.1 Conclusions

8.1.1 The GNSP is not directly connected with or necessary to the management of any European site. A screening assessment was therefore undertaken which identified a number of likely significant effects associated with the GNSP. Taking no account of mitigation measures the GNSP has the potential to affect the following European sites:

- **Humber Estuary SAC** – water quality
- **Humber Estuary Ramsar** – water quality
- **Humber Estuary SPA** – water quality

8.1.2 In addition, to ensure a 'risk-based' approach was adopted, consideration has also been given to the following ppSPA:

- **Sherwood Forest ppSPA** - air pollution, recreation pressure and urbanisation effects

8.1.3 The HRA therefore progressed to an AA which looked at the impacts of a change in air quality, water quality, recreational pressure and urbanisation effects upon the qualifying features and conservation objectives of each European site and the Sherwood Forest ppSPA.

8.1.4 The AA has drawn on the Precautionary Principle to identify a number of potential threats and pressures that might be exacerbated by the GNSP. Throughout the HRA a series of recommendations were made during the plan making process aimed at strengthening the plan's wording to ensure adequate policy protection is provided. These recommendations have been incorporated into the Plan.

8.1.5 The AA has taken into consideration the protective nature of these policies. It has also considered the hierarchical nature of plan making i.e. the requirement for HRA at lower tiered stages of the plan making process and project application stage. A number of existing protection measures are set out in high level strategic policy and existing planning policy and environmental frameworks that serve to protect European sites.

8.1.6 The HRA concludes that the GNSP will have no adverse impact on site integrity at any European site, or upon the ppSPA, either alone or in-combination.

8.2 Next steps

8.2.1 The purpose of this report is to inform the HRA of the GNSP Publication Draft Plan using best available information. The Councils, as the Competent Authorities, are responsible for preparing the Integrity Test, which can be undertaken in light of the conclusions set out in this report.

8.2.2 This report will be submitted to Natural England, the statutory nature conservation body, for formal consultation. The Councils must 'have regard' to their representations under the provisions of the Habitats Regulations prior to making a final decision as to whether they will 'adopt' the conclusions set out within this report as their own.

Appendix A: In-combination assessment

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Nottinghamshire County Council Waste Local Plan ¹	<p>Current Waste Local Plan was adopted in January 2002 and the Waste Core Strategy was adopted in 2013.</p> <p>The County Council is currently preparing the New Waste Local Plan. The Councils submitted the Nottinghamshire and Nottingham Waste Local Plan to the Planning Inspectorate, on behalf of the Secretary of State, on the 5 March 2024.</p>	<p>Strategic objectives of the Waste Plan are as follows:</p> <ul style="list-style-type: none">• Meet future needs• Climate change• Strengthen our economy• The environment• Community, health and wellbeing• Sustainable transport• High quality design and operation <p>Waste treatment facilities will be located close to the main urban areas and settlements.</p>	<p>Yes. This plan may increase vehicle movements in the study area and emissions to air. This plan has the potential to trigger LSEs in terms of air quality in-combination with the GNSP</p>

¹ Nottinghamshire County Council (2002) Adopted Waste Local Plan. Available at: <https://www.nottinghamshire.gov.uk/planning-and-environment/waste-development-plan/new-waste-local-plan> [Date Accessed: 11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Nottinghamshire County Council Minerals Local Plan ²	The Nottinghamshire Minerals Plan was adopted in March 2021.	<p>The Mineral Local Plan sets out the approach to minerals provision in Nottinghamshire up to 2036. Strategic objectives include the following:</p> <ul style="list-style-type: none"> - Improving the sustainability of minerals development - Providing an adequate supply of minerals - Addressing climate change - Safeguarding of mineral resources, permitted mineral reserves and associated minerals infrastructure - Minimising impacts on communities - Protecting and enhancing natural assets - Protecting and enhancing historic assets - Protecting agricultural soils 	Yes. This plan may increase vehicle movements in the study area and emissions to air. This plan has the potential to trigger LSEs in terms of air quality in-combination with the GNSP.
Nottinghamshire Local Transport Plan ³	The current Local Transport Plan (The third Local Transport Plan) will run from 2011 to 2026. It is made up of two separate documents: the Local Transport Plan Strategy and the Implementation Plan.	<p>The strategic transport goals for Nottinghamshire are as follows:</p> <ul style="list-style-type: none"> • Provide a reliable, resilient transport system which supports a thriving economy and growth whilst encouraging sustainable and healthy travel; • Improve access to key services, particularly enabling employment and training opportunities; and • Minimise the impacts of transport on people's lives, maximise opportunities to improve the environment and help tackle carbon emissions. 	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality impacts. Promotion of alternative modes of transport to the private car may result in positive LSEs in-combination with the GNSP.

² Nottinghamshire County Council (2021) Nottinghamshire Minerals Local Plan. Available at: <https://www.nottinghamshire.gov.uk/media/5079375/adoptedmineralslocalplancompressed.pdf> [Date Accessed: 11/07/24].

³ Nottinghamshire County Council (2019) Local Transport Plan. Available at: <https://www.nottinghamshire.gov.uk/transport/public-transport/plans-strategies-policies/local-transport-plan#ltps> [Date Accessed: 11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Newark and Sherwood District Council	<p>The Council adopted the Amended Core Strategy on 7th March 2019 which sets out the Council's strategy for delivering growth in the District⁴.</p> <p>The Council adopted the Allocations and Development Management DPD on 16th July 2016⁵.</p> <p>The amended Second Publication Allocations & Development Management DPD has been submitted to the Secretary of State for examination⁶.</p>	The adopted Amended Core Strategy allocates in the region of 8,806 dwellings between 2013 and 2033 in the Sub-Regional Centre, Service Centres and Principal Villages. The employment land requirement for Newark & Sherwood District between 2013 and 2033 is a minimum of 83.1 hectares	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.
Mansfield District Council	<p>The Mansfield Local Plan was adopted in September 2020⁷.</p> <p>The Council are currently undertaking a Local Plan review and have consulted on the first stage of this - Mansfield District Local Plan Issues and Opportunities Report.</p>	<p>Objectives of the adopted plan are as follows:</p> <ul style="list-style-type: none"> At least 6,500 new homes proposed for 2013 to 2033 (Mansfield urban area - 90% and Warsop Parish - 10%); At least 41 hectares of employment land from 2013 to 2033; and Up to 17,240 sqm of retail and leisure floorspace between 2017 and 2033. 	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.

⁴ Newark and Sherwood District Council, Newark & Sherwood Amended Core Strategy (2019). Available at: <https://www.newark-sherwooddc.gov.uk/ldf/> [Date accessed: 11/07/24].

⁵ Newark & Sherwood District Council, Newark and Sherwood Local Development Framework Allocations and Development Management, Development Plan Document (2013). Available at: <https://www.newark-sherwooddc.gov.uk/media/nsdc-redesign/documents-and-images/your-council/planning-policy/supplementary-planning-information/allocations-and-development-management-dpd/Allocations-and-Development-Management-Development-Plan-Document.pdf> [Date Accessed:11/07/24].

