

Habitats Regulations Assessment of the Newark and Sherwood Local Plan Review

HRA Screening Document

July 2017



LEPUS CONSULTING
LANDSCAPE, ECOLOGY, PLANNING & URBAN SUSTAINABILITY

Habitat Regulations Assessment of the Newark & Sherwood Local Plan Review: Strategy Sites and Settlements Town Centres and Retail

Final Version

LC-229	Document Control Box
Client	Newark & Sherwood District Council
Report Title	Habitats Regulations Assessment of the Newark & Sherwood Local Plan Review
Status	Final
Filename	NSDC re-screen HRA _4_ 070717JE.docx
Date	July, 2017
Author	JE
Reviewed	NJD
Approved	NJD

Photo: Sherwood Forest by Lee Hayward

Contents

Executive Summary	6
1 Introduction	8
1.1 Background	8
1.2 Report Outputs	10
1.3 Regulations, Guidance and Methodology	11
1.4 About the Local Plan Review	12
2 Methodology	14
2.1 Habitats Regulations Assessment Methodology	14
2.2 Dealing With Uncertainty.....	15
2.3 Precautionary Principle.....	15
2.4 Likely Significant Effect.....	15
2.5 Limitations	16
2.6 HRA Process So Far	16
3 European sites	19
3.1 About European sites.....	19
3.2 Identification of relevant European sites.....	19
3.3 Threats and pressures.....	19
4 In-Combination Effects	22
4.1 Mansfield and Bassetlaw	22
5 Birklands & Bilhaugh SAC	25
5.1 Background.....	25
5.2 Sites of Special Scientific Interest	26
5.3 Initial Screening Report	27
5.4 Public Access and Associated Disturbances.....	27
5.5 Disease	28
5.6 Human Induced Hydraulic Changes.....	29
5.7 Air Pollution.....	29
6 Sherwood Forest ppSPA.....	35
6.1 Background.....	35
6.2 Nightjar and woodlark.....	37
6.3 Loss and fragmentation of habitats.....	39
7 Cat Predation at Sherwood Forest ppSPA	41
7.1 Comments from Natural England.....	41
7.2 Background data.....	41

7.3	LPR & Cat Predation	44
7.4	Ra/Ho/1 - Rainworth.....	45
7.5	OB/Ho/2 Land adjacent to Hollies Close	46
7.6	ShAP4 Thoresby Colliery	47
7.7	Conclusions	50
8	Dog Disturbances at Sherwood Forest ppSPA	51
8.1	Background data.....	51
8.2	NSDC Local Plan & disturbance from dog walkers.....	55
8.3	Bl/Ho/1, Bl/Ho/2 & Bl/Ho/3 - Blidworth.....	57
8.4	Bi/MU/1 & Bi/Ho/2 - Bilsthorpe.....	59
8.5	OB/Ho/2, OB/MU/1 & OB/MU/2 - Ollerton & Boughton	60
8.6	Ra/Ho/1 & Ra/Ho/2 - Rainworth	61
8.7	Ed/Ho/2 & ShAP4 - Edwinstowe	63
8.8	Conclusions	64
9	Conclusions and mitigation.....	65
9.1	Birkland and Bilhaugh SAC	65
9.2	Nightjar and woodlark.....	65

Appendices

Appendix A	Conservation objectives for European Sites
Appendix B	European sites and current threats and pressures
Appendix C	Summary screen of LPR Preferred Approach – Strategy
Appendix D	Summary screen of LPR Preferred Approach – Sites & Settlements
Appendix E	Summary screen of LPR Preferred Approach – Centres & Retail
Appendix F	Map illustrating Important Bird Areas of Sherwood Forest ppSPA

Figures

Figure 2.1	Summary flow chart of HRA process
Figure 4.1	Neighbours of Newark and Sherwood
Figure 7.1	Ra/Ho/1 in relation to Sherwood Forest ppSPA
Figure 7.2	OB/Ho/2 in relation to Sherwood Forest ppSPA
Figure 7.3	ShAP4 in relation to Sherwood Forest ppSPA
Figure 8.1	Site allocations within 5km of Sherwood Forest ppSPA
Figure 8.2	Residential site allocations within 5km of Sherwood Forest ppSPA
Figure 8.3	Bl/Ho/3 Blidworth and IBAs
Figure 8.4	Residential site allocations in Bilsthorpe in relation to IBAs
Figure 8.5	Residential site allocations in Ollerton & Boughton in relation to IBAs
Figure 8.6	Residential site allocations in Rainworth in relation to IBAs
Figure 8.7	Residential site allocations in Edwinstowe in relation to IBAs
Figure F.1	Map illustrating Important Bird Areas of Sherwood Forest ppSPA

Tables

Table 3.1	Threats and pressures for each European site identified as potentially being affected by the Local Plan Review
Table 8.1	Residential site allocations within 5km of Sherwood Forest ppSPA
Table 9.1	Mitigation strategy for nightjar and woodlark

Acronyms

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ANGSt	Accessible Natural Greenspace Standards
AQMA	Air Quality Management Area
CAMS	Catchment Area Management Strategy
DEFRA	Department for Environment, Food, and Rural Affairs
EA	Environment Agency
ERF	Energy Recovery Facility
EU	European Union
GIS	Geographic Information Systems
HRA	Habitats Regulations Assessment
IBA	Important Bird Area
IPENS	Improvement Programme for England's Natura 2000 sites
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
LPA	Local Planning Authority
LPR	Local Plan Review
LSE	Likely Significant Effect
MENE	Monitor of Engagement with Natural Environment
MoU	Memorandum of Understanding
NCA	Natural Character Area
NE	Natural England
NPPF	National Planning Policy Framework
RSPB	Royal Society for the Protection of Birds
ppSPA	Possible Potential Special Protection Area
SAC	Special Area of Conservation
SANGS	Suitable Alternative Natural Greenspace
SIP	Site Improvement Plan
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
TBH	Thames Basin Heaths
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone

Executive Summary

- E1** Lepus Consulting has prepared this Habitats Regulations Assessment (HRA) report of the Newark and Sherwood Local Plan Review (LPR) on behalf of Newark & Sherwood District Council. This is a requirement of Regulation 102 of the Conservation of Habitats and Species Regulations 2010¹ (the Habitats Regulations).
- E2** In March 2016 Lepus completed an HRA scoping report on behalf of Newark & Sherwood District Council. This report identified what Lepus anticipated to be the key HRA issues in the District. In December 2016 Lepus completed an initial HRA screening report. Natural England were consulted on this report, with whom it was agreed that the following Likely Significant Effects (LSEs) cannot currently be objectively ruled out:
- An LSE on Birklands & Bilhaugh SAC due to air pollution stemming from traffic on roads within 200m of the SAC caused by developments in the LPR;
 - An LSE due to pet cat predation of nightjar and woodlark stemming from the increase in the number of pet cats within 400m of Important Bird Areas; and
 - An LSE of pet dogs disturbing nightjar and woodlark due to the increase in dogs being walked in Important Bird Areas.
- E3** It was also agreed that the cumulative impacts of the scale of the development proposed in the LPR, in combination with other plans and projects, requires further consideration. This report constitutes a screening of the LPR that includes a more detailed assessment of the above LSEs, considers appropriate mitigation measures and assesses the in-combination effects.
- E4** Based on the conclusions of the Redmore Environmental Air Quality Assessments, and in agreement with Natural England, it is considered that an LSE on Birkland and Bilhaugh SAC due to air pollution can be objectively ruled out at this stage.

¹ UK Government, (2010), The Conservation of Habitats and Species Regulations 2010

-
- E5** The extent to which disturbances and predation from pet dogs and cats may result in an LSE on nightjar and woodlark is investigated in further detail in **Chapter 7** and **Chapter 8**. It is considered that, in the absence of appropriate mitigation, the scale of development proposed in the LPR could potentially have an adverse impact on the local population of nightjar and woodlark.
- E6** However, Core Policy 12: Biodiversity & Green Infrastructure of the LDF Core Strategy DPD, and Policy DM 7: Biodiversity & Green Infrastructure of the LDF Allocations & Development Management DPD, require the Council to conserve and enhance the biodiversity and geodiversity assets of the District. The council is therefore committed to conserving and enhancing the habitats and populations of nightjar and woodlark. Where development may impact on these Annex 1 bird species, appropriate mitigation will be adopted, the details of which should be decided at the reserve matters stage. Appropriate measures should also be put in place to monitor the impacts of development and the extent of the success of mitigation. Recommendations for suitable mitigation measures are put forward by Lepus in **Chapter 9**.
- E7** The Council is considered to have made best endeavours to protect the nightjar and woodlark through the adoption of Core Policy 12 and Policy DM 7. The Council is committed to ensuring adequate mitigation measures are adopted where development may adversely impact nightjar and woodlark. It is therefore concluded that an LSE on nightjar and woodlark, as a result of the scale of the development the LPR is proposing, can be ruled out at this stage.

1 Introduction

1.1 Background

1.1.1 Lepus Consulting has prepared this Habitats Regulations Assessment (HRA) report of the Newark and Sherwood Local Plan Review (LPR) on behalf of Newark & Sherwood District Council. This is a requirement of Regulation 102 of the Conservation of Habitats and Species Regulations 2010² (the Habitats Regulations). The LPR consists of the amendments to the Local Plan set out in three Preferred Approach documents:

- Preferred Approach - Strategy;
- Preferred Approach - Sites & Settlements; and
- Preferred Approach - Town Centre & Retail.

1.1.2 The LPR also includes any subsequent amendments made in light of consultation responses.

1.1.3 The following European sites were identified using a 15km area of search around the district of Newark and Sherwood, as well as including sites which are potentially connected (e.g. hydrologically) beyond this distance:

- Birklands & Bilhaugh SAC; and
- Sherwood Forest ppSPA.

² UK Government, (2010), The Conservation of Habitats and Species Regulations 2010

- 1.1.4 European Sites provide valuable ecological infrastructure for the protection of rare, endangered or vulnerable natural habitats and species of exceptional importance within Europe. These sites consist of Special Areas of Conservation (SACs), designated under the Habitats Directive, and Special Protection Areas (SPAs), classified under European Directive 2009/147/EC *on the conservation of wild birds* (the Birds Directive). Additionally, Government policy requires that sites listed under the Ramsar Convention (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat) are to be treated as if they are fully designated European sites for the purpose of considering development proposals that may affect them.
- 1.1.5 The two European sites identified for assessment during baseline research are illustrated in **Figure 4.1** and listed in **Table 4.1**. Birkland and Bilhaugh SAC is entirely within the district. Some parcels of Sherwood Forest ppSPA are also within the district whilst others are outside. Both European sites considered in this assessment are within 15km of the Newark and Sherwood district border.
- 1.1.6 The phrase 'European site' refers to Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) unless otherwise stated. Sherwood Forest ppSPA is a possible potential Special Protection Area. Based on breeding populations of nightjar and woodlark, Natural England view a future recommendation for SPA classification of Sherwood Forest as being possible³. Natural England therefore recommends adopting a 'risk-based' approach whereby Local Planning Authorities assess and mitigate the likely impacts of all proposals on the nightjars and woodlarks of Sherwood Forest.

³ 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

1.1.7 There is no legal obligation to include Sherwood Forest ppSPA in this assessment. However, in accordance with Natural England's advice, it will be included to ensure that all potential harmful impacts of the Local Plan Review on the breeding populations of nightjar and woodlark in the Sherwood Forest area can be adequately avoided or minimised. For the purpose of this report, Sherwood Forest ppSPA will be included in the term 'European site'.

1.1.8 The full list of the nature of, and conservation objectives of, both sites can be found in **Appendix A** and they are explored further in this report. Whilst Sherwood Forest ppSPA is defined by its woodlark (*Lullula arborea*) and nightjar (*Caprimulgus europaeus*) qualifying features, Birklands and Bilhaugh SAC is defined by its dry-oak dominated woodland on sandy plains.

1.2 Report Outputs

1.2.1 The outputs of this report include information in relation to:

- The HRA process;
- Methodology for HRA;
- Evidence gathering in relation to European sites;
- Conservation objectives of sites;
- Understanding threats and pressures relevant to each site;
- Assessment of likely significant effects on European Sites;
- Considerations of how to mitigate impacts; and
- Conclusions and recommendations.

1.2.2 This report comprises a screening assessment under the Habitats Regulations, which is the first step in assessing any likely significant effects of development proposals in the LPR. This report sets the baseline with regards to European sites and determines whether the development proposed in the LPR is likely to have any significant effects on these sites.

1.2.3 LSEs identified during screening will be evaluated in detail to precisely address their potential nature, magnitude and permanence. Should an adverse effect be certain then consideration will be given to mitigating these impacts. Should there be sufficient doubt that an adverse effect cannot be ruled out, then the precautionary and preventive principles will come into play.

1.2.4 This report constitutes the screening and appropriate assessment stages of **Figure 2.1**.

1.3 Regulations, Guidance and Methodology

1.3.1 The application of HRA to land-use plans is a requirement of the Conservation of Habitats and Species Regulations 2010, the UK's transposition of European Directive 92/43/EEC *on the conservation of natural habitats and of wild fauna and flora* (the Habitats Directive). HRA applies to plans and projects, including all Local Development Documents in England and Wales.

1.3.2 This HRA has been informed by the following guidance:

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites' - European Commission, 2001⁴;
- The Habitat Regulations Assessment Handbook - David Tyldesley and Associates, 2013 (in particular Part F: '*Practical Guidance for the Assessment of Plans under the Regulations*'); and
- The Appropriate Assessment of Spatial Plans in England - A Guide to How, When and Why to do it - RSPB, 2007.

⁴ Assessment of plans and projects significantly affecting European sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission Environment DG, November 2001

1.4 About the Local Plan Review

1.4.1 Newark and Sherwood has an Objectively Assessed Housing Need of 454 dwellings per annum, or a total of 9,080 dwellings, over the 2013 - 2033 period⁵. In order to ensure the continuation of sustainable development in Newark & Sherwood the District Council is undertaking a review of their current planning policy. The Council is at the stage of preparing their 'Preferred Approach' to the Plan Review. This includes three parts which are considered in this assessment:

- Preferred Approach - Strategy;
- Preferred Approach - Sites & Settlements; and
- Preferred Approach - Town Centre & Retail.

1.4.2 The main aim of the LPR is to ensure that all the allocations and policies contained within the Core Strategy DPD and the Allocations & Development Management DPD continue to be appropriate, up-to-date and effective.

Preferred Approach for Strategy

1.4.3 The Preferred Approach - Strategy document focuses on updating policies of the Core, Spatial and Area Strategies. Summary screening of this document can be seen in **Table C.1** in **Appendix C**.

Preferred Approach for Sites & Settlements

1.4.4 The Sites & Settlements Preferred Approach document cites the number of dwellings required in the District as being 3,707. Following a review of allocations, the number of dwellings that is available is considered to be 5,556. 83.1ha of employment land was also required and, following a review of allocations, it is considered that 203.13ha of land is available. Each proposal has been either screened in or out of further assessment depending on the likelihood of a significant effect on a European site. The findings of this process can be found in **Appendix D**.

⁵ Newark & Sherwood Local Development Framework (2015) Plan Review, Issue Paper, October 2015

- 1.4.5 Within the Preferred Approach - Sites & Settlements document are proposals to redevelop Thoresby Colliery. Thoresby Colliery closed in 2015 and 800 dwellings, up to 8ha of employment land, a primary school and associated infrastructure are proposed for the site. The document recognises the proximity of Thoresby Colliery to Birklands and Bilhaugh SAC and Sherwood Forest ppSPA. There are several proposals in the Local Plan Review (LPR) to mitigate the effects of these developments on the qualifying features of both European sites.