⁶ Newark and Sherwood District Council, Second Publication Amended Allocations and Development Management Development Plan Document (2023). Available at: <https://www.newark-sherwooddc.gov.uk/media/nsdc-redesign/documents-and-images/your-council/planning-policy/local-development-framework/amended-allocations-and-development-management-dpd/2nd-Publication-AADMDPD---being-printed.pdf> [Date Accessed: 11/07/24].

⁷ Mansfield District Council, Mansfield District Local Plan Adopted Plan (2020). Available at: <https://www.mansfield.gov.uk/downloads/file/1645/mdc-adopted-local-plan-2020> [Date Accessed: 11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Ashfield District Council	The Ashfield Local Plan Review was adopted in November 2002 ⁸ . The plan was subject to consultation at Regulation 19 Pre-Submission Draft Local Plan 2023 – 2040 ⁹ at the end 2023 / early 2024 and has now been submitted for examination.	The Local Plan review sets out a housing target of 7,582 homes to be met during the plan period. The employment land demand requires 81ha of employment land to be delivered from 2023 to 2040.	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.
Bassetlaw District Council	The Bassetlaw Local Plan 2020 – 2038 was adopted on 29 May 2024 ¹⁰ .	The plan aims to deliver a minimum of 9,720 dwellings, provide for 49 permanent pitches for Gypsy and Travellers by 2037-2038 and contribute to the provision of approximately 193ha of developable land in the E(g), B2 and B8 Class at the General and Larger Unit Employment Sites, and to meet the needs for B8 sub-regional/regional large scale logistics use only on approximately 118ha of land at the Apleyhead Strategic Employment Site.	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.

⁸ Ashfield District Council, Ashfield Local Plan Review Adopted (2002). Available at: <https://www.ashfield.gov.uk/media/q3jixf4t/ashfield-district-council-adopted-local-plan-november-2002.pdf> [Date Accessed:11/07/24].

⁹ Ashfield District Council, Ashfield Local Plan 2023 – 2040 Regulation 19 Pre – Submission Draft (2023). Available at: <https://www.ashfield.gov.uk/planning-building-control/local-plan/emerging-local-plan/> [Date Accessed:11/07/24].

¹⁰ Bassetlaw District Council, Bassetlaw Local Plan 2020 – 2038 (2024). Available at: <https://www.bassetlaw.gov.uk/media/gn1kjm1b/adopted-bassetlaw-local-plan-2020-2038.pdf> [Date Accessed:11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Erewash Borough Council	<p>Erewash Borough Council are in the early stages of commencing work to replace the adopted Core Strategy. Until then, The Borough's key planning policy document is the Erewash Core Strategy, which was adopted in March 2014¹¹</p> <p>The Local Plan review was submitted for examination on 30th November 2022¹².</p>	<p>The Erewash Core Strategy sets out a minimum of 6250 new homes to be distributed and provided for from 2011 to 2028.</p> <p>The employment land study for Nottingham City Region 2007 & 2009 update predicts an additional 2860 additional office jobs over the plan period and the Erewash Core Strategy makes provision for 42,500 sqm of additional office and a minimum of 10 hectares of industrial and warehousing land.</p> <p>The Local Plan review sets a housing target of 5,800 new homes (2022-2037). Provision is made for 55 ha of employment land at the Stanton North strategic site.</p>	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.
Amber Valley Borough Council	Amber Valley Borough Council has consulted on the Regulation 19 Pre-submission stage of their new Local Plan. This Plan sets out a vision and a framework for the future development of the Borough from 2022-2040. ¹³	<p>The Amber Valley Borough Council Local Plan sets out a housing requirement of 6564 houses to be delivered over the plan period.</p> <p>The Local Plan has set out a target of 82.25 ha of employment land by 2040.</p>	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.

¹¹ Erewash Borough Council, Erewash Core Strategy (2014). Available at: https://www.erewash.gov.uk/images/Planning_Policy/ErewashCoreStrategy2011-2028.pdf [Date accessed 11/07/24].

¹² Erewash Borough Council, Core Strategy Review – Submission Version (November 2022). Available at: <https://www.erewash.gov.uk/local-plan-section/policy-document.html> [Date accessed 11/07/24].

¹³ Amber Valley Borough Council, Amber Valley Local Plan 2022-2040 Pre submission (2024). Available at: <https://www.ambervalley.gov.uk/localplan> [Date accessed 11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Melton Borough Council	<p>Melton Borough adopted their local plan in October 2018¹⁴.</p> <p>It covers the entire Borough and sets out the development strategy, policies and proposals, including site allocations, which will guide land use and development in the Borough up to 2036.</p>	<p>The Melton Local Plan sets out that provision will be made for the development of at least 6125 new homes and some 51 hectares of employment land between 2011 and 2036 in Melton Borough.</p> <p>Housing delivery is planned to increase with the plan period as follows:</p> <ul style="list-style-type: none"> • Average annual housing requirement for 2011- 2021: a minimum of 170 dpa • Average annual housing requirement for 2021- 2026: a minimum of 245 dpa • Average annual housing requirement for 2026- 2036: a minimum of 320 dpa 	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.
Charnwood Borough Council	<p>The Charnwood Local Plan 2021-37 has been submitted for examination¹⁵.</p>	<p>The local housing need for Charnwood has been calculated using the standard methodology set out in the NPPG. This shows there is a need for 1111 new homes per year for the period 2021-2037, totalling at 17,776 homes during the plan period.</p> <p>The Local Plan identifies a need for 55.47ha of employment land over the plan period.</p>	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.

¹⁴ Melton Borough Council, Melton Local Plan (2018). Available at: <https://www.meltonplan.co.uk/> [Date accessed 11/07/24].

¹⁵ Charnwood Borough Council, Charnwood Local Plan 2021-37, Pre-Submission Draft (2021). Available at: https://www.charnwood.gov.uk/files/documents/sd_2_charnwood_local_plan_2021_n_2037_pre_submission_draft_2021_2037_july_2021/SD-2%20Charnwood%20Local%20Plan%202021%20-%2020237%20Pre-Submission%20Draft%202021-2037%20July%202021.pdf [Date accessed 11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
North West Leicestershire District Council	North West Leicestershire District Council is currently preparing a new Draft Local Plan and was subject to consultation between February and March 2024. The North West Leicestershire Local Plan 2011 to 2032 provides the current planning policies for the district. This plan was adopted in November 2017 with an amended version being adopted in March 2021 ¹⁶ .	A Housing and Economic Needs Development Assessment (HEDNA) was undertaken for the Leicester and Leicestershire Housing Market Area (HMA). The HEDNA identified a need for 66 hectares of employment land and 9,620 dwellings.	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality, water and recreational LSEs.
Humber River Basin Management Plan	The Humber RBMP was updated in October 2022 ¹⁷ .	The Plan provides an overview of river basin planning in England and Wales for the Humber River Basin District. It includes objectives for each water body and a summary of the measures necessary to reach those objectives.	The RBMP actions are focused on water body and water dependent European site improvements. Whilst development activities arising from Local Development Plans (including the GNSP) may inhibit the ability of the RBMP to achieve objectives relating to European site protected areas, the overall effect of the RBMP is to promote management towards GEP and GES.

¹⁶ North West Leicestershire District Council, North West Leicestershire Local Plan (2021). Available at: https://www.nwleics.gov.uk/pages/local_plan [Date accessed: 11/07/24].

¹⁷ Environment Agency (2022) Humber River basin district management plan: updated 2022. Available at: <https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022> [Accessed: 11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Severn Trent Water Resources Management Plan	The Draft Water Resources Management Plan was prepared in 2024 ¹⁸ .	The draft Plan describes a likely future supply / demand deficit of 244Ml/d by plan year 2040-2041 if no action is taken. It sets out the long-term strategy until 2085 to prepare for the future. The Plan proposes ongoing leakage reduction measures, water efficiency and metering activities. Some current EA abstraction licenses will be capped to prevent WFD deterioration. It sets out a vision of 'no/low regret' solutions, particularly in response to the challenges of climate change on water demand and supply. The draft builds on previous goals to reduce unsustainable abstraction. Mainly focuses on water availability but considers water quality through design. Severn Trent Water will continue to restore rivers to improve habitats and ecological resilience to low flows.	<p>The HRA states that the WRMP accounts for future water demand. Therefore, potential 'in-combination' effects due to water resource demands from other plans are unlikely. It is considered the WRMP options will not have significant in-combination effects with local plans in respect of water resources.</p> <p>It is likely that the projects which propose upgrades to WwTWs will have positive effects for hydrologically sensitive European sites in the GNSP area.</p>
Severn Trent Drainage and Wastewater Management Plan	Published in March 2023 ¹⁹ .	This Plan focuses on the Vision and Objectives such as planning for the future of water supply, delivering affordable services, reducing the risk of flooding and pollution, while protecting and enhancing the environment, across the Plan area and over a long duration.	This Plan aims to protect the water environment. It has the potential to have a positive in-combination effect with the GNSP on the water environment.

¹⁸ Severn Trent Water (2024) Draft Water Resources Management Plan: Main Narrative. Available at: <https://www.severntrent.com/content/dam/dwrmp24-st/STdWRMP24-Main-Narrative.pdf> [Accessed: 11/07/24].

¹⁹ Severn Trent, Drainage and Wastewater Management Plan (2023). Available at: <https://www.severntrent.com/content/dam/stw-plc/about-us/drainage-and-wastewater-management-plan/2023/SVE-fDWMP23-L1-Non-Technical-Report.pdf> [Date Accessed: 11/07/24].

Plans and Policies	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Potential in-combination Likely Significant Effect (LSE)
Severn Trent Water Drought Plan	The Severn Trent Drought Plan ²⁰ covers the period from 2022 to 2027.	The Drought Plan outlines the operational steps that will be conducted if we face a drought in the next 5 years. It describes how supplies will be enhanced, demands managed, and environmental impacts minimised. It proposes ongoing leakage reduction measures, water efficiency and monitoring and metering activities.	It is likely that the Drought Plan will have a positive impact for hydrologically sensitive European sites in the GNSP area.

²⁰ Severn Trent Water (2022) Drought Plan 2022-2027. Available at: <https://www.severntrent.com/about-us/our-plans/drought-plan/> [Accessed: 11/07/24].

Appendix B: European Site conservation objectives, threats and pressures

Humber Estuary SAC¹

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural European and European of qualifying species
- The structure and function (including typical species) of qualifying natural European
- The structure and function of the European of qualifying species
- The supporting processes on which qualifying natural European and European of qualifying species rely
- The populations of qualifying species
- The distribution of qualifying species within the site.

Qualifying features:

H1110. Sandbanks which are slightly covered by sea water all the time; subtidal sandbanks

H1130. Estuaries

H1140. Mudflats and sandflats not covered by seawater at low tide; intertidal mudflats and sandflats

H1150. Coastal lagoons

H1310. Salicornia and other annuals colonising mud and sand; glasswort and other annuals colonising mud and sand

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); shifting dunes with marram

H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); dune grassland

H2160. Dunes with *Hippophae rhamnoides*; dunes with sea-buckthorn

S1095. *Petromyzon marinus*; sea lamprey

S1099. *Lampetra fluviatilis*; river lamprey

S1364. *Halichoerus grypus*; grey seal

Threats and pressures at European site which may be affected by the GNSP²:

- Water pollution
- Public access / disturbance
- Air pollution

¹ Natural England (2018) Humber Estuary SAC Conservation Objectives. Available at:
<http://publications.naturalengland.org.uk/publication/5009545743040512> [Date accessed: 11/07/24].

² Natural England (2015) Humber Estuary SIP. Available at:
<https://publications.naturalengland.org.uk/publication/5427891407945728> [Date accessed: 11/07/24].

Humber Estuary SPA³

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the European of the qualifying features
- The structure and function of the European of the qualifying features
- The supporting processes on which the European of the qualifying features rely
- The population of each of the qualifying features
- The distribution of the qualifying features within the site.

Qualifying features:

A021 *Botaurus stellaris*; great bittern (Non-breeding)

A021 *Botaurus stellaris*; great bittern (Breeding)

A048 *Tadorna tadorna*; common shelduck (Non-breeding)

A081 *Circus aeruginosus*; eurasian marsh harrier (Breeding)

A082 *Circus cyaneus*; hen harrier (Non-breeding)

A132 *Recurvirostra avosetta*; pied avocet (Non-breeding)

A132 *Recurvirostra avosetta*; pied avocet (Breeding)

A140 *Pluvialis apricaria*; european golden plover (Non-breeding)

A143 *Calidris canutus*; red knot (Non-breeding)

A149 *Calidris alpina alpina*; dunlin (Non-breeding)

A151 *Philomachus pugnax*; ruff (Non-breeding)

A156 *Limosa limosa islandica*; black-tailed godwit (Non-breeding)

A157 *Limosa lapponica*; bar-tailed godwit (Non-breeding)

A162 *Tringa totanus*; common redshank (Non-breeding)

A195 *Sterna albifrons*; little tern (Breeding)

Waterbird assemblage

Threats and Pressures at European site which may be affected by the GNSP⁴:

- Water pollution
- Public access / disturbance
- Air pollution

Humber Estuary Ramsar⁵

Ramsar sites do not have Conservation Objectives in the same way as SPAs and SACs. Information regarding the designation of Ramsar sites is contained in JNCC Ramsar Information Sheets. Ramsar Criteria are the criteria for identifying Wetlands of International Importance. The relevant criteria and ways in which this site meets the criteria are presented in the table below.

³ Natural England (2019) Humber Estuary SPA Conservation Objectives. Available at:

<http://publications.naturalengland.org.uk/publication/5382184353398784> [Date accessed: 07/11/24].

⁴ Natural England (2015) Humber Estuary SIP. Available at:

<http://publications.naturalengland.org.uk/file/5730884670980096> [Date accessed: 07/11/24].