Preferred Approach for Retail & Town Centres

- 1.4.6 The Preferred Approach – Retail & Town Centres document sets out the various options and preferred approaches for amendments to Town Centre uses and retail policies. Summary screening of this document can be seen in **Table E.1** in **Appendix E**.

2 Methodology

2.1 Habitats Regulations Assessment Methodology

- 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 designated European Sites are protected from impacts that could adversely affect their integrity, as required by the Birds and Habitats Directives. A step-by-step guide to this methodology is outlined in the Practical Guidance and has been reproduced in **Figure 2.1**.
- 2.1.2 Should a significant effect on a European Site be considered likely, further assessment is usually required to establish a better understanding of potential effects and their nature, magnitude and permanence. The findings of the HRA inform the decision making of planners on how to intervene.
- 2.1.3 The hierarchy of intervention is important: where significant effects are likely or uncertain, plan makers must firstly seek to avoid the effect through, for example, a change of policy. If this is not possible, mitigation measures should be explored to remove or reduce the significant effect. If neither avoidance nor mitigation is possible, alternatives to the Plan should be considered. Such alternatives should explore ways of achieving the Plan's objectives that do not adversely affect European sites.
- 2.1.4 Measures should be proportionate to the level of risk, and to the desired level of protection. They should be provisional in nature pending the availability of more reliable scientific data. If no suitable alternatives exist, plan-makers must demonstrate under the conditions of Regulation 103 of the Habitats Regulations that there are Imperative Reasons of Overriding Public Interest (IROPI) in order to continue with the proposal.
- 2.1.5 Natural England, or the relevant statutory body, is also consulted over the findings of the HRA.

2.2 Dealing With Uncertainty

2.2.1 Uncertainty is an inherent characteristic of HRA and decisions can be made only on the currently available and relevant information. This concept is reinforced in the 7th September 2004 ‘Waddenzee’ ruling⁶:

2.2.2 *“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.”*

2.3 Precautionary Principle

2.3.1 Because there is an element of uncertainty, the HRA process is characterised by the precautionary principle. This is described by the European Commission as being:

*“If a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment, or on human, animal or plant health, which would be inconsistent with protection normally afforded to these within the European Community, the **Precautionary Principle** is triggered.”*

2.4 Likely Significant Effect

2.4.1 The Local Plan and its component policies are assessed to determine and identify any potential for ‘**likely significant effect**’ (LSE) upon European sites. The guidance provides the following interpretation of LSE:

⁶EC Case C-127/02 Reference for a Preliminary Ruling ‘Waddenzee’ 7th September 2004 Advocate General’s Opinion (para 107)

2.4.2 *“In this context, ‘likely’ means risk or possibility of effects occurring that cannot be ruled out on the basis of objective information. ‘Significant’ effects are those that would undermine the conservation objectives for the qualifying features potentially affected, either alone or in combination with other plans or projects... even a possibility of a significant effect occurring is sufficient to trigger an ‘appropriate assessment’.”⁷*

2.4.3 With reference to a species given conservation status in the Habitats or Birds Directives, the following examples would be considered to constitute a significant effect:

- Any event which contributes to the long-term decline of the population of the species on the site;
- Any event contributing to the reduction or to the risk of reduction of the range of the species within the site; and
- Any event which contributes to the reduction of the size of the habitat of the species within the site.

2.5 Limitations

2.5.1 This report has been prepared using the best available data. References are cited in the text where appropriate.

2.6 HRA Process So Far

2.6.1 In March 2017 Lepus completed an HRA scoping report on behalf of Newark & Sherwood District Council. This report identified what Lepus anticipated to be the key HRA issues in the District. In December 2016 Lepus completed an initial HRA screening report. This report considered the impacts of policies proposed in the LPR on European sites and was sent to Natural England, the relevant statutory body, for their comments and review.

⁷Tyldesley, D. (2013) The Habitats Regulations Assessment Handbook – Chapter F. DTA Publications

2.6.2 Natural England responded to the initial HRA screening report in their letter dated 08 March 2017 (ref: 206193). In agreement with Natural England, it is considered that the following LSEs cannot yet be objectively ruled out based on the currently available information:

- An LSE on Birklands & Bilhaugh SAC due to air pollution stemming from traffic on roads within 200m of the SAC caused by developments in the LPR;
- An LSE on Sherwood Forest ppSPA due to cat predation stemming from the increase in the number of pet cats within 400m of IBAs for both nightjar and woodlark; and
- An LSE on Sherwood Forest ppSPA due to the increase in disturbances from pet dogs being walked in IBAs for both nightjar and woodlark.

2.6.3 Each of these LSEs will be explored further in this report to more precisely establish their potential nature, magnitude and permanence. Where appropriate, Lepus has recommended mitigation measures that would be considered to be effective in minimising the adverse impacts of potential development, although it is anticipated that details of mitigation will be finalised and agreed on at the reserve matters stage.

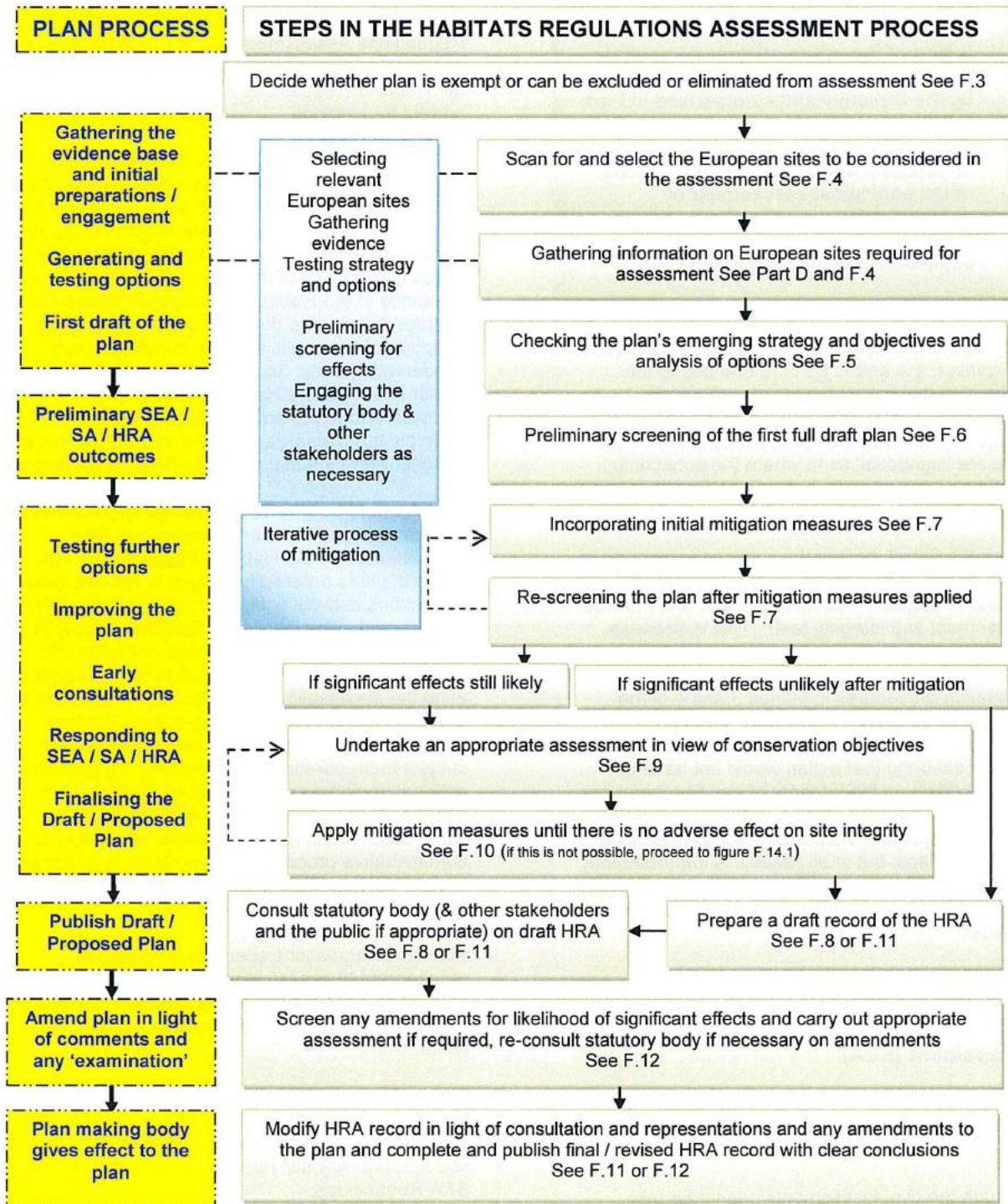


Figure 2.1: Relationship of steps in the Habitats Regulations Assessment with a typical plan-making process (reproduced from DTA, 2013⁸)

⁸ Tyldesley, D. (2013) The Habitats Regulations Assessment Handbook – Chapter F. DTA Publications

3 European sites

3.1 About European sites

3.1.1 Each site of European importance has its own intrinsic qualities, besides the habitats or species for which it has been designated, that enables the site to support the ecosystems that it does. 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 (pressures and threats).

3.2 Identification of relevant European sites

3.2.1 During the HRA Screening process, as a starting point to explore and identify which European sites might be affected by the Local Plan, a 15km area of search was applied from the Newark & Sherwood District boundary (see **Figure 3.1**). The following European Sites were identified:

- Birklands & Bilhaugh SAC; and
- Sherwood Forest ppSPA.

3.3 Threats and pressures

3.3.1 The conservation objectives and qualifying features of each of these sites are listed in **Appendix A**. All of the threats and pressures these sites are vulnerable to are listed in **Appendix B**. This information is drawn from the Joint Nature Conservancy Council (JNCC) and Natural England (NE).

3.3.2 Some threats and pressures are considered to be clearly beyond the scope of the development proposed in the LPR, or are considered under a similar threat or pressure, and are therefore removed from further discussion. This includes:

- Change in land management;
- Invasive species;
- Modification of cultivation practices;
- Physical modification; and

- Planning permission: general.

3.3.3 **Table 3.1** therefore displays the full list of European sites relevant to this assessment and the threats/pressures they are under that may be affected by development proposed in the LPR.

Table 3.1: Pressures and threats for European sites that may be affected by development proposed in the LPR are highlighted in yellow. AQF stands for all qualifying features, the list of which can be seen in **Appendix A**.

Threat or Pressure	Birklands & Bilhaugh SAC	Sherwood Forest ppSPA
Air pollution	AQF	n/a
Disease	AQF	n/a
Human induced hydraulic changes	AQF	n/a
Loss or fragmentation of habitat	n/a	AQF
Public access/ disturbance	AQF	AQF

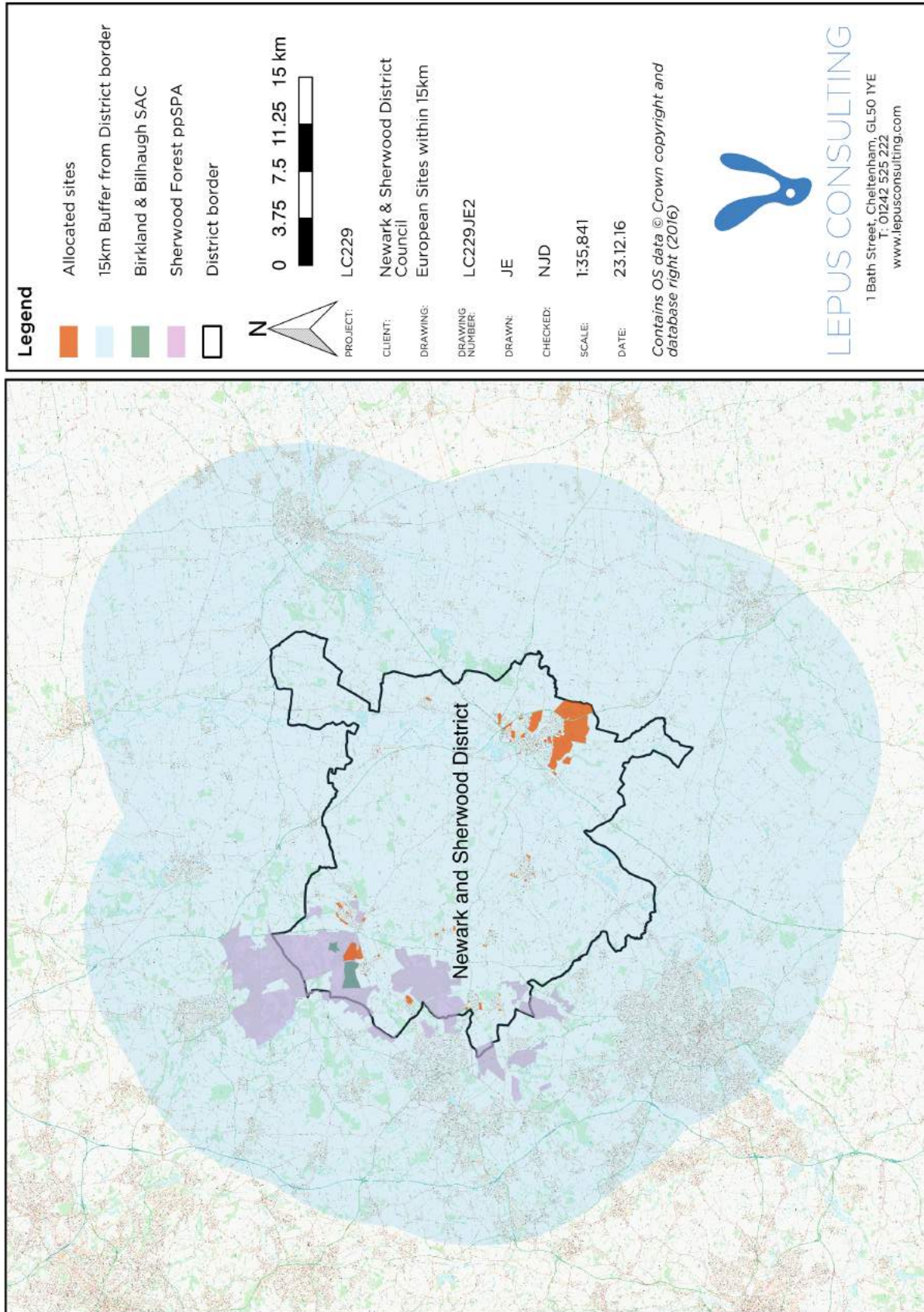


Figure 3.1: European Sites identified within 15km of the Newark and Sherwood District Border and considered in this HRA

4 In-Combination Effects

4.1 Mansfield and Bassetlaw

4.1.1 It is important to consider the cumulative impacts of the development proposed in the LPR in-combination with other plans and projects. In response to the initial HRA screening, Natural England advised in this regard:

4.1.2 *“We suggest that other plans and projects that may contribute to a significant effect on both the SAC and the ppSPA should be fully considered.”*

4.1.3 Neighbouring districts and boroughs of Newark and Sherwood are illustrated in **Figure 4.1**. Birklands & Bilhaugh SAC and Sherwood Forest ppSPA are located in the north west of the District. The residential site allocations in the LPR that could potentially impact on the EU sites are in the north west of the District. It is considered that the development in the districts of Bassetlaw and Mansfield could potentially act in combination with these site allocations to have a cumulative impact on the European Sites.