⁵ JNCC (2007) Ramsar Information Sheet: Humber Estuary. Available at:

<https://rsis.ramsar.org/RISapp/files/RISrep/GB663RIS.pdf> [Date accessed: 07/11/24].

Ramsar Criterion	Justification for the application of each criterion
1	<p>The site is a representative example of a near-natural estuary with the following components: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.</p> <p>It is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Examples of both strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland occur on both banks of the estuary and along the coast. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers. The lower saltmarsh of the Humber is dominated by common cordgrass <i>Spartina anglica</i> and annual glasswort <i>Salicornia</i> communities. Low to mid marsh communities are mostly represented by sea aster <i>Aster tripolium</i>, common saltmarsh grass <i>Puccinellia maritima</i> and sea purslane <i>Atriplex portulacoides</i> communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch <i>Elytrigia atherica</i> (<i>Elymus pycnanthus</i>) saltmarsh community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed <i>Phragmites australis</i> fen and sea club rush <i>Bolboschoenus maritimus</i> swamp with the couch grass <i>Elytrigia repens</i> (<i>Elymus repens</i>) saltmarsh community. Within the Humber Estuary Ramsar site there are good examples of four of the five physiographic types of saline lagoon.</p>
3	<p>The Humber Estuary Ramsar site supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i>.</p>
5	<p>Assemblages of international importance: 153,934 waterfowl, non-breeding season (5-year peak mean 1996/97-2000/2001)</p>
6	<p>Species/populations occurring at levels of international importance.</p> <p>Qualifying species/populations (as identified at designation): Species with peak counts in winter:</p> <ul style="list-style-type: none"> • Common shelduck, <i>Tadorna tadorna</i>, NW Europe - 4464 individuals, representing an average of 1.5% of the population (5-year peak mean 1996/7-2000/1) • Eurasian golden plover, <i>Pluvialis apricaria</i>, <i>altifrons</i> subspecies, NW Europe, W Continental Europe, NW Africa population - 30,709 individuals, representing an average of 3.3% of the GB population (5-year peak mean 1996/7-2000/1) • Red Knot, <i>Calidris canutus islandica</i> subspecies - 28165 individuals, representing an average of 6.3% of the population (5-year peak mean 1996/7-2000/1) • Dunlin, <i>Calidris alpina alpina</i>, Europe - 22222 individuals, representing an average of 1.7% of the population (5-year peak mean 1996/7-2000/1) • Black-tailed godwit, <i>Limosa limosa</i>, <i>islandica</i> subspecies - 1,113 individuals, wintering, representing an average of 3.2% of the population (5-year peak mean 1996/7-2000/1) • Bar-tailed godwit, <i>Limosa lapponica</i>, <i>lapponica</i> subspecies - 2,752 individuals, wintering, representing an average of 2.3% of the population (5-year peak mean 1996/7-2000/1)

Ramsar Criterion	Justification for the application of each criterion
	<ul style="list-style-type: none"> Common redshank, <i>Tringa totanus totanus</i> - 4632 individuals, representing an average of 3.6% of the population (5-year peak mean 1996/7- 2000/1)
8	The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal waters and their spawning areas.

Threats and Pressures at European site which may be affected by the GNSP⁶:

- Water pollution (domestic sewage)
- Recreational / tourism disturbance
- Coastal squeeze

Sherwood Forest ppSPA

No conclusion has been reached about the possible future classification of parts of Sherwood Forest as a SPA for its breeding bird interest. Natural England advises⁷:

"a precautionary approach should be adopted by LPAs which ensures that reasonable and proportionate steps have been taken in order to minimise, as far as possible, any potential adverse effects from development on the breeding populations of nightjar and woodlark in the Sherwood Forest area".

Bird species listed on Annex 1 of the European Wild Birds Directive:

European nightjar (Breeding) *Caprimulgus europaeus*; and
Woodlark (Breeding) *Lullula arborea*.

Threats and Pressures at the site which may be affected by the GNSP:

- Disturbance to breeding birds from people, their pets and traffic;
- Loss, fragmentation and/or damage to breeding and/or feeding habitat;
- Bird mortality arising from domestic pets and/or predatory mammals and birds;
- Bird mortality arising from road traffic and/or wind turbines; and
- Pollution and/or nutrient enrichment of breeding habitats.

⁶ JNCC (2007) Ramsar Information Sheet: Humber Estuary. Available at:

<https://rsis.ramsar.org/RISapp/files/RISrep/GB663RIS.pdf> [Date accessed: 07/11/24].

⁷ Natural England (2014) Advice note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region. Available at:

<https://www.mansfield.gov.uk/downloads/file/329/natural-england-s-advice-notes-on-the-sherwood-ppspa-2014> [Date Accessed: 07/11/24].

Appendix C: European sites and corresponding SSSI conservation status

The Humber Estuary SAC

SSSI	Number of SSSI Units	FCS	Comments
Humber Estuary SSSI	189	128 Unfavourable – recovering	Good range of habitats. Could be improved with targeted management.
		7 Unfavourable – no change	Unit is overrun with bramble, nettle and hawthorn.
		41 Unfavourable - declining	Pollution, agriculture/run-off
		13 Favourable	n/a

The Humber Estuary SPA and The Humber Estuary Ramsar

SSSI	Number of SSSI Units	FCS	Comments
Humber Estuary SSSI	187	136 Unfavourable – recovering	Good range of habitats. Could be improved with targeted management.
		7 Unfavourable – no change	Unit is overrun with bramble, nettle and hawthorn.
		41 Unfavourable - declining	Pollution, agriculture/run-off
		13 Favourable	n/a
North Killingholme Haven Pits SSSI	2	1 Unfavourable – no change	n/a
		1 Favourable	n/a
Saltfleetby – Theddlethorpe Dunes SSSI	2	1 Favourable	n/a
		1 Unfavourable - recovering	n/a
The Lagoons SSSI	1	1 Unfavourable – no change	Coastal squeeze

Sherwood Forest ppSPA

SSSI	Number of SSSI Units	FCS	Comments
Clumber Park SSSI	29	11 Favourable	n/a
		17 Unfavourable recovering	The high cover of non-native trees and shrubs, bracken and scrub has been reduced by positive management.
		1 Unfavourable – no change	
Welbeck Lake SSSI	6	5 Favourable	n/a
		1 Unfavourable - recovering	n/a
Thoresby Lake SSSI	4	1 Unfavourable – No change	n/a
		3 Unfavourable - recovering	n/a
Birkland and Bilhaugh SSSI	12	9 Unfavourable - recovering	n/a
		3 Unfavourable – no change	Forestry and woodland management (Unit 8) No evidence of positive management being undertaken. Public access and disturbance (Unit 12) Replacement of the characteristic woodland and heathland with areas of hardstanding, buildings and surfaced walkways.
Birklands West and Ollerton Corner SSSI	6	6 Unfavourable - recovering	n/a
Strawberry Hill Heaths SSSI	3	3 Unfavourable - recovering	Scrub levels too high and woodland structure poor.
Rainworth Heath SSSI	1	1 Unfavourable - recovering	Scrub levels too high and woodland structure poor.