4.1.4 The Mansfield Local Plan, once adopted, will cover development in the district from up to 2033. It proposes a total of 7,520 dwellings, 720 of which will be in the Warsop Parish. The remaining 6,800 homes are currently anticipated to be located in Mansfield Town Centre and Mansfield Woodhouse district centre.

4.1.5 The Mansfield Local Plan HRA identifies no LSEs on European Sites as a result of the Mansfield Local Plan either alone or in combination with other plans or projects, including the Newark & Sherwood Local Plan Review. In relation to Sherwood Forest ppSPA, the Mansfield Local Plan proposes that all development within 400m of the ppSPA is subject to application specific assessment to determine whether any adverse effect on the nightjar and woodlark would arise.

4.1.6 The strong network of green infrastructure in Mansfield, including the open spaces and woodlands around the District, will offset increases in recreational pressures on the ppSPA as well as Birkland & Bilhaugh SAC.

4.1.7 Bassetlaw District Council adopted their Core Strategy in 2011 and are drafting their emerging Bassetlaw Plan. Bassetlaw aim to build an additional 3,700 dwellings between 2019 and 2034. The HRA report for this Plan is not currently available. The nearest urban areas of Bassetlaw are more than 10km from areas of Sherwood Forrest ppSPA in Newark & Sherwood District as well as Birkland & Bilhaugh SAC. It is therefore considered that a cumulative impact of the Plans in combination through increasing dog disturbances and pet cat predation on the qualifying features of Sherwood Forest ppSPA is unlikely. It is also considered unlikely that the emerging Bassetlaw Plan would act in combination with the Newark and Sherwood LPR to increase air pollution at Birkland & Bilhaugh SAC via increasing traffic on nearby roads.

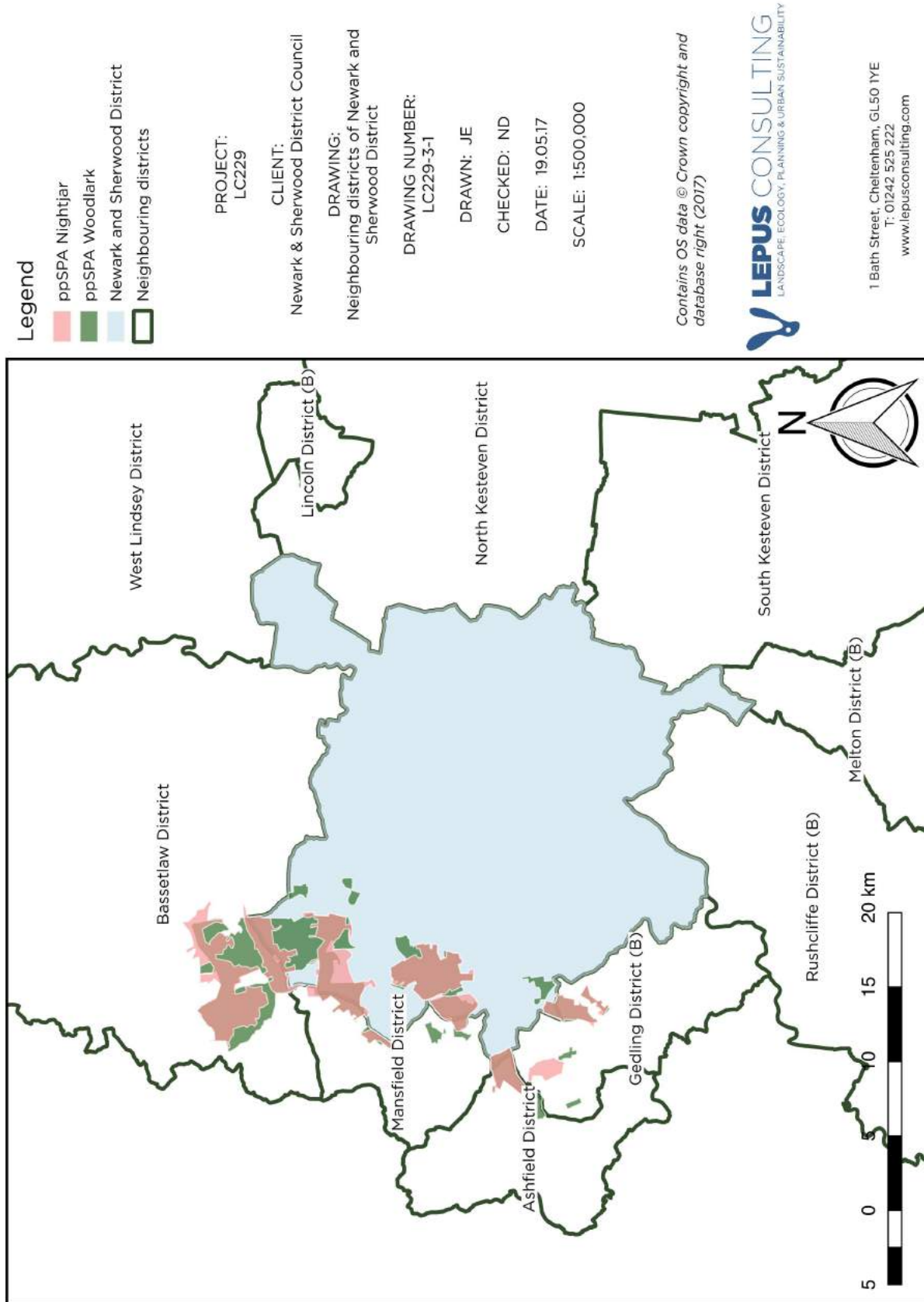


Figure 4.1: Neighbours of Newark & Sherwood District and Sherwood Forest ppSPA.

5 Birklands & Bilhaugh SAC

5.1 Background

5.1.1 Birklands & Bilhaugh SAC represents the only SAC in the district or within 15km of its border. This 271.84ha remnant of the historic Sherwood Forest was designated as a SAC because of its qualifying feature 'old acidophilous oak woods with *Quercus robur* on sandy plains: Dry oak-dominated woodland (H9190)'.

5.1.2 Located in the Pennine rain shadow, it receives an average of just 62.5cm precipitation per annum⁹. The sandy soil derives from underlying Sherwood Sandstones and allows for sudden drops in temperature during the night. With an average annual temperatures of 9.4°C, temperatures hit a maximum in July and a minimum in January.

5.1.3 In order to maintain the integrity of Birklands & Bilhaugh SAC, and to ensure it continues to contribute to the aims of the Habitats Directive, it is important to maintain and restore:

- The extent and distribution of dry oak-dominated woodland habitats;
- The structure and function (including typical species) of dry oak-dominated woodland habitats; and
- The supporting processes on which dry oak-dominated woodland habitats rely.

5.1.4 With these key environmental conditions in mind, the following effects would be considered to be significant:

- Any event which contributes to the decline of the extent and distribution of dry oak woodland habitats;
- Any event that undermines the structure and function (including typical species) of dry oak woodland habitat; and
- Any event which undermines the supporting processes on which dry

⁹ Natural England (2016) European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features – Birklands and Bilhaugh Special Area of Conservation (SAC) (UK0012740) 27.05.16

oak woodland habitats rely.

5.2 Sites of Special Scientific Interest

5.2.1 Sites of Special Scientific Interest (SSSI) are areas in the United Kingdom designated for conservation by Natural England. SSSIs are the building blocks of site based nature conservation in the UK. Most other conservation designations, such as national nature reserves as well as SPAs and SACs, are based on their location.

5.2.2 An SSSI will be designated based on the characteristics of its fauna, flora, geology and/or geomorphology. The reasons for its designation can be entirely different to those for which the same area is designated as a SAC or SPA.

5.2.3 Natural England periodically assesses the conservation conditions of each SSSI unit, assigning it a status of one of the following:

- Favourable;
- Unfavourable – recovering;
- Unfavourable – no change; or
- Unfavourable – declining.

5.2.4 It is important to bear in mind that the SSSI may be in an unfavourable state due to the condition of features unrelated to its European designation. However, it is considered that the conservation status of SSSI units that overlap with European designated sites offer a useful indicator of habitat health at that location. For example, an SSSI unit in an unfavourable condition because of excess nitrogen deposition, which is resulting in changes in local flora species composition, may indicate that habitats at this location are particularly sensitive to increases in atmospheric nitrogen deposition.

5.2.5 Birklands & Bilhaugh SAC overlaps with Birklands & Bilhaugh SSSI. The SSSI is comprised of four units, three of which are recognised by Natural England as having a conservation status of 'Unfavourable - recovering'. The fourth SSSI unit, 'Visitor centre & facilities (012)', has a conservation status of 'Unfavourable - no change'. This is directly related to public access and associated disturbances. In particular, the unit contains ancient woodland and veteran trees within close proximity of the visitor centre and car park. As such, future developments in the area would need to take account of the potential to adversely affect the veteran trees of this SSSI. No adverse impacts on the SSSI units as a result of air pollution have been recorded.

5.3 Initial Screening Report

5.3.1 In the initial HRA screening report completed by Lepus, the LPR was assessed in terms of the extent to which it may exacerbate the threats and pressures to which the SAC is vulnerable (see **Table 3.1**). It was considered that an LSE on the SAC, as a result of public access associated disturbances, hydraulic changes and/or disease could be objectively ruled out based on the currently available information, the reasons for which are summarised below. Natural England agreed with their findings in their letter dated 08 March 2017 (ref: 206193).

5.4 Public Access and Associated Disturbances

5.4.1 Relocating the visitor centre and car park will help alleviate public access and associated disturbances on the SAC. The site has a history of surges in visitor numbers, with peak counts of up to one million visits a year in the 1990s. Development proposals in the LPR include the provision of Suitable Alternative Natural Greenspaces (SANGs) and restored heathland which will alleviate visitor pressure at the SAC. Overall, it is therefore considered unlikely that public access associated disturbances will undermine the integrity of the SAC because of developments in the LPR. Natural England agreed with this conclusion in their letter dated 08 March 2017 (ref: 206193).

5.5 Disease

- 5.5.1 The phenomenon of Oak Decline has been in the UK for approximately 100 years, although there has been an increase in recent years in the number of trees being affected. 'Acute' Oak Decline is thought to be caused by bacteria and can lead to the death of a tree within four to five years¹⁰. 'Chronic' Oak Decline is thought to be caused by various pests, diseases and environmental factors and can take many years to cause the death of a tree¹¹.
- 5.5.2 It is considered unlikely that developments in the plan would result in the combination of disease, pest and environmental factors at the SAC that leads to an increase in Chronic Oak Decline occurrence at the SAC. Acute oak decline is caused by bacterial pathogens and predominantly affects trees over 50 years old, although it is currently unknown how the disease is spread between trees¹². It is therefore considered unlikely that development proposed in the LPR would cause an increase in acute oak decline occurrence at the SAC.
- 5.5.3 With regards to disease, Natural England advised in their letter dated 08 March 2017 (ref: 206193):
- 5.5.4 *"Disease will not be positively correlated with how many houses that the plan may allocate, but will depend on other factors associated with the import or transmission of diseased material."*

¹⁰ Royal Horticultural Society (2016) Oak Decline. Available online at: <https://www.rhs.org.uk/advice/profile?PID=688>

¹¹ Ibid

¹² The National Forest (2011) Pests & diseases information sheet: Acute Oak Decline

5.6 Human Induced Hydraulic Changes

5.6.1 There remains capacity in the East Midlands Water Resource Zone (WRZ) for greater water demand in the short term. The Environment Agency (EA) is actively establishing more sustainable use of water resources in the area and its strict abstraction licensing is an effective measure for maintaining adequate water levels. Surface water is not found on site and the water table is currently 15-20m below the surface¹³. This is far below the depth of 1m that 90-99% of tree roots occur. An LSE on the qualifying features of the SAC because of the LPR can therefore be objectively ruled out based on the information currently available.

5.6.2 With regards to the risk of hydraulic changes for Birklands & Bilhaugh SAC, Natural England advised in their letter dated 08 March 2017 (ref: 206193):

5.6.3 *“Human induced hydraulic changes will also not be significant because 90% to 99% of tree roots occur within 1 metre of the soil surface and the natural water table within the SAC is well below this depth.”*

5.7 Air Pollution

5.7.1 Birklands & Bilhaugh SAC is considered to be experiencing the adverse impacts of low air quality (see **Table 5.1**). Air pollution was considered in the initial screening report with a focus on atmospheric nitrogen deposition. The Site Improvement Plan (SIP) for the SAC states:

5.7.2 *“Nitrogen deposition exceeds site relevant critical loads. Locally observed effects include increases in bracken cover and vigorous grasses at the expense of slower growing species of impoverished soils (although it is not possible to attribute this solely to nitrogen deposition).”*

¹³ Natural England, Natura 2000 (2015) European Site Conservation Objectives: Supplementary advice on conserving and restoring site features. Birklands and Bilhaugh Special Area of Conservation (SAC) (UK0012740) 18 May 2015

Table 5.1: Current levels of air pollution at Birklands & Bilhaugh SAC using data derived from APIS¹⁴

	Concentration and deposition	Critical load
Nitrogen deposition	28.42kg N/ha/yr	10-15kg N/ha/yr
Acid deposition nitrogen	2.03keq/ha/yr	1.387keq/ha/yr
Acid deposition sulphur	0.49keq/ha/yr	1.245keq/ha/yr
NOx concentration	20.8µg/m ³	30µg NOx/m ³ annual mean
SO2 concentration	2.91µg/m ³	10-20µg SO ₂ /m ³ annual mean

5.7.3 The ‘critical loads’ of pollutants are defined as a “*quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*”¹⁵.

5.7.4 The primary source of nitrogen deposition in residential developments is usually road traffic. The SAC may be exposed to increased levels of air pollution as a result of increased traffic on nearby roads caused by the proposed developments in the LPR. In the case of Birklands & Bilhaugh SAC, NOx concentration is below the critical load whilst nitrogen deposition exceeds the critical load. This suggests that the primary source of nitrogen deposition is not road traffic. Natural England have advised that approximately 38% of nitrogen deposition at the SAC is thought to stem from the Whitwell lime production plant, 34% from agricultural sources and 17% from road traffic.

¹⁴ Air Pollution Information System (APIS) Available online at: <http://www.apis.ac.uk/src/> Accessed 19.05.17

¹⁵ UNECE (date unavailable) ICP Modeling and Mapping Critical loads and levels approach, available at: <http://www.unece.org/env/Irtap/WorkingGroups/wge/definitions.html>, accessed 20/09/16

- 5.7.5 The Sherwood Forest Visitor Centre was previously located within the SAC boundary. A new visitor centre is in the process of development and will be located on the opposing side of the B6034. The new location of the visitor centre is not anticipated to change either the number of visitors to this area of the forest or the route by which visitors reach the forest.
- 5.7.6 The Design Manual for Roads and Bridges suggests that air quality impacts from vehicles are most likely to occur within 200m of a road¹⁶. Lepus had considered that traffic increases on roads within 200m of Birklands & Bilhaugh SAC, caused by development proposed in the LPR, would be negligible in relation to current levels. This was predominantly because the B6034, the only road to run within 200m of the SAC, was not considered to be a popular route of commute to areas of employment or recreation for residents of Edwinstowe or the District as a whole.
- 5.7.7 However, given that the SAC is currently suffering the adverse impacts of nitrogen deposition (excessive bracken growth), it was considered that any increase in nitrogen deposition could exacerbate the issue further and thereby undermine the integrity of the SAC and its conservation objectives. Natural England's comments were therefore specifically requested on the subject, and they advised in their letter dated 08 March 2017 (ref: 206193) the following:
- 5.7.8 *"The B6034 is the only road within 200m of the SAC and therefore modelling to predict the increase in traffic movements along this road may be useful. The Thoresby Colliery redevelopment site (800 homes) will result in a significant number of movements potentially above 1000 AADT alone however it is unlikely that all the traffic will travel along the B6034 which is a minor road."*
- 5.7.9 In previous consultation with Natural England, they have advised that in determining if there will be an LSE as a result of air pollution, the following steps are followed:

¹⁶ 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

1. If there are no new roads, or no increases in the number of cars on roads within 200m of a European Site, then the issue can be screened out;
2. If there is a new road, or there is anticipated to be an increase in the number of cars on a road within 200m, then further consideration is needed *only* if the number of additional car movements exceeds 1000 Annual Average Daily Traffic (AADT);
3. Traffic and air quality modelling is used to determine if, based on Air Pollution Information System (APIS) data¹⁷, there is going to be an increase in deposition loads of more than 1% on background levels;
4. If there is an increase of more than 1%, then mitigation measures are required.

5.7.10 Redmore Environmental Ltd (Redmore) were instructed to undertake an Air Quality Assessment (ref: 1459r2) on the Thoresby Colliery proposal¹⁸. Natural England, the Nottinghamshire Wildlife Trust and the RSPB have commented on this assessment and noted their concerns on the assessment's methodology and inputs.

5.7.11 Redmore addressed the issues raised by the RSPB, Nottinghamshire Wildlife trust and Natural England (ref: 1459r1) in their report dated 12 May 2017¹⁹. The report assessed the potential increases in annual NO_x concentrations and nitrogen deposition within the SAC as a result of additional road traffic exhaust emissions associated with the Thoresby Colliery development. The report concluded that:

- *“Impacts on annual mean NO_x concentrations were classified as **not significant** at the worst-case receptor locations in accordance with the stated methodology. This was because the predicted change in annual mean NO_x concentration was less than 1% of the critical level at all locations;*

¹⁷ Air Pollution Information System (APIS) Accessed online at: <http://www.apis.ac.uk/src1>

¹⁸ Redmore environmental (2017) Air Quality Assessment, Formerly Thoresby Colliery, Edwinstowe, 17th February 2017

¹⁹ Redmore environmental (2017) Air Quality Technical Note (Ecological Impacts) Former Thoresby Colliery, Edwinstowe, 12th May 2017

- *Impacts on nitrogen deposition were classified as **not significant** at the worst-case receptor locations in accordance with the stated methodology. This was because the predicted increase in nitrogen deposition was less than 1% of the critical load at all locations; and,*
- *Although not specifically required due to impacts at the Birklands and Bilhaugh SSSI and SAC, the proposals include mitigation to prevent, and where not possible, minimise, the quantity of vehicle exhaust emissions. This reduction has not been considered within the modelling assessment and therefore the presented impacts are worst-case.”*

5.7.12 Furthermore, Redmore was commissioned to undertake an In-Combination Assessment²⁰ of potential cumulative impacts of the proposed Thoresby Colliery development and other local sources of pollution (ref: 1459-2r1). These sources include the Center Parcs Combined Heat and Power Unit, Bilsthorpe Energy Centre, Brickyards Farm, Longbelt Farm and Stud Farm Anaerobic Digestion Plant. This assessment concluded that:

5.7.13 *“The predicted contribution from all considered sources to oxides of nitrogen concentrations and nitrogen deposition was below the relevant criteria at all ecological receptor locations in the vicinity of the site for all modelling years. As such, resultant impacts were classified as not significant in accordance with the stated criteria.”*

5.7.14 In response to the air quality assessments conducted by Redmore, Natural England stated that an LSE on Birkland and Bilhaugh SAC due to air pollution, caused by the proposed development at Thoresby Colliery, can be ruled out. Natural England advised the council the following:

5.7.15 *“The projected amount of nitrogen deposition from the proposed new development when considered alone and in combination with other proposals will be below the relevant threshold for significant effects for the Birkland and Bilhaugh SAC.”*

²⁰ Redmore environmental (2017) In-Combination Assessment, Former Thoresby Colliery, Edwinstowe, 7th June 2017

-
- 5.7.16 The Nottinghamshire Wildlife Trust were also consulted on the ShAP4 development proposals and the Air Quality Technical Note. They advised in their letter to NSDC, dated 24 May 2017, that their concerns related to air quality have been sufficiently allayed and they are able to remove their holding objection to the planning application. However, this is subject to the imposition of long term atmospheric nitrogen deposition monitoring, which they argue is justified due to the scale of the proposed development at Thoresby Colliery (ShAP4) and the proximity of Sherwood Forest ppSPA and Birkland & Bilhaugh SAC.
- 5.7.17 Based on the conclusions of the Redmore Air Quality Assessments, and in accordance with advice from Natural England, it is considered that an LSE on Birkland & Bilhaugh SAC as a result of air pollution caused by the LPR can be objectively ruled out .

6 Sherwood Forest ppSPA

6.1 Background

6.1.1 Sherwood Forest ppSPA is a possible potential Special Protection Area. Based on breeding populations of nightjar and woodlark, Natural England view a future recommendation for SPA classification of Sherwood Forest as being possible²¹. Natural England therefore recommends adopting a 'risk-based' approach whereby Local Planning Authorities (LPAs) assess and mitigate the likely impacts of all proposals on the nightjars and woodlarks of Sherwood Forest.

6.1.2 There is no legal obligation to include Sherwood Forest ppSPA in this assessment. However, following a Public Inquiry in 2011, the Secretary of State decided to refuse to grant planning permission for an Energy Recovery Facility (ERF) on land at the former Rufford Colliery site at Rainworth. This was due to the likely effects on breeding populations of woodlark and nightjar²².

6.1.3 In accordance with Natural England's advice, Sherwood Forest ppSPA has been included to ensure that all potential impacts of the LPR on the breeding populations of nightjar and woodlark in the Sherwood Forest area can be adequately avoided and/or minimised.

²¹ 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

²² Communities and Local Government (2011) TOWN AND COUNTRY PLANNING ACT 1990 - SECTION 77. APPLICATION BY VEOLIA ES NOTTINGHAMSHIRE LIMITED LAND AT FORMER RUFFORD COLLIERY, RAINWORTH, NOTTINGHAMSHIRE NG21 0ET. APPLICATION REF: 3/07/01793/CMW Available online at: <http://webarchive.nationalarchives.gov.uk/20120919132719/http://www.communities.gov.uk/documents/planning-callins/pdf/1914959.pdf> Accessed 19.05.17

- 6.1.4 No formal boundary of any future Sherwood Forest SPA has been made. Natural England have drawn a boundary of Sherwood Forest ppSPA based on areas of greatest ornithological interest for breeding nightjar and woodlark (see **Appendix F**). There is an ongoing consideration from Natural England as to whether this boundary should be expanded to include populations and habitats of the Annex 1 species honey buzzard (*Pernis apivorus*) in the north. This boundary was submitted as evidence in the Rufford ERF Public Inquiry and was used by the Inspector to inform their ruling. This boundary of Sherwood Forest ppSPA is therefore used in this assessment.
- 6.1.5 The precise breakdown of habitats in Sherwood Forest ppSPA is not well established. The ppsPA sits within the Sherwood Forest Natural Character Area (NCA), which is comprised of the following habitats²³:
- 65% farmland;
 - 16% urban land;
 - 10% coniferous woodland;
 - 10% broad-leaved woodland;
 - 1.6% Ancient Woodland;
 - 2% heathland and/or acid grassland; and
 - 2.5% other habitats of ecological importance.
- 6.1.6 Within the ppSPA are a number of other statutory and non-statutory ecological designations which afford varying levels of protection. These include:
- Birklands and Bilhaugh SAC;
 - Foxcovert Plantation, Nottinghamshire Wildlife Trust Nature Reserve;
 - Rainsworth Water Local Nature Reserve;
 - Cockglode and Rotary Wood Local Nature Reserve;
 - Sherwood Heath Local Nature Reserve;
 - Sherwood Forest National Nature Reserve;
 - Rainworth Heath SSSI;

²³ Sherwood Habitats Strategy Group (2015) The State of Nature in Sherwood Report 2015, 1st Edition

- Strawberry Hill Heath SSSI;
- Birklands West and Ollerton Corner SSSI;
- Birklands and Bilhaugh SSSI;
- Thoresby Lake SSSI;
- Welbeck Lake SSSI; and
- Clumber Park SSSI.

6.1.7 Within the ppSPA are various recreational uses that will likely 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.

6.2 Nightjar and woodlark

6.2.1 Sherwood Forest ppSPA is considered to support 70 pairs of breeding nightjar (*Caprimulgus europaeus*)²⁴. This is considered to represent slightly less than 1% (the criteria for SPA designation) of the UK population of nightjar. In 2004 the UK population of nightjar was estimated at 4,600 breeding males²⁵. This is a marked increase on the estimated 1992 population of 3,400 males²⁶. However, a steep linear decrease is evident in the number of fledglings per breeding attempt, with studies suggesting nest failure is most likely in areas frequented by walkers and dogs.²⁷

6.2.2 Habitat requirements for nightjar include²⁸:

- Heathland;
- Open woodland;
- Clearings; and
- Heterogenic and semi-open natural habitats for foraging and nesting.

²⁴ RSPB Futurescapes Sherwood Forest Available online at:
https://www.rspb.org.uk/Images/sherwood-forest_tcm9-281889.pdf Accessed 19.05.17

²⁵ 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

²⁶ Morris, A., Burges, D., Fuller, R.J., Evans, A.D. & Smith, K.W. (1994) The status and distribution of Nightjars *Caprimulgus europaeus* in Britain in 1992. *Bird Study* 41: 181-191.

²⁷ 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

²⁸ 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.

6.2.3 Populations of woodlark (*Lullula arborea*) in Sherwood Forest are less well established. Their territories are considered to average approximately 3.4ha and range from 0.9 to 8.3ha, whilst male territories rarely, if ever, overlap²⁹. The mean distance woodlark travel from nest to forage site is 3.1km, with the majority travelling between 2km and 4km³⁰. 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;
- Heterogeneous land type with two to four land cover types suitable for foraging and nesting.

6.2.4 Approximately 7,285ha has been recognised as suitable habitat for nightjar in Sherwood Forest ppSPA, and 9,225ha for woodlark. These Important Bird Areas (IBAs) frequently overlap. In order to maintain the integrity of Sherwood Forest ppSPA, and to ensure it can contribute to the aims of the Wild Birds Directive, it is therefore important to maintain and restore:

- The extent and distribution of the habitats of nightjar and woodlark;
- The structure and function of the habitats of the nightjar and woodlark;
- The supporting processes on which these habitats rely;
- The populations of nightjar and woodlark; and
- The distribution of nightjar and woodlark within the site.

6.2.5 With these key environmental conditions in mind, the following adverse effects would be considered to be significant:

- Any event which contributes to the long-term decline of the population of nightjar and woodlark;
- Any event contributing to the reduction, or to the risk of reduction, of the range of the nightjar and woodlark within the site; and

²⁹ Sirami, C., Brotons, L., & Martin, J. L. (2011). Woodlarks *Lullula arborea* and landscape heterogeneity created by land abandonment. *Bird Study*, 58(1), 99-106

³⁰ 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

- Any event which contributes to the reduction of the size of the habitat of the nightjar and woodlark within the site.

6.2.6 As per Article 6(2) of the Habitats Directive, “*Disturbance of a species occurs on a site when the population dynamics data for this site show that the species could no longer constitute a viable element of it in comparison to the initial situation.*”

6.2.7 In particular, Natural England recommend the assessment covers, but is not limited to, impacts from 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.

6.2.8 Data on the current levels of nitrogen deposition for areas of Sherwood Forest ppSPA are not currently available. The issue of air pollution is considered in detail for Birklands & Bilhaugh SAC, a woodland that overlaps with an area of the ppSPA and is in close proximity to the redevelopment of Thoresby Colliery (ShAP 4).

6.3 Loss and fragmentation of habitats

6.3.1 Loss, fragmentation and/ or damage to breeding and/ or feeding habitats of nightjar and woodlark has been identified as a threat for Sherwood Forest ppSPA by Natural England. Sherwood Forest ppSPA is scattered throughout the district and is potentially vulnerable to further habitat fragmentation.

6.3.2 The redevelopments proposed for Thoresby Colliery will not overlap with the suitable habitats for nightjar and/or woodlark. Restoration of the heathland and acid grassland, as proposed in ShAP 4, is considered likely to have a positive impact in reconnecting some areas of the local habitat.

- 6.3.3 No developments proposed in the LPR are thought to overlap with the breeding and feeding habitats of woodlark and nightjar in Sherwood Forest ppSPA. It is therefore considered that a likely significant effect on the site due to fragmentation and loss of habitat can be objectively ruled out based on the information currently available. Natural England agreed with this conclusion in their letter dated 08 March 2017 (Ref: 206193).

7 Cat Predation at Sherwood Forest ppSPA

7.1 Comments from Natural England

7.1.1 Natural England agreed with the conclusion of the initial screening report that an LSE caused by cat predation on the qualifying features of Sherwood Forest ppSPA cannot yet be objectively ruled out based on the currently available information³¹. This chapter will attempt to provide a more precise assessment on the number of cats that the scale of the development proposed in the LPR may introduce in close proximity to IBAs of Sherwood Forest ppSPA and the impacts this may have.

7.2 Background data

Residential development results in how many cats?

7.2.1 Approximately one quarter of households in the UK have been recorded as housing at least one cat³², although this figure has also been recorded at 17%³³. For every 1,000 households, 320 – 330 pet cats have been recorded, with some regional variation³⁴. Rural and suburban households are known to generally house more cats than urban households³⁵.

³¹ Natural England (2017) Newark & Sherwood Local Development Framework Plan Review – HRA Screening Document – letter dated 08 March 2017 - Ref: 206193

³² Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography*, 20, 271-280.

³³ Pet Food Manufacturer's Association (PFMA) 2016 Pet Population 2016. Available online at: <http://www.pfma.org.uk/pet-population-2016>. Accessed 15.05.17

³⁴ English Nature Research Reports Number 623 (2005) A literature review of urban effects on lowland heaths and their wildlife, J C Underhill-Day, RSPB

³⁵ Lepczyk, C. A., Mertig, A. G. and Liu, J. (2003) Landowners and cat predation across rural-to-urban landscapes. *Biological Conservation*. 115. 191-201

How far do the cats travel?

- 7.2.2 The roaming distance of pet cats is considered to vary from 300m to potentially 1,500m, with generally larger distances travelled by males than females and larger distances travelled by rural cats than urban³⁶. Development is prohibited within 400m of the boundary of Thames Basin Heaths SPA to protect the qualifying bird species, as it was considered 60% of cats roam up to 400m³⁷. A 360m buffer was recommended in Western Australia after research showed the longest linear distance travelled by pet cats is 300m³⁸.
- 7.2.3 Their range is determined by a wide range of factors, such as the presence of waterbodies and busy roads, the spatial density of cats in the area utilising food resources, personality and social dominance of individual cats and the location of favoured hunting and/or resting sites^{39,40}. Movements of more than 100m to 200m beyond the suburban edge are considered most likely to be made at night⁴¹.

³⁶ Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography*, 20, 271-280.

³⁷ Royal Borough of Windsor and Maidenhead (July, 2010) Local Development Framework, Thames Basin Heaths Special Protection Area Supplementary Planning Document (Part 1)

³⁸ Lillith, M., Calver, M., & Garkaklis, M. (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. Mosman NSW: Royal Zoological Soc New South Wales, 65-72.