Appendix D: Screening of the GNSP

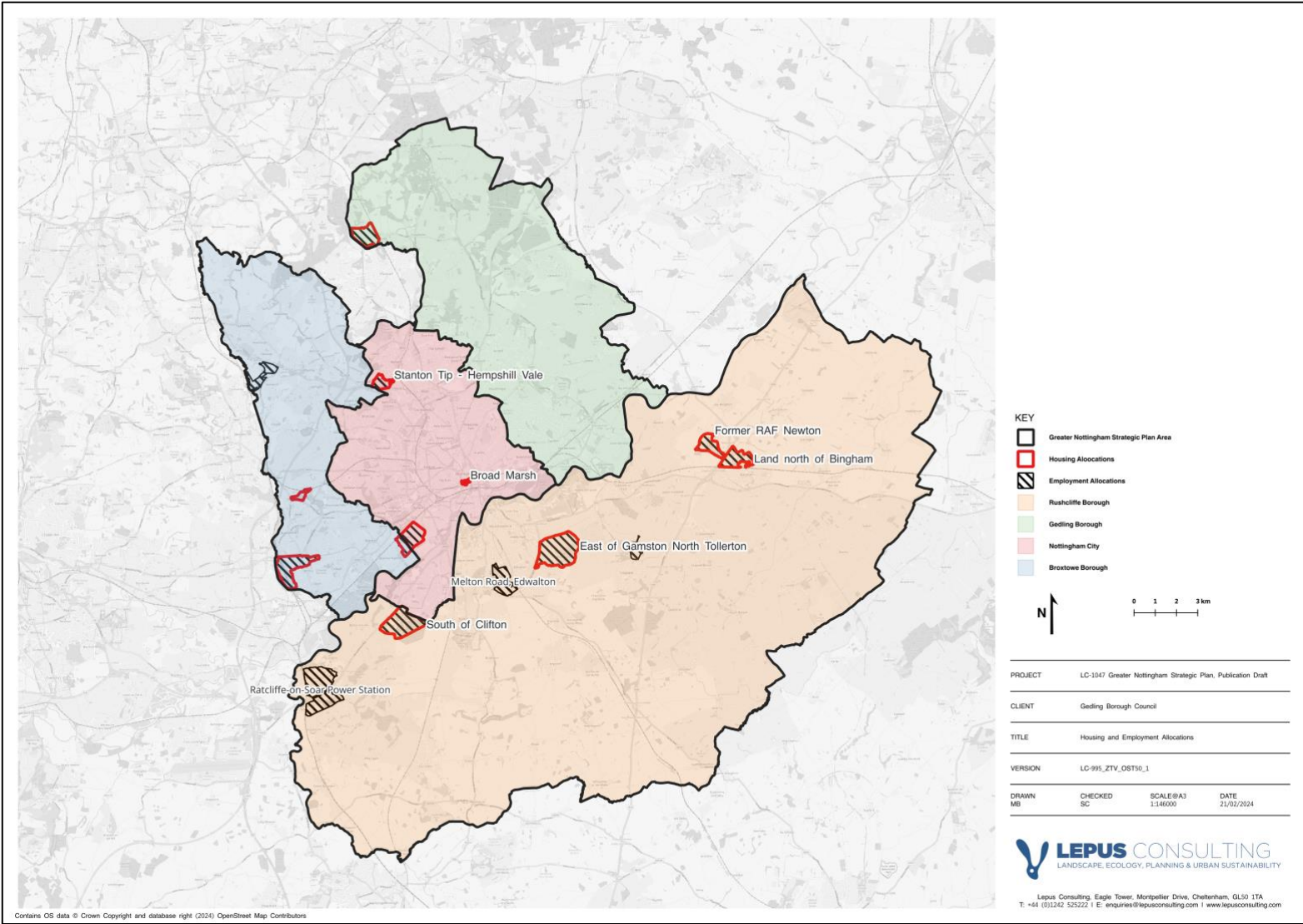


Figure D.1: Map illustrating the location of GNSP strategic allocations

Table D.1: Screening of the GNSP

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
n/a	Vision of Greater Nottingham in 2041	<p>The vision provides a general statement of policy / general aspirations for the GNSP area. It also sets out the aim of the GNSP to deliver a minimum of 52,600 new homes across the plan area and facilitate the economic growth potential of the decommissioned Ratcliffe on Soar Power Station.</p> <p>The vision will therefore trigger development and change within the plan area that could have an LSE in-combination with development in neighbouring local plan areas (see Appendix A). The vision therefore has the potential to result in the following LSEs:</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational and urbanisation in-combination LSEs on the Sherwood Forest ppSPA 	Category L	Screen in
n/a	Spatial Objectives	The strategic objectives are central to achieving the delivery of the vision for the GNSP area. These are general aspirations for the Plan and will not directly trigger development or a change.	Category A	Screen out
Policy 1	Climate Change, Sustainable Design, Construction, Energy and Managing Flood Risk	This policy sets out how development should be sustainably constructed and designed to adapt to climate change. It also sets out requirements in terms of flood risk and sustainable drainage. It will not lead to development or any change which may have a LSE on any habitats site.	Category D	Screen out
Policy 2	Planning Strategy and Settlement Hierarchy	This policy sets criteria for sustainable development within the Plan area and also sets out the settlement hierarchy. This policy sets out criteria to test sustainability of development and does not trigger or any change which may have an LSE on any European site or the ppSPA.	Category B	Screen out
Policy 3	Housing	<p>This policy sets delivery targets for new housing within each authority area over the Plan period. It also identifies strategic sites and associated indicative housing numbers. The policy therefore triggers development that has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational and urbanisation in-combination LSEs on the Sherwood Forest ppSPA 	Category L	Screen in

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
Policy 4	Green Belt	This policy sets out provisions for the review of the Green Belt boundaries. This policy itself will not lead to development or trigger any change which may have an LSE on any European site or the ppSPA	Category F	Screen out
Policy 5	Employment Provision and Economic Development	<p>This policy includes delivery targets for employment within each authority area over the Plan period. It also identifies strategic sites and associated indicative employment numbers. The policy therefore triggers development has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational and urbanisation in-combination LSEs on the Sherwood Forest ppSPA 	Category L	Screen in
Policy 6	Nottingham City Centre	<p>This policy promotes the city centre as the region's principal shopping, leisure, office and cultural destination. This policy does not allocate development specifically but it does support growth in the city centre to achieve the aims of the policy. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational and urbanisation in-combination LSEs on the Sherwood Forest ppSPA 	Category L	Screen in
Policy 7	Role of Town and Local Centres	This policy sets out the role of town and local centres and also the hierarchy for these. This policy itself will not lead to development or trigger any change which may have an LSE on any European site or the ppSPA	Category F	Screen out
Policy 8	Housing Size Mix and Choice	This policy sets criteria in relation to housing size, mix and choice. This policy itself will not lead to development or trigger any change which may have an LSE on any European site or the ppSPA	Category F	Screen out
Policy 9	Gypsy and Traveller and Travelling Showpeople	This policy sets out criteria for the selection of gypsy, traveller and travelling showpeople development. It notes that the allocation of these sites will be made on appropriate strategic allocations and in part 2 Local Plans. Whilst this policy does not allocate gypsy, traveller and travelling showpeople sites specifically it does support their inclusion at strategic allocations. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.	Category L	Screen in