³⁹ D. G. Barratt (1995) Movement patterns and prey habits of house cats *Felis catus* in Canberra, Australia, A thesis submitted in fulfilment of the requirements of the Degree of Master of Applied Science at the University of Canberra

⁴⁰ Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography*, 20, 271-280.

⁴¹ Ibid

How much do the cats hunt?

- 7.2.4 Studies have recorded the average number of prey per cat per year as being 10.2⁴², 14⁴³, 16.6⁴⁴, 29⁴⁵ and 33⁴⁶. The quantity of prey is highly contextual. In some locations there is a greater availability of prey. Younger cats are known to hunt more than older cats whilst approximately 22% of prey is considered to be birds⁴⁷.

Other factors influencing the rate of predation

- 7.2.5 Nests are victims of predation significantly more often when within 225m of a path⁴⁸. This relationship is true for within 50m, 100m and 500m of a path. The longer the path, the greater the correlation⁴⁹. Predated nests are also associated with reduced vegetation cover, a greater proportion of bare ground and less gorse⁵⁰.
- 7.2.6 The woodlark nest predation rate has been recorded at 69%, although 53% of predators are considered to be corvids (magpies, crows etc.) and 26% foxes⁵¹. Corvid numbers are higher on sites visited by more people⁵², and other predators have been recorded at higher densities in urban than rural environments⁵³ including magpies and foxes⁵⁴.

⁴² Barratt, D.G. (1998) Predation by house cats, *Felis catus* (L.), in Canberra, Australia. II. Factors affecting the amount of prey caught and estimates of the impact on wildlife. *Wildlife Research*, 25, 475-487.

⁴³ Churcher, P.B. & Lawton, J.H. (1987) Predation by domestic cats in an English village. *Journal of Zoology*, London, 212, 439-455.

⁴⁴ Woods, M., McDonald, A. R., and Harris, S. (2003) Domestic Cat Predation on Wildlife. *The Mammal Society*.

⁴⁵ Ibid

⁴⁶ Howes, C. (1982) What's the cat brought in? *Bird Life*, 1982 (January-February), 26.

⁴⁷ Ibid

⁴⁸ English Nature Research Reports Number 623 (2005) A literature review of urban effects on lowland heaths and their wildlife, J C Underhill-Day, RSPB

⁴⁹ English Nature Research Reports Number 623 (2005) A literature review of urban effects on lowland heaths and their wildlife, J C Underhill-Day, RSPB

⁵⁰ Taylor, E. (2002) Predation risk in woodlark *Lullula arborea* habitat: the influence of recreational disturbance, predator abundance, nest site characteristics and temporal factors. MSc. Dissertation. University of East Anglia

⁵¹ Taylor, E. (2002) Predation risk in woodlark *Lullula arborea* habitat: the influence of recreational disturbance, predator abundance, nest site characteristics and temporal factors. MSc. Dissertation. University of East Anglia

⁵² Ibid

⁵³ 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

⁵⁴ Harris, S., & Raynor, J.M.V. (1986). Urban fox *Vulpes vulpes* population estimates and habitat requirements in several British cities. *Journal of Animal Ecology*, 55, 575-591.

7.2.7 The nightjar lays its eggs between May and June whilst the woodlark does so between April and August, after which the chicks rely on the mother for approximately 30 days⁵⁵. The birds are therefore particularly vulnerable during the spring and early summer months when it is likely that cats spend a greater proportion of their time outdoors.

7.2.8 Nightjar and woodlark are considered to be relatively difficult prey for cats to hunt. When singing, woodlark are an average of 3.1m off the ground, generally atop a bush or flying⁵⁶. They are considered to only spend approximately a third of their time on the ground⁵⁷.

Impacts of predation on population dynamics

7.2.9 A small reduction in fecundity due to cat predation can potentially lead to significant reductions in bird abundance⁵⁸. Domestic cats have been recorded as depredating 12.5% of local bird nests⁵⁹.

7.3 LPR & Cat Predation

7.3.1 Residential site allocations within 400m of Sherwood Forest ppSPA (that do not already have planning permission and are not currently under construction) include:

- ShaP4 (Thoresby Colliery development);
- OB/Ho/2; and
- Ra/Ho/1.

7.3.2 Each of these allocations will now be considered in detail.

⁵⁵ 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

⁵⁶ Sirami, C., Brotons, L., & Martin, J. L. (2011). Woodlarks *Lullula arborea* and landscape heterogeneity created by land abandonment. *Bird Study*, 58(1), 99-106

⁵⁷ Sirami, C., Brotons, L., & Martin, J. L. (2011). Woodlarks *Lullula arborea* and landscape heterogeneity created by land abandonment. *Bird Study*, 58(1), 99-106

⁵⁸ Turner, D. C., and O.Meister.1988. Hunting behaviour of the domestic cat. Pages 111-121 *in* D. C. Turner and P. Bateson, editors. *The domestic cat: the biology of its behaviour*. Cambridge University Press, Cambridge, UK

⁵⁹ Lepczyk, C. A., Mertig, A. G. and Liu, J. (2003) Landowners and cat predation across rural-to-urban landscapes. *Biological Conservation*. 115. 191-201

7.4 Ra/Ho/1 - Rainworth

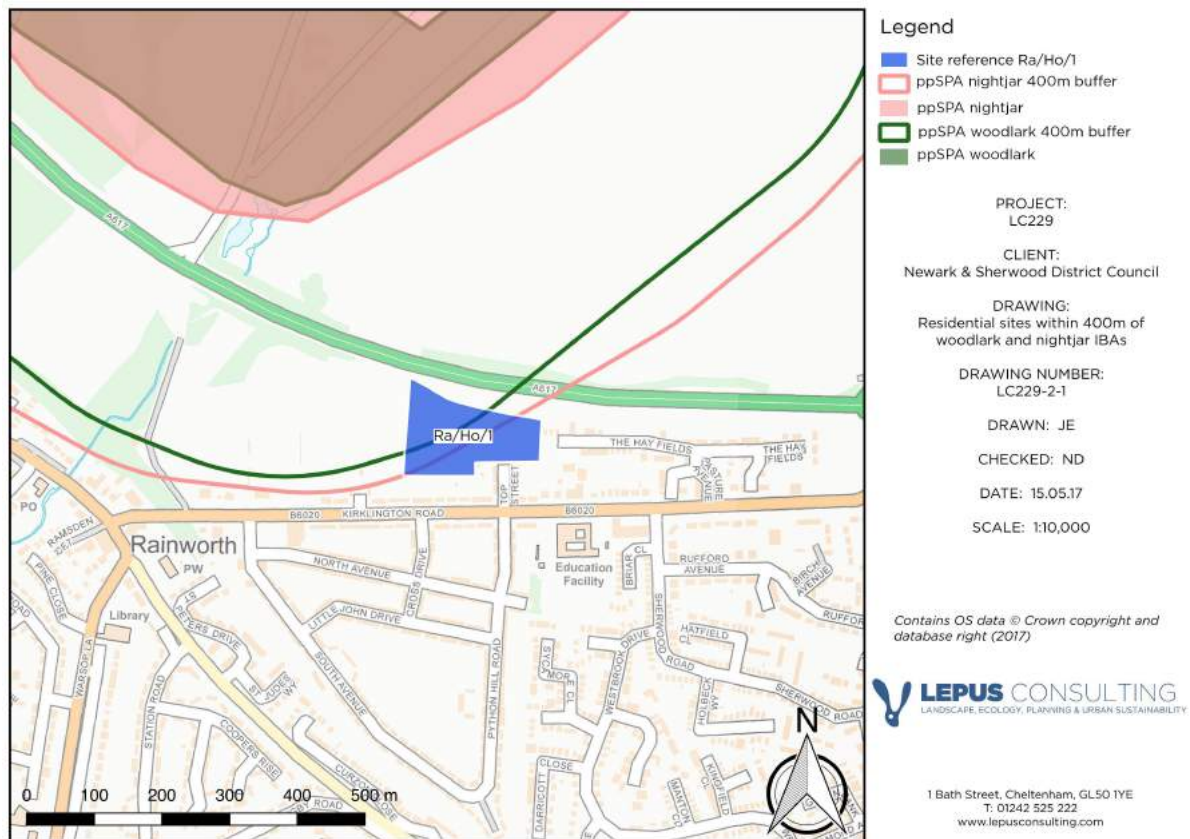


Figure 7.1: Map showing site reference Ra/Ho/1 in relation to nightjar and woodlark ppSPA IBAs and the 400m buffer. This is related to Sherwood Forest ppSPA.

7.4.1 Approximately half of Ra/HO/1 is within 400m of the IBAs of nightjar and woodlark (see **Figure 7.1**). A total of 54 dwellings are proposed which could potentially equate to nine homes housing 17 cats (see **Section 7.2**). This allocation is not within close enough proximity to have a cumulative impact in combination with other allocations.

7.4.2 The habitat in between the development and the A617 Rainworth bypass could be considered to be suitable for supporting woodlark (short, sparse, tussocky grass). However, in between the site and the IBAs is the A617 Rainworth bypass. This busy dual carriageway is anticipated to act as a barrier to the movement of pet cats at Ra/Ho/1, preventing them from reaching the woodlark and nightjar IBAs. In terms of cat predation, it is therefore considered likely that this site will bear no adverse impacts on the woodlark and/or nightjar populations and/or distributions.

7.5 OB/Ho/2 Land adjacent to Hollies Close

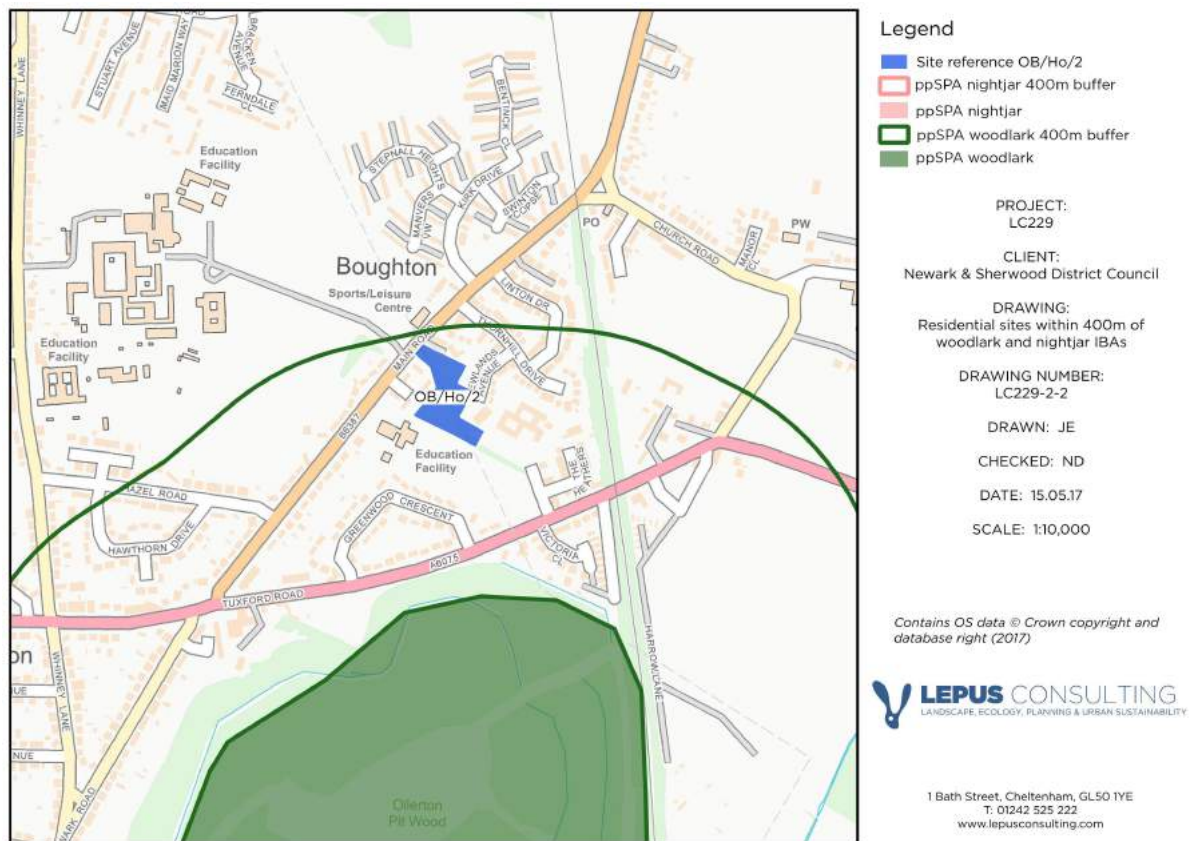


Figure 7.2: Map showing site reference OB/Ho/2 in relation to nightjar and woodlark ppSPA IBAs and the 400m buffer. This is related to Sherwood Forest ppSPA.

- 7.5.1 This site allocation lies within 400m of the woodlark SPA (see **Figure 7.2**). It includes proposals for 25 dwellings, which could potentially equate to four homes housing a total of eight pet cats (see **Section 7.2**).
- 7.5.2 In between the allocated site and the woodlark IBA is the A6075 Tuxford Road and Cocking Hill. This two way busy road is anticipated to act as a barrier, preventing the pet cats of OB/Ho/2 from reaching the nightjar and woodlark IBAs. The land in between the allocated site and the busy road is not considered to be suitable for supporting populations of woodlark (or nightjar). In terms of cat predation, it is therefore considered that the proposed development at OB/Ho/2 will have no adverse impacts on the population and/or distribution of woodlark and/or nightjar.

7.6 ShAP4 Thoresby Colliery

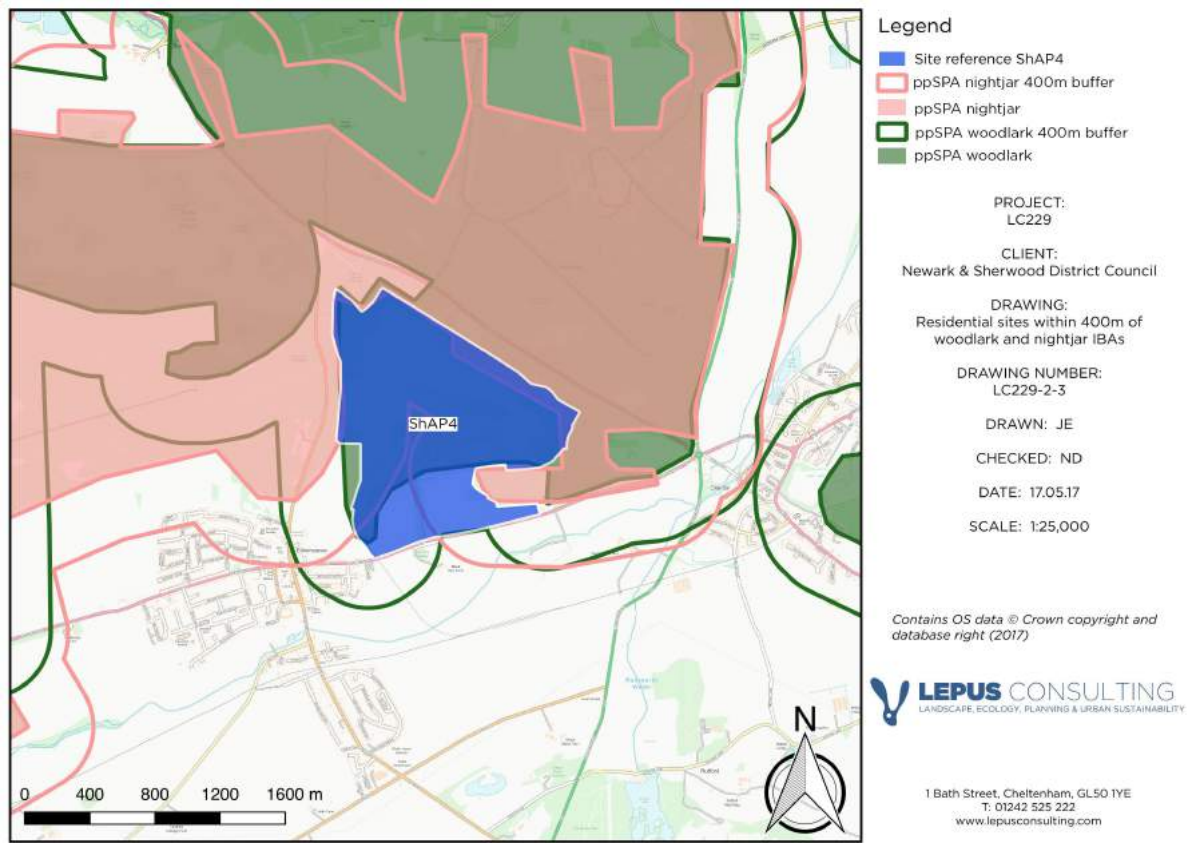


Figure 7.3: Map showing site reference ShAP4 in relation to nightjar and woodlark ppSPA IBAs and the 400m buffer. The site is almost entirely within the area classified as woodlark IBA and partially within the nightjar IBA. This is related to Sherwood Forest ppSPA.

7.6.1 The Thoresby Colliery redevelopment includes proposals for 800 residential properties on land overlapping with IBAs (see **Figure 7.3**). This could potentially lead to the introduction of 256 – 264 cats (very likely more than 136 cats, potentially more than 264 cats, see **Section 7.2**). Such a quantity of cats could potentially kill between 299 and 985 birds a year.

- 7.6.2 Nightjar have a low breeding productivity with only two or three chicks a year. The loss of just one or two birds could compromise the conservation status of nightjar in Sherwood Forest and it is thus afforded a high level of protection⁶⁰. It is therefore important to establish how likely it is pet cats introduced to the Thoresby Colliery location will prey on ground nesting nightjar and/or woodlark.
- 7.6.3 A large proportion of the Thoresby Colliery site is considered to be within the boundary of the woodlark IBA and to lie entirely within 400m of both nightjar and woodlark IBAs.
- 7.6.4 The boundaries of the IBAs identified by Natural England highlight the areas of greatest ornithological interest for breeding nightjar and woodlark. These boundaries are not a formal assessment of any future SPA and no such assessment has yet been made, and they are largely based on the national nightjar and woodlark surveys of 2004 and 2006⁶¹. It is therefore not possible to definitively state if ShAP4 lies within or outside what may in the future be designated as a SPA.
- 7.6.5 However, when taking a closer look at the location of the former Thoresby Colliery it is apparent that in its current condition it is largely unsuitable for supporting nightjar and woodlark populations. Both ground nesting species prefer lowland heathland, with naturally developed and tussocky turf for woodlark and open and cleared woodland for nightjar. In its current condition this is not provided by the Thoresby Colliery. The site is predominantly covered in spoil heaps, headstocks, roads and other infrastructure associated with coal mining.

⁶⁰ Nottinghamshire Wildlife Trust (2015) Letter to Secretary of State Re: Re: PINS Reference APP/L0355/V/14/3007886 Proposed Development of the Bilsthorpe Energy Centre - Third Regulation 22 submission

⁶¹ Nottinghamshire Wildlife Trust (2015) Letter to Secretary of State Re: Re: PINS Reference APP/L0355/V/14/3007886 Proposed Development of the Bilsthorpe Energy Centre - Third Regulation 22 submission

- 7.6.6 The Thoresby Colliery redevelopment includes proposals for 99.03ha of country park, within which will be a number of habitats of benefit to local wildlife, including approximately 34.5ha of heathland. The redevelopment also includes large areas of acid grassland, woodland nature reserve and restoration and planting of new woodland. Areas of the site in its current state that are considered suitable for nightjar and woodlark will not be built upon. Woodlark require heterogeneity in their territories with different land cover types, such as bare ground, shrub and bushes⁶². This is considered to be provided by the development proposals.
- 7.6.7 In and around the residential and employment developments will also be approximately 9.7ha of green infrastructure, including a large waterbody and a wide green corridor of trees.
- 7.6.8 The extent to which pet cats at the redevelopment pose a threat to nightjar and woodlark populations is complex. The number of pet cats that will be introduced to this location, the proportion of these which will hunt, the distances these hunters will roam and the quantity and species of prey that these hunters will target is not currently possible to precisely determine.
- 7.6.9 A proportion of cats will be located further than 400m from IBAs. Cats that are within 400m will not necessarily have an easy route to the nightjar and woodlark IBAs due to the presence of barriers, including the waterbody proposed at Thoresby Colliery, busy roads, stock proof fencing and the presence of other cats. It is considered likely that ShAP4 would increase the availability of suitable habitat for nightjar and woodlark in Sherwood Forest ppSPA. Section C of ShAP 4 includes 'measures to address potential pet predation on restored heathland to the north of the core development area'.

⁶² Sirami, C., Brotons, L., & Martin, J. L. (2011). Woodlarks *Lullula arborea* and landscape heterogeneity created by land abandonment. *Bird Study*, 58(1), 99-106.

7.6.10 Woodlark only spend approximately a third of their time on the ground, and when on the ground they're silent⁶³. The extent to which nightjar and woodlark will habituate the Country Park of the Thoresby Colliery redevelopment, and thereby expose themselves to the risk of predation, is unknown. However, sites surrounded by urban development generally support lower densities of nightjar population, reducing the number of potential nightjar prey⁶⁴.

7.6.11 On the other hand, the scale of development proposed in the LPR could potentially introduce over 250 pet cats to locations within 400m of IBAs, with a proportion of cats being within just several metres of suitable nightjar and woodlark habitat. The busy road immediately to the south of the Thoresby Colliery development is likely to impede the roaming distance of cats going south and they may therefore be more likely to head northwards towards the IBAs. The network of walking paths throughout the IBAs of Sherwood Forest ppSPA bring people and their pets in closer proximity to nightjar and woodlark nests and individuals, increasing the likelihood of disturbance.

7.7 Conclusions

7.7.1 It is considered likely that the scale of development proposed in the LPR, and in particular that which is proposed in ShAP 4 at the former Thoresby Colliery, could lead to an increase in disturbance and predation of the nightjar and woodlark of Sherwood Forest ppSPA due to pet cats. **Chapter 9** considers this impact in the context of Core Policy 12: Biodiversity & Green Infrastructure of the LDF Core Strategy DPD, and Policy DM 7: Biodiversity & Green Infrastructure of the LDF Allocations & Development Management DPD.

⁶³ Sirami, C., Brotons, L., & Martin, J. L. (2011). Woodlarks *Lullula arborea* and landscape heterogeneity created by land abandonment. *Bird Study*, 58(1), 99-106.

⁶⁴ 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(2), 219-230.

8 Dog Disturbances at Sherwood Forest ppSPA

8.1 Background data

Comments from Natural England

8.1.1 Natural England advised that the scale of the development proposed in the LPR is considered likely to lead to an increase in the number of dogs being walked in Sherwood Forest ppSPA and an LSE because of this cannot yet be objectively ruled out⁶⁵. This chapter will attempt to provide a more accurate assessment on the number of dogs that may be walked on areas of the ppSPA as a result of the scale of the development proposed in the LPR and the implications this may have for the conservation status of nightjar and woodlark.

How do dogs disturb nightjar and woodlark?

8.1.2 Birds are considered to be more wary of dogs than people alone, and therefore flush from their nest more readily, more frequently and at greater distances when disturbed by dogs⁶⁶. Nightjars are likely to flush from their nest during incubation when a predator is within 10m and during chick rearing when a potential predator is within 50-100m⁶⁷. The birds will then stay off the nest for between five and 15 minutes, during which predation of their eggs is a significant concern⁶⁸.

⁶⁵ Natural England (2017) Newark & Sherwood Local Development Framework Plan Review – HRA Screening Document – letter dated 08 March 2017 - Ref: 206193

⁶⁶ Murison, G. (2002) The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. English Nature, Peterborough.

⁶⁷ Ruddock, M. & Whitfield, D.P. (2007) A Review of Disturbance Distances in Selected Bird Species, A report from Natural Research (Projects) Ltd to Scottish Natural Heritage

⁶⁸ Lack, D.L. (1932). Some breeding habits of the European nightjar. *Ibis*, 74, 266-284.

- 8.1.3 Passive disturbances likely occur at an even greater distance. The presence of dogs delays the arrival of birds at feeding areas, makes them depart feeding areas earlier and reduces the amount they eat whilst there due to increased vigilance⁶⁹⁷⁰⁷¹⁷². Dogs may also prey on ground nesting birds whilst trampling their nest⁷³.
- 8.1.4 It has been well recorded that disturbance reduces the mean reproductive success rate⁷⁴ with most nightjar breeding failures occurring during incubation⁷⁵. Research in New South Wales, Australia found dog walking was causing bird numbers to drop by an average of 41% across 90 sites, despite dogs being kept on leads⁷⁶.
- 8.1.5 A single dog running off-path into the heather could therefore disturb large areas of nightjar breeding habitat⁷⁷. Because of this, it is considered to some extent that the distribution of people walking their dogs is more important than the actual quantity of dogs being walked.

⁶⁹ Yalden, P. E. and Yalden, D. W. (1990). Recreational disturbance of breeding golden plovers *Pluvialis apricarius*. *Biological Conservation* 51, 243-262.

⁷⁰ Lafferty, Kevin D. "Birds at a Southern California beach: seasonality, habitat use and disturbance by human activity." *Biodiversity and Conservation* 10.11 (2001): 1949-1962.

⁷¹ Lord, Andrea, et al. "Effects of human approaches to nests of northern New Zealand dotterels." *Biological conservation* 98.2 (2001): 233-240.

⁷² Miller, Scott G., Richard L. Knight, and Clinton K. Miller. "Wildlife responses to pedestrians and dogs." *Wildlife Society Bulletin* (2001): 124-132.

⁷³ Murison, G. (2002) The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. *English Nature*, Peterborough.

⁷⁴ Hockin, D., et al. "Examination of the effects of disturbance on birds with reference to its importance in ecological assessments." *Journal of Environmental Management* 36.4 (1992): 253-286.

⁷⁵ Murison, G. (2002) The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. *English Nature*, Peterborough.

⁷⁶ University of New South Wales (2007) "A Dog in The Hand Scares Birds In The Bush." *ScienceDaily*. ScienceDaily, 12 September 2007

⁷⁷ Woodfield, E. & Langston, R.H. (2004) A study of the effects on breeding nightjars of access on foot to heathland. *English Nature*, Peterborough

How many dogs are anticipated?

- 8.1.6 In 2015 there were approximately 8.5 million pet dogs in the UK⁷⁸ with 26% of households home to at least one dog (based on a sample of 4,000 people)⁷⁹. If you exclude the region of London from consideration, approximately 30% of households are home to at least one dog⁸⁰. A random sample of 2,980 houses in the UK in 2007 found that 31% of households were home to at least one dog, with an increased likelihood where houses had gardens and/or were in rural locations⁸¹. A study of 1,278 households in Cheshire, UK found 24% of households to be home to at least one dog⁸².

Where do people walk their dogs?

- 8.1.7 There is no survey data on Sherwood Forest ppSPA that provides data on where dog walking visitors to the site are travelling from. As the ppSPA is spread over a large area, and as it is comprised of a variety of different habitats and landscapes, it is also difficult to apply results from surveys of other sites to the context of the ppSPA.
- 8.1.8 For example, the visitor survey of Cannock Chase conducted by Footprint Ecology in 2012⁸³ found that 50% of visitors lived within 6.24km of the site, 45% of the 4,809 surveyed visitors were walking dogs and 42% of dog walkers were visiting for less than one hour. However, Cannock Chase SAC is a renowned woodland location that is a major draw for visitors across the UK, which is in stark contrast to the rudimentary border of Sherwood Forest ppSPA.

⁷⁸ RSPCA (2015) Facts and figures. Available online at: <https://media.rspca.org.uk/media/facts> . Accessed 17.05.17

⁷⁹ Pet Food Manufacturer's Association (2015/16) Pet population 2016. Available online at: <http://www.pfma.org.uk/pet-population-2016> . Accessed 17.05.17

⁸⁰ Pet Food Manufacturer's Association (2015/16) Regional pet population 2016. Available online at: <http://www.pfma.org.uk/regional-pet-population-2016> . Accessed 17.05.17.

⁸¹ Murray J. K., Browne W. J., Roberts M. A., Whimmarsh A. and Gruffydd-Jones T. J. (2010) Number and ownership profiles of cats and dogs in the UK. *Veterinary record* 177, 163-168

⁸² Westgarth, C., Pinchbeck, G. L., Bradshaw, J. W., Dawson, S., Gaskell, R. M., & Christley, R. M. (2007). Factors associated with dog ownership and contact with dogs in a UK community. *BMC Veterinary Research*, 3(1), 5.

⁸³ Liley, D. (2012). Cannock Chase SAC Visitor Survey. Unpublished report, Footprint Ecology

8.1.9 Results from the Natural England Monitor of Engagement with the Natural Environment (MENE) survey found that in between 2014 and 2015, 92% of the 5,479 people surveyed who were walking their dog travelled no more than 8km to reach the dog walking location. Between 2013 and 2014, this figure was 93%. Approximately 79% of dog walkers travel no further than 3km to reach the location at which they walk their dogs⁸⁴.

8.1.10 It is therefore considered that the 2km - 5km buffer zone around the ppSPA, applied by Natural England, is a useful place to start in the consideration of how many residents may walk their dogs in nightjar and woodlark IBAs (see **Figure 8.1**).