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
		<ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational and urbanisation in-combination LSEs on the Sherwood Forest ppSPA 		
Policy 10	Design and Enhancing Local Identity	This policy sets out criteria for new development in terms of design and enhancement of local identity. It will not lead to development or any change which may have an LSE on any European site or the ppSPA.	Category F	Screen out
Policy 11	Historic Environment	This policy aims to protect, conserve and, where appropriate, enhance the historic environment. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site or the ppSPA.	Category D	Screen out
Policy 12	Local Services and Healthy Lifestyle	This policy aims to improve community facilities and increase accessibility to these facilities. It will not directly lead to development or any change which may have an LSE on any European site or the ppSPA.	Category F	Screen out
Policy 13	Culture, Tourism and Sport	This policy sets out criteria to support the future provision of culture, tourism and sport. It will not directly lead to development or any change which may have an LSE on any European site or the ppSPA.	Category F	Screen out
Policy 14	Managing Travel Demand	This policy will promote sustainable travel choices and active travel. It will not directly lead to development or any change which may have an LSE on any European site or the ppSPA.	Category F	Screen out
Policy 15	Transport Infrastructure Priorities	This policy requires new development to provide infrastructure that promotes sustainable and active forms of transport. It identifies planned transport schemes which are essential to the delivery of the Strategic Plan and with committed funding. These schemes will be subject to their own HRA. The transportation impacts of these schemes have been taken into consideration in the traffic modelling which has informed this HRA and assessment of air quality impacts. This policy will not directly lead to development or any change which may have an LSE on any European site or the ppSPA.	Category F	Screen out
Policy 16	Blue and Green Infrastructure and Landscape	This policy aims to develop, promote and enhance blue and green infrastructure at the landscape scale. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site or the ppSPA. It will have a positive ecological impact upon European sites and the ppSPA.	Category D	Screen out
Policy 17	Biodiversity and the Ecological Network	This policy aims to protect and improve biodiversity and the ecological network across the Plan area. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site or the ppSPA. It will provide protection to European sites and the ppSPA.	Category D	Screen out
Policy 18	Developer Contributions	This policy sets out infrastructure towards which developer contributions will be sought. It will not lead to development or any change which may have an LSE on any European site or the ppSPA.	Category F	Screen out

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
Policy 19	Strategic Allocation Boots Site (Broxtowe)	<p>This strategic policy allocates 600 dwellings, 82,000 sqm of employment floorspace, comprising office units (E); research and development (E); industrial process (E); general industrial (B2); storage and distribution (B8) and Ancilliary mixed use development comprising residential institutions (C2); non-residential institutions (E, F.1); up to 2,500sqm retail & food/drink (Class E and Sui generis). The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 20	Strategic Allocation Field Farm, North of Stapleford (Broxtowe)	<p>This strategic policy allocates 450 dwellings. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 21	Strategic Allocation Toton Strategic Location for Growth and Chetwynd Barracks (Broxtowe)	<p>This strategic policy allocates 3,000 dwellings, employment generating development of 18 hectares, a local neighbourhood centre and other community facilities at Toton and 500 dwellings, small-scale employment generating development of no more than 3.5 hectares, a local neighbourhood centre and other community facilities at Chetwynd Barracks. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 22	Strategic Allocation Former Bennerley	<p>The Former Bennerley Coal Disposal Point is being allocated as a strategic site for rail-connected logistics-led employment land. This will include logistics development and rail-</p>	Category L	Screen in

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
	Coal Disposal Point (Broxtowe)	<p>freight terminal. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA (allocation within 200m of the ppSPA). Alone air quality impacts may also be possible depending on the nature of employment uses. <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>		
Policy 23	Strategic Allocation Top Wighay Farm (Gedling)	<p>This strategic policy allocates 1,515 dwellings, up to 6.52 hectares of employment generating development, a neighbourhood centre and other community facilities. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA (allocation within 200m of the ppSPA). Alone air quality impacts may also be possible depending on the nature of employment uses. Recreational alone LSEs on the Sherwood Forest ppSPA due to its location 184m to the east of the ppSPA. Urbanisation (e.g. cat predation, vandalism, lighting and visual disturbance) alone LSEs as this allocation is located within 400m (184m to the east) of Sherwood Forest ppSPA. 	Category I and L	Screen in
Policy 24	Strategic Allocation Former Stanton Tip, Hemphill Vale (Nottingham City)	<p>This strategic policy allocates 500 dwellings and a minimum of 5 ha approx. for industry and manufacturing, classes E g (iii), B2 and B8 uses. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
Policy 25	Strategic Allocation Broad Marsh (Nottingham City)	<p>This strategic policy allocates 1,000 apartments and 46,000 sq.m of commercial and office floorspace. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 26	Strategic Allocation Melton Road, Edwalton (Rushcliffe)	<p>This policy allocates housing for around 1,800 dwellings, up to 4 hectares of E(g) use, other employment generating development, and other community facilities as appropriate. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 27	Strategic Allocation Land North of Bingham (Rushcliffe)	<p>This policy allocates additional housing for around 1,000 dwellings and an appropriate mix of E(g), B2 and B8 employment development, a neighbourhood centre and other community facilities as appropriate. The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 28	Strategic Allocation Former RAF Newton (Rushcliffe)	<p>This policy allocates additional housing for around 530 dwellings, protection of existing B8 employment located within the former aircraft hangars, and the provision of additional employment land for E(g), B2 and B8 purposes.</p>	Category L	Screen in

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
		<p>The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>		
Policy 29	Strategic Allocation Former Cotgrave Colliery (Rushcliffe)	<p>This policy allocates 470 dwellings and the provision of around 4.5 hectares of E(g), B2 and B8 employment development.</p> <p>The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 30	Strategic Allocation South of Clifton (Rushcliffe)	<p>This policy allocates mixed-use development including around 3,000 dwellings, around 20 hectares of employment development, a neighbourhood centre and other community facilities as appropriate.</p> <p>The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in
Policy 31	Strategic Allocation East of Gamston / North of Tollerton (Rushcliffe)	<p>This policy allocates 4,000 dwellings, around 15 hectares of employment development, a neighbourhood centre and other community facilities as appropriate.</p> <p>The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p>	Category L	Screen in