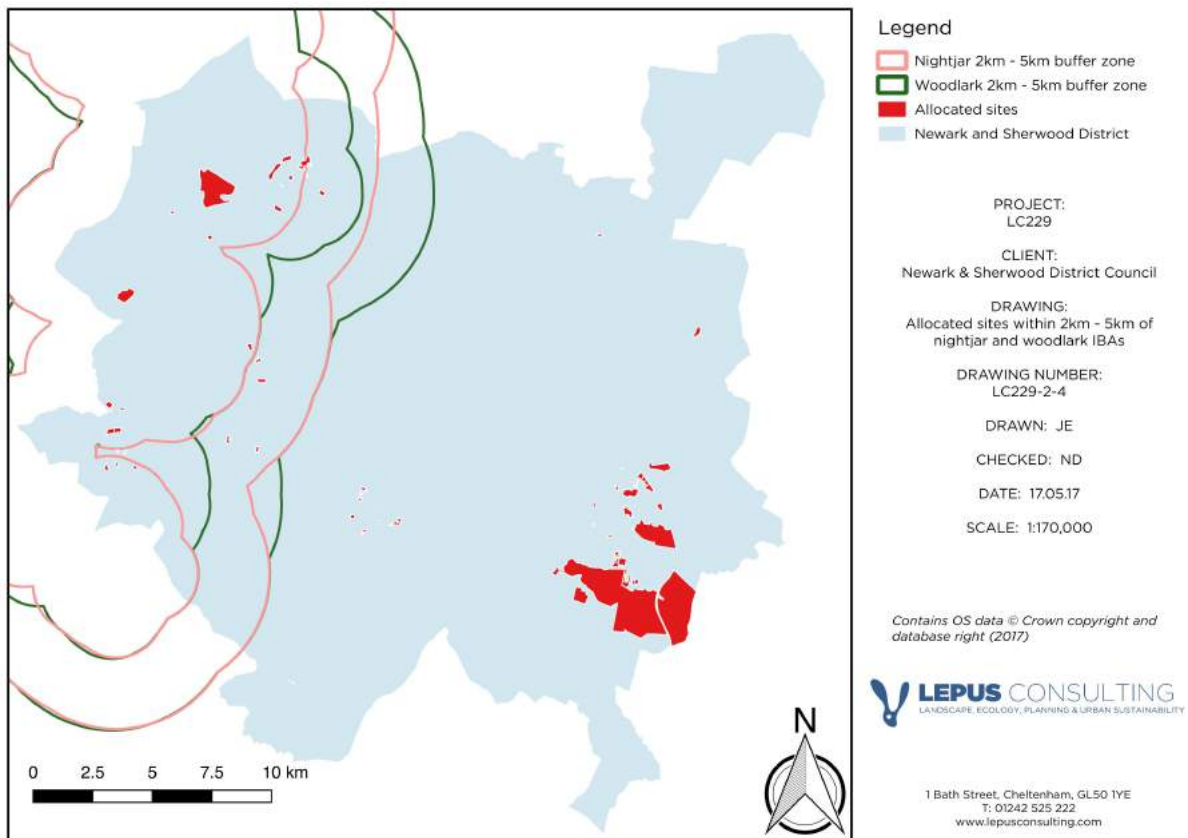


Figure 8.1: Site allocations within 5km of Sherwood Forest ppSPA

⁸⁴ Natural England MENE Online Cross Tabulation Viewer. Available online at: naturalengland.tns-global.com. Accessed 17.05.17

8.2 NSDC Local Plan & disturbance from dog walkers

8.2.1 **Table 8.1** displays the residential site allocations that do not already have planning permission and are not currently under construction and are within 5km of the ppSPA. In addition to these sites is BI/Ho/2, a 4.03ha site with permission granted for 13 dwellings that is also within the 5km area of search. An application for 21 dwellings is currently being considered at this location. These sites are illustrated in **Figure 8.2**. There are proposals for a total of 1,760 residential properties within 5km of IBAs for nightjar and woodlark. Assuming a rate of 24%⁸⁵, that would equate to 422 homes with at least one dog. Assuming a rate of 31%⁸⁶, that would equate to 545 homes with at least one dog. It is therefore considered likely that 422 to 545 homes within 5km of the IBAs will house at least one dog as a result of the development proposed in the LPR.

Table 8.1: Residential site allocations within 5km of Sherwood Forest ppSPA. Most of these site allocations are closer than 5km (see **Figure 8.2**).

Site reference	Location	Number of proposed dwellings
Bi/Ho/2	Bilsthorpe	135
Bi/MU/1	Bilsthorpe	75
Bl/Ho/1	Blidworth	55
Bl/Ho/2	Blidworth	21
Bl/Ho/3	Blidworth	100
Ed/Ho/2	Edwinstowe	50
OB/Ho/2	Ollerton & Boughton	25
OB/MU/1	Ollerton & Boughton	225
Ob/MU/2	Ollerton & Boughton	120
Ra/Ho/1	Rainworth	54
Ra/Ho/2	Rainworth	100
ShAP4	Edwinstowe	800
		Total: 1,760

⁸⁵ Westgarth, C., Pinchbeck, G. L., Bradshaw, J. W., Dawson, S., Gaskell, R. M., & Christley, R. M. (2007). Factors associated with dog ownership and contact with dogs in a UK community. *BMC Veterinary Research*, 3(1), 5.

⁸⁶ Murray J. K., Browne W. J., Roberts M. A., Whimmarsh A. and Gruffydd-Jones T. J. (2010) Number and ownership profiles of cats and dogs in the UK. *Veterinary record* 177, 163-168

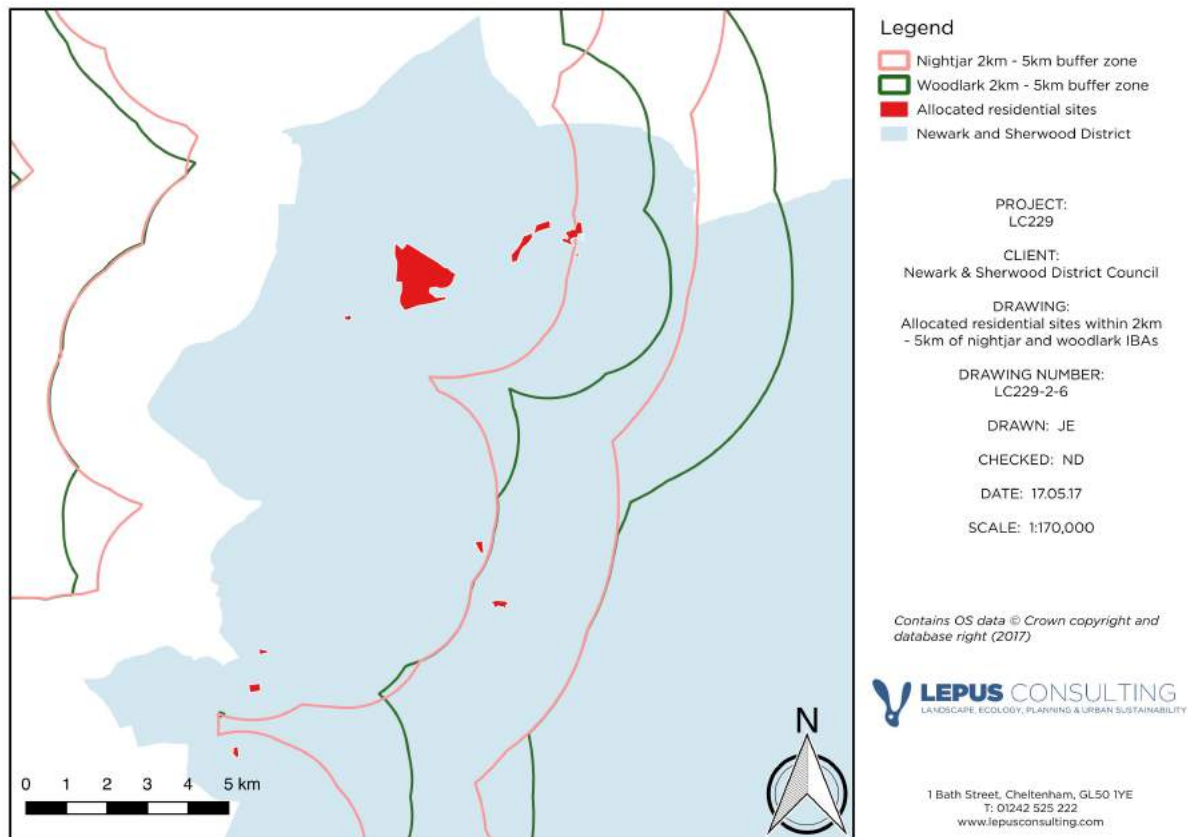


Figure 8.2: Residential site allocations within 5km of Sherwood Forest ppSPA

8.3 BI/Ho/1, BI/Ho/2 & BI/Ho/3 - Blidworth

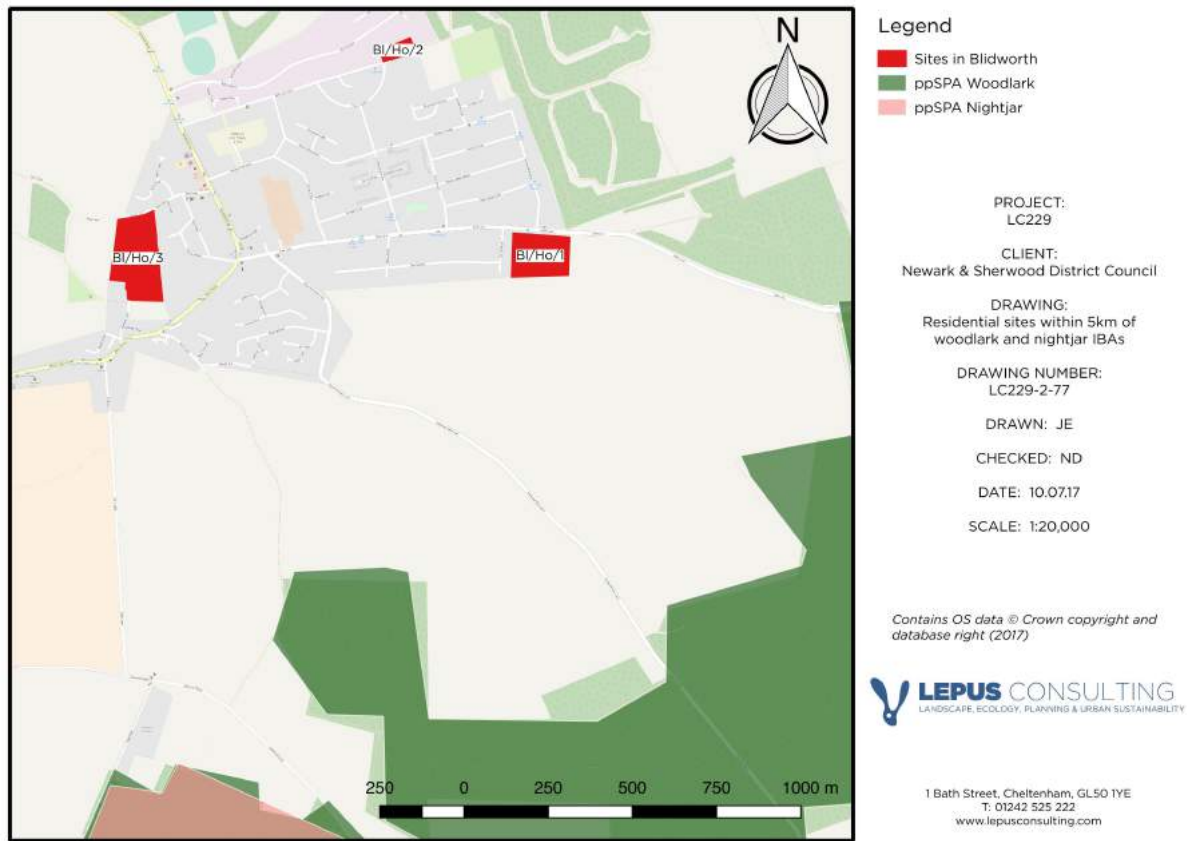


Figure 8.3: Residential sites allocated in Blidworth, within 5km of woodlark and nightjar IBAs

8.3.1 BI/Ho/1 includes proposals for 55 dwellings, BI/Ho/2 gained planning permission for 12 dwellings in 2014 whilst an application for 21 dwellings I currently being considered. BI/Ho/3 includes proposals for 100 residential units. The combined 188 dwellings that could be introduced in to Blidworth could potentially equate to 45 - 58homes housing at least one dog (see **Section 8.1**). It lies just north west of nightjar and woodlark IBAs (see **Figure 8.3**).

-
- 8.3.2 The area of nightjar and woodlark IBA south of the sites are the Blidworth Woods, a southern section of Sherwood Forest consisting of pine woods and open heath. The woods are managed by the Forestry Commission and offer an undulating topography suitable for walking and horse riding. The woods have two car parks, a refreshment cabin, information panels and maps of the woods. Walking routes are promoted, including a 'Blidworth Woods Dog Loop', a waymarked 0.5km walk for dog walkers. It requests responsible dog ownership. As the wood is used extensively by permit holding horse riders all year round, dogs are required to be kept under control at all times.
- 8.3.3 The area of woodlark IBA south east of the sites is Haywood Oaks, also managed by the Forestry Commission, England. These woods have two car parks, a network of footpaths and rely on dog owners to act responsibly.
- 8.3.4 The woods could potentially come under increased recreational pressures as a result of the scale of the development promoted in the LPR. However, visitors to the woods are considered highly likely to stick to the promoted routes and the distribution of visitors with their dogs will likely be the same as it currently is.

8.4 Bi/MU/1 & Bi/Ho/2 - Bilsthorpe

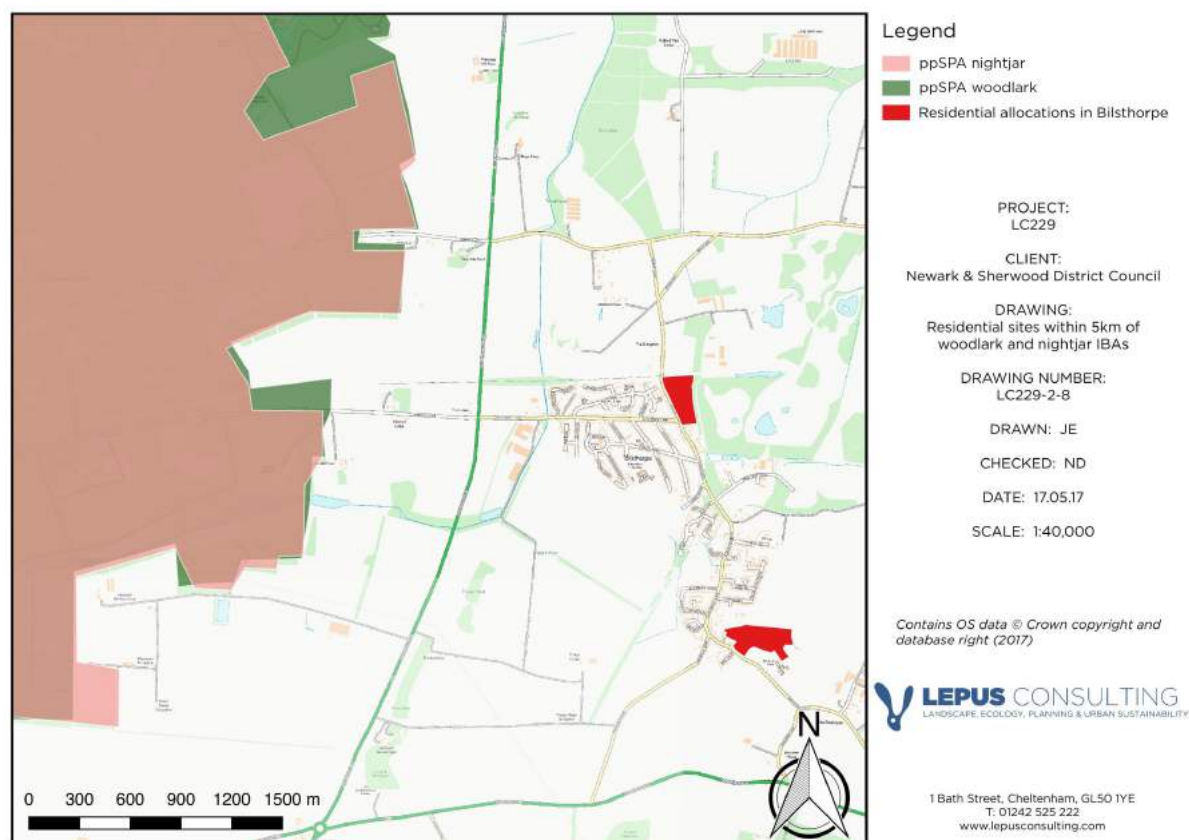


Figure 8.4: Residential site allocations in Bilsthorpe in relation to IBAs of woodlark and nightjar

8.4.1 Bi/Mu/1 includes proposals for 75 residential units, whilst Bi/Ho/2 includes proposals for 135 residential units (see **Figure 8.4**). The combined 210 residential units could potentially equate to an additional 50 - 65 houses each being home to at least one pet dog in Bilsthorpe (see **Section 8.1**).