Policy Number	Policy Name	Summary of policy and identification of LSEs	Screening Conclusion	HRA Screening
		<ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA Recreational in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>		
Policy 32	Strategic Allocation Former Ratcliffe on Soar Power Station (Rushcliffe)	<p>This policy allocates new development comprising:</p> <p>i) the erection of buildings up to a maximum gross floor area (GFA) of 810,000 m2 to accommodate the following uses:</p> <ul style="list-style-type: none"> Energy Generation & Storage; Advanced Manufacturing & Industrial (Class E(g)(iii) & B2); Data Centre; Logistics (Class B8) up to a maximum of 180,000 m2 (GFA) on the Northern Area only; Research & Development & Offices (Class E(g) (i) & (ii)); Education (Skills and Training) (Class F1(a)), and; Community hub providing complementary services and uses primarily for the occupiers of the Site, including an active travel mobility centre, small scale retail (Class F2(a)), one café/bar (Class E(b)), one hot food takeaway (sui generis), a creche or children's nursery (Class E (f)), a gym or fitness facility (Class E (d)) and one hotel not exceeding 150 beds (Class C1). <p>ii) up to 10 ha of ground-mounted solar power generation within Plot B only.</p> <p>The policy therefore has the potential to have an LSE (as listed below) on a European site or the ppSPA.</p> <ul style="list-style-type: none"> Water quality and water quantity in-combination LSEs on the Humber Estuary SAC and Ramsar, Birkland and Bilhaugh SAC, Hatfield Moor SAC, Thorne Moor SAC and Thorne and Hatfield Moors SPA Air quality in-combination LSEs on the Sherwood Forest ppSPA <p>This allocation is not located within 400m of any European site or the Sherwood Forest ppSPA and therefore urbanisation impacts can be screened out.</p>	Category L	Screen in

Appendix E: Review of habitat types within 200m of screened in road links at the Sherwood Forest ppSPA

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A60 Nottingham Road	97	5883	<p>The A60 runs through the centre of a component of the ppSPA located at Thieves Wood and Harlow Wood.</p> <p>This area of the ppSPA is shown on aerial photography to be dominated by woodland (managed) and scattered scrub. There is also an area of development located both sides and adjacent to the carriageway within the ppSPA.</p> <p>The RSPB's HEaP mapping data shows no existing heathland.</p> <p>Priority habitat inventory data shows areas of deciduous woodland and lowland heathland within 200m of the carriageway.</p> <p>There are blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and woodland (some open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A611 Annesley Road	6278	12757	<p>The A611 Annesley Road runs 137m to the east of a component of the ppSPA located at Wighay Wood to the south of Annesley Park Woods.</p> <p>The area of the ppSPA within 200m of the carriageway is shown on aerial photography to be dominated by woodland (managed).</p> <p>The RSPB's HEaP mapping data shows no existing heathland.</p> <p>Priority habitat inventory data shows areas of deciduous woodland within 200m of the carriageway.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.
A611 Annesley Road North and South Bound	3696	7891	<p>The A611 Annesley Road North and South Bound runs 43m to the north east of a component of the ppSPA located at Wighay Wood to the south of Annesley Park Woods.</p> <p>The area of the ppSPA within 200m of the carriageway is shown on aerial photography to be dominated by woodland (managed).</p> <p>The RSPB's HEaP mapping data shows no existing heathland.</p> <p>Priority habitat inventory data shows areas of deciduous woodland within 200m of the carriageway.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A611 Derby Road (1)	742	2389	<p>The A611 Derby Road (1) runs 50m to the north of a component of the ppSPA located at Nottingham Golf Club.</p> <p>Aerial photography shows arable fields located immediately adjacent to the carriageway along with a number of residential properties. Beyond this scrub and woodland are located within 70m of the carriageway and within the ppSPA.</p> <p>The RSPB's HEaP mapping data shows existing heathland within 200m of the carriageway.</p> <p>Priority habitat inventory data shows that whilst there are no main habitats there are areas of woodland and lowland heath located within 200m of the carriageway.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and woodland (some open in nature) being present. Woodland may be rotationally cropped.
Nottingham Golf Course A611 Derby Road (2)	491	1943	<p>The ppSPA at this location is not underpinned by a SSSI designation.</p> <p>The A611 Derby Road (2) runs immediately adjacent and to the west of a component of the ppSPA located at Thieves Wood.</p> <p>Aerial photography shows managed woodland within 200m of the carriageway which is within the ppSPA designation,</p> <p>The RSPB's HEaP mapping data shows no existing heathland within 200m of the carriageway.</p> <p>Priority habitat inventory data shows areas of deciduous woodland located within 200m of the carriageway.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and woodland (some open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
Nottingham Golf Course A611 Derby Road (3)	742	2389	<p>The A611 Derby Road (3) runs immediately adjacent and to the west of a component of the ppSPA located at Nottinghamshire Golf Course.</p> <p>Aerial photography shows areas of golf course, fields, some scrub and residential properties located within 200m of the A611 Derby Road (3) and within the ppSPA designation.</p> <p>The RSPB's HEaP mapping data shows existing heathland within 200m of the carriageway.</p> <p>Priority habitat inventory data shows that whilst there are no main habitats there are areas of lowland heath located within 200m of the carriageway.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and woodland (much open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
Nottingham Golf Course A611 Derby Road (4)	2166	5586	<p>The A611 Derby Road (4) runs to the west of a component of the ppSPA located to the south west of Nottinghamshire Golf Course.</p> <p>Aerial photography shows residential properties located within 65m of the A611 Derby Road (4), beyond which is an area of scrub and woodland within the ppSPA designation.</p> <p>The RSPB's HEaP mapping data shows that the area of scrub coincides with existing heathland but that this is beyond the residential properties at approximately 200m from the A611.</p> <p>Priority habitat inventory data shows that whilst there are no main habitats there are areas of lowland heath located within 70m of the carriageway (beyond residential areas).</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and some woodland (much open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A614 Old Rufford Road Roundabout	274	1253	<p>The A614 Old Rufford Road Roundabout link roads are on the edge of the 200m buffer at approximately 195m to the north of the ppSPA to the north of Calverton Colliery.</p> <p>Aerial photography shows woodland is located within 200m of this road link and within the ppSPA designation.</p> <p>The RSPB's HEaP mapping data shows that there is no existing heath within 200m of this road link.</p> <p>Priority habitat inventory data shows deciduous woodland habitat along the A614 carriageway but no other records are available for land within 200m of this road link.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A614 Ollerton Road (1)	408	1915	<p>The northern section of the ppSPA is located adjacent (to the east) of the A614 Ollerton Road (1) and the whole length of this road link is within 200m of the ppSPA.</p> <p>Aerial photography shows patches of woodland and scrub is located within 200m of this road link and within the ppSPA designation.</p> <p>The RSPB's HEaP mapping data shows that there is no existing heath within 200m of this road link.</p> <p>Priority habitat inventory data shows deciduous woodland habitat along the A614 carriageway but no other records are available for land within 200m of this road link.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and some woodland (much open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A614 Ollerton Road (2)	497	1585	<p>The ppSPA is located to the immediate east of the A614 Ollerton Road (2) and runs along its length.</p> <p>Aerial photography shows patches of managed woodland is located within 200m of this road link and within the ppSPA designation.</p> <p>The RSPB's HEaP mapping data shows that there is no existing heath within 200m of this road link.</p> <p>Priority habitat inventory data shows deciduous woodland habitat along the A614 carriageway but no other records are available for land within 200m of this road link.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	<p>Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.</p>

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A617 Rainworth Bypass (1)	-1504	3474	<p>The ppSPA is located to the north of the A617 Rainworth Bypass (1) link and immediately adjacent to it.</p> <p>Aerial photography shows that woodland and scrub is located within the ppSPA at this location which appears to be managed woodland.</p> <p>The RSPB's HEaP mapping data shows that there is no existing heath within the ppSPA and within 200m of this road link.</p> <p>Priority habitat inventory data shows a small area of deciduous woodland habitat and a small area which does not classify the main habitat but which suggests lowland heath may be present within 200m of the A617 at the ppSPA.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	<p>Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.</p>

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
A617 Rainworth Bypass (2)	1530	7253	<p>The ppSPA is located to the north of the A617 Rainworth Bypass (2) link and immediately adjacent to it.</p> <p>Aerial photography shows woodland and scrub is located within the ppSPA at this location which appears to be managed woodland in some areas.</p> <p>The RSPB's HEaP mapping data shows no existing heath at this section of the ppSPA.</p> <p>Priority habitat inventory data shows a small area of deciduous woodland habitat and a small area which does not classify the main habitat, but which suggests lowland heath may be present within 200m of the A617 at the ppSPA.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>Part of the ppSPA at this location coincides with the Rainworth SSSI.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and some woodland (much open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
B6020 Blidworth Road	208	1023	<p>The ppSPA is located to the north and immediately adjacent to the B6020 Blidworth Road.</p> <p>Aerial photography shows woodland and scrub habitat is located within the ppSPA at this location which appears to be managed in some areas.</p> <p>The RSPB's HEaP mapping data shows one component of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data shows a number of small areas of deciduous woodland habitat within the ppSPA at this location.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and some woodland (much open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
B6021 Nottingham Road	1091	3703	<p>The B6021 Nottingham Road is located approximately 102m to the west of the ppSPA. There is road infrastructure and residential development between the ppSPA and this road link.</p> <p>Aerial photography shows scrub habitat is located at the ppSPA within 200m of the B6021.</p> <p>The RSPB's HEaP mapping data shows one extensive component of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data does not indicate one main habitat type at this location, but other habitats include lowland heathland.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and some woodland (much open in nature) being present. Woodland may be rotationally cropped.
B6021 Shoulder of Mutton Hill	1021	3933	<p>The ppSPA is located within 200m of the B6021 beyond the A611.</p> <p>Aerial photography shows scrub habitat is located at the ppSPA within 200m of the B6021.</p> <p>The RSPB's HEaP mapping data shows one extensive component of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data does not indicate one main habitat type at this location, but other habitats include lowland heathland.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and some woodland (much open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
B6139 Coxmoor Road	1881	2274	<p>The B6139 runs through the ppSPA at this location at Normanshill Wood. The ppSPA is adjacent to both sides of the carriageway.</p> <p>Aerial photography indicates that there is woodland and scrub habitat within this area of the ppSPA.</p> <p>The RSPB's HEaP mapping data shows one component of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data indicates that there are areas of deciduous woodland within this area of the ppSPA and also areas which are not classified for one main habitat type at this location, but where other habitats include lowland heathland.</p> <p>There are no blocks of ancient woodland located within 200m of the carriageway.</p> <p>The ppSPA at this location is not underpinned by a SSSI designation.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and woodland (much open in nature) being present. Woodland may be rotationally cropped.
Jubilee Way South	169	1277	<p>Jubilee Way South is located within 65m of the ppSPA at this location. Aerial mapping indicates that there are residential areas separating this road link from the ppSPA. The ppSPA at this location is scrub habitat.</p> <p>The RSPB's HEaP mapping data shows one component of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data indicates that there are areas of lowland heathland within this area of the ppSPA.</p> <p>There are no blocks of ancient woodland located in areas of the ppSPA which are within 200m of this road link.</p> <p>The ppSPA at this location is underpinned by Strawberry Hill Heaths SSSI.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and woodland (much open in nature) being present. Woodland may be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
Longdale Lane (1)	579	1008	<p>Longdale Lane (1) is an unclassified road link, which at this location, is located to the immediate west of the ppSPA.</p> <p>Aerial photography shows planted woodland within the ppSPA within 200m of Longdale Lane (1).</p> <p>The RSPB's HEaP mapping data shows no components of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data indicates that there are areas of deciduous woodland within this area of the ppSPA.</p> <p>There are no blocks of ancient woodland located in areas of the ppSPA which are within 200m of this road link.</p> <p>The ppSPA at this location is not underpinned by a SSSI.</p>	Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.
Longdale Lane (2)	752	1761	<p>Longdale Lane (2) is an unclassified road link, which at this location, runs through the ppSPA.</p> <p>Aerial photography shows planted woodland within the ppSPA within 200m of Longdale Lane (2).</p> <p>The RSPB's HEaP mapping data shows no components of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data indicates that there are areas of deciduous woodland within this area of the ppSPA.</p> <p>There are no blocks of ancient woodland located in areas of the ppSPA which are within 200m of this road link.</p> <p>The ppSPA at this location is not underpinned by a SSSI.</p>	Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.

Road link name	Impact of the GNSP alone	Impact of the GNSP in-combination	Habitat types within 200m of road link and within ppSPA designation	Comments
M1	2365	18479	<p>The ppSPA is located at its closest point approximately 10m to the east of the M1 at this location.</p> <p>Aerial photography indicates woodland planting.</p> <p>The RSPB's HEaP mapping data shows no components of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data indicates that there are small areas of deciduous woodland within this area of the ppSPA to the north.</p> <p>There are blocks of ancient woodland located in areas of the ppSPA which are within 200m of this road link.</p> <p>The ppSPA at this location is not underpinned by a SSSI.</p>	Potential for an element of open mosaic habitat which would meet lifecycle stages for woodlark and nightjar - with woodland being present. However, absence of heath may limit nesting opportunities. Woodland may also be rotationally cropped.
Oak Tree Lane	414	3103	<p>Oak Tree Lane is an unclassified road link approximately 170m to the west of the ppSPA. Aerial photography indicates that habitat within 200m of this road link comprises scrub. Residential areas are located between the ppSPA and this road link.</p> <p>The RSPB's HEaP mapping data shows no components of existing heathland at the ppSPA in this location.</p> <p>Priority habitat inventory data indicates that there are areas of lowland heath within this area of the ppSPA to the north.</p> <p>There are no blocks of ancient woodland located in this area of the ppSPA.</p> <p>The ppSPA at this location is underpinned by Strawberry Hill Heaths SSSI.</p>	Potential for an open mosaic of habitats which would meet all lifecycle stages for woodlark and nightjar - with heathland and woodland (much open in nature) being present. Woodland may be rotationally cropped.

Habitats Regulations Assessments

Sustainability Appraisals

Strategic Environmental Assessments

Landscape Character Assessments

Landscape and Visual Impact Assessments

Green Belt Reviews

Expert Witness

Ecological Impact Assessments

Habitat and Ecology Surveys

Biodiversity Net Gain



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