8.4.2 This area of Sherwood Forest ppSPA is Sherwood Pines Forest. It's the location of a Centre Parcs holiday resort as well as numerous and highly popular recreational opportunities such as walking trails, Mushroom Village, cycling routes, running routes, Go Ape and large scale live music events such as Forest Live 2017. It has a large, landscaped car park, visitor centre and café and is managed by the Forestry Commission.

8.4.3 The IBAs have a closely managed network of paths running through the forest. It's already highly popular with visitors and the proposed development for Bilsthorpe is anticipated to increase visitor pressure to a negligible extent based on current levels. These additional visitors are also anticipated to follow the paths currently followed by visitors, thereby preserving the existing distribution of people and their dogs.

8.5 OB/Ho/2, OB/MU/1 & OB/MU/2 - Ollerton & Boughton

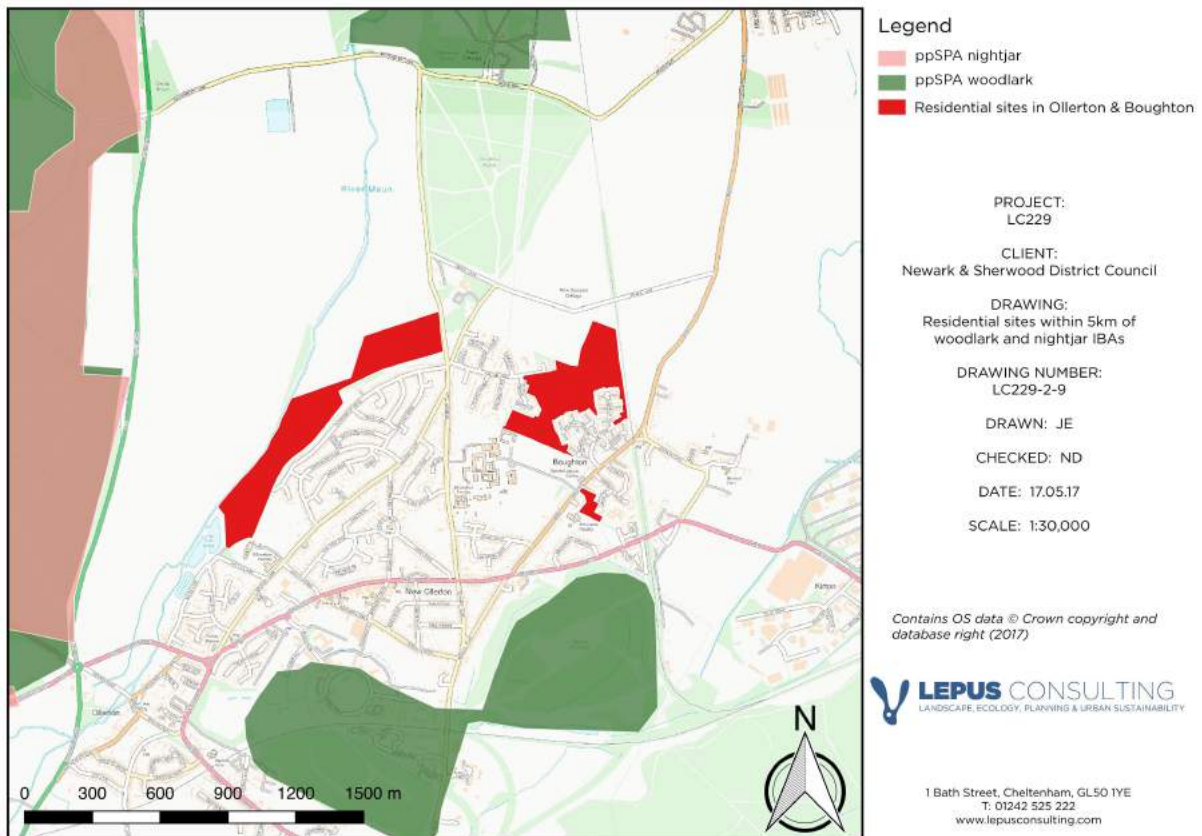


Figure 8.5: Residential allocations in Ollerton & Boughton in relation to nightjar and woodlark IBAs

8.5.1 OB/Ho/2 includes proposals for 25 residential units, OB/MU/1 for 225 units and OB/MU/2 for 120 units (see **Figure 8.5**). The combined 360 units are considered to be within 5km of nightjar and woodlark IBAs and could potentially equate to an increase in the number of houses in Ollerton & Boughton housing dogs by 86 - 112 (see **Section 8.1**).

8.5.2 South of the residential allocations in Ollerton & Boughton is Ollerton Pit Wood, an area of woodland managed by the Forestry Commission that offers surfaced tracks and way marked trails.

- 8.5.3 Just west of Ollerton Pit Wood is an area of woodland with public footpaths. Both of these areas of woodland are nestled between urban areas of residential properties. West of these residential allocations lies Thoresby Park and Birklands West and Ollerton Corner SSSI. This area of woodland is home to a network of access limited roads. North of this woodland is The Sherwood hideaway forest retreat, a holiday park with cabins.
- 8.5.4 North of the residential allocations is Walesby Forest, which is home to an International Outdoor Education Activity Centre.
- 8.5.5 It is considered likely that the increase in dog walkers that is negligible in relation to current levels. However it is not anticipated that there would be a change in the distribution of visitors and dogs, with each site offering an existing managed network of footpaths and trails.

8.6 Ra/Ho/1 & Ra/Ho/2 - Rainworth

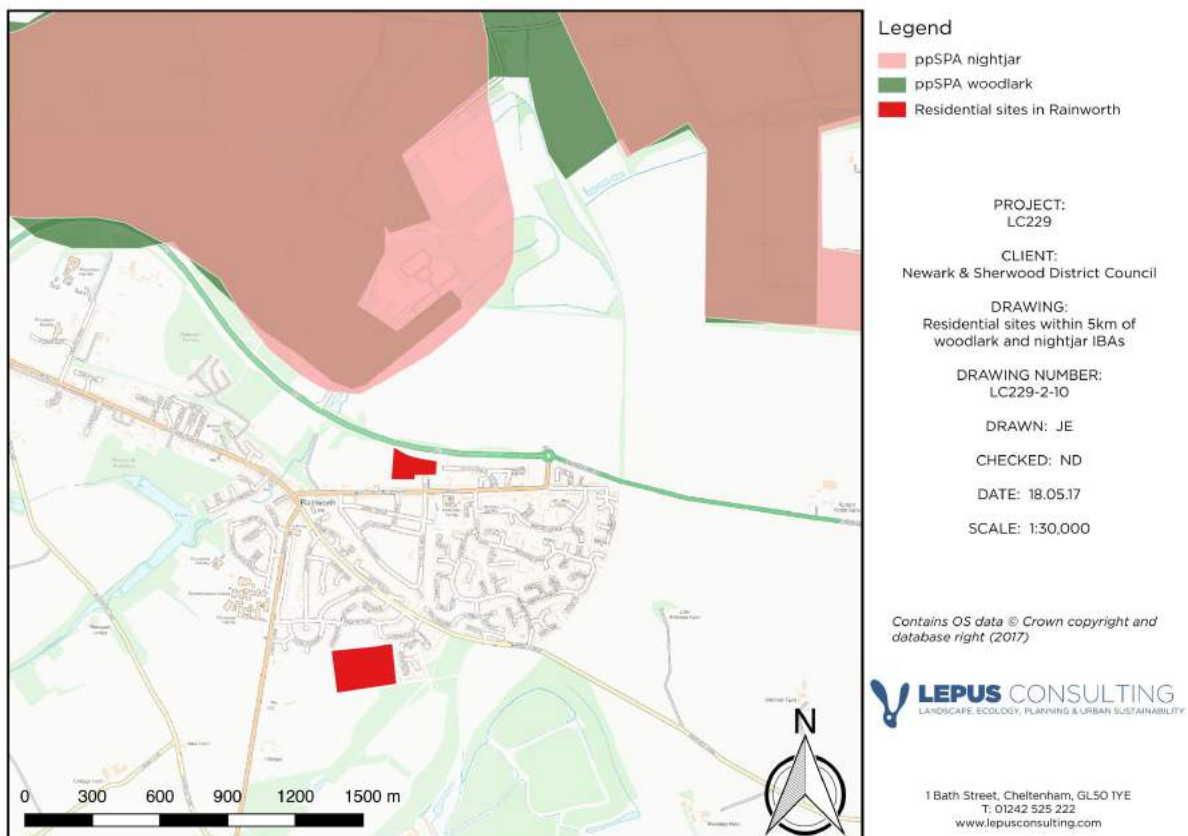


Figure 8.6: Residential allocations in Rainworth in relation to nightjar and woodlark IBAs

-
- 8.6.1 Ra/Ho/1 includes proposals for 54 units and Ra/Ho/2 for 100 units (see **Figure 8.6**). The combined 154 units could potentially equate to an increase in the number of houses that are home to at least one dog in Rainworth by 37 – 48 (see **Section 8.1**).
- 8.6.2 The IBAs to the north of these sites are comprised of Rainworth Heath SSSI/Rainworth Heath Nature Reserve, The Hundred Acres and Sherwood Pines Forest Park. Rainworth Nature Reserve is one of the last remaining areas of heathland in Nottinghamshire. It's open to the public all year round with clearly marked walking trails but dogs are only allowed when kept on a lead.
- 8.6.3 The Hundred Acres is popular with walkers and offers a range of ordnance survey trails. The Sherwood Pines Forest offers popular recreational opportunities such as walking trails, Mushroom Village, cycling routes, running routes, Go Ape and large scale live music events such as Forest Live 2017. It has a large, landscaped car park, visitor centre and café and is managed by the Forestry Commission.
- 8.6.4 Residents would need to cross over the A617 dual carriageway to reach this area of the ppSPA. It is considered likely that increases in dog walkers caused by this site would be negligible in relation to current levels. New dog walkers to the site are also anticipated to preserve the existing distribution in visitors and dogs due to the existing and popular network of footpaths and activities at the forests to the north.

8.7 Ed/Ho/2 & ShAP4 - Edwinstowe

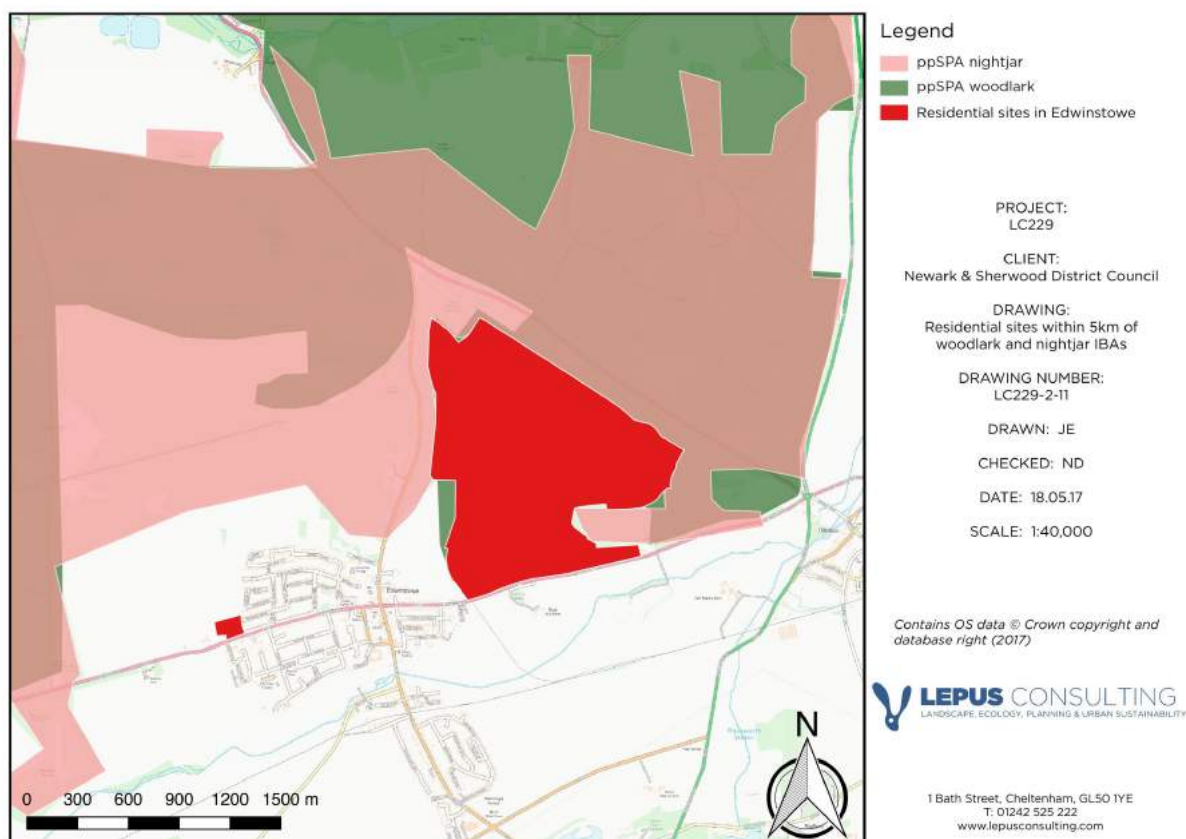


Figure 8.7: Residential allocations in Edwinstowe in relation to nightjar and woodlark IBAs

- 8.7.1 Policy Ed/Ho/2 proposes 50 residential units (see **Figure 8.7**). ShAP 4 proposes 800 residential units. The combined 850 residential units in Edwinstowe could potentially equate to an increase in the number of homes housing at least one pet dog by 204 - 264 (see **Section 8.1**).
- 8.7.2 North of Edwinstowe lies woodland that is designated as Birkland & Bilhaugh SAC, as well as Sherwood Forest County Park National Nature Reserve and Birklands and West Ollerton SSSI. Policy ShAP4 is considered to be within the boundaries of woodlark IBA, although this area is currently made up of the out of use Thoresby Colliery.
- 8.7.3 These woodlands have a range of walking trails advertised to the public. They receive a large number of visitors, particularly in the vicinity of Major Oak which is famous through the legend of Robin Hood.

8.7.4 It is considered likely that new residents in Edwinstowe will utilise these woodlands for walking dogs on a regular basis, given the proximity of the woodlands, their attractive nature and the trails on offer. However, it is also considered likely that the woodlands are closely managed due to the number of visitors, and any increase would be negligible in relation to current levels. New visitors are not anticipated to change the distribution of people and their dogs throughout the woodlands.

8.8 Conclusions

8.8.1 It is considered likely that 24 - 31% of houses will be home to at least one dog (see **Section 8.1**). If so, the development proposed in the LPR would result in approximately 422 - 545 additional houses within 5km of the nightjar and woodlark IBAs being home to at least one dog. Owners are considered likely to utilise areas of Sherwood Forest ppSPA because of the attractive and tranquil nature of the woodland and heathland, the variety of trails on offer and the ease of accessibility stemming from numerous car parks and visitor centres.

8.8.2 However, the majority of these areas are managed by the Forestry Commission as well as volunteer groups and Natural England. Whilst the networks of trails and routes attract dog walkers, they also increase the likelihood that new dog walkers will stick to the same routes throughout the ppSPA that current users do. In many cases, the IBAs are not the closest potential dog walking location for residents. Overall, the increase in visitors caused by the LPR is anticipated to be negligible in relation to current levels, whilst the distribution of these people and dogs throughout the ppSPA is anticipated to remain unchanged.

8.8.3 It is considered likely that the scale of development proposed in the LPR could potentially lead to an increase in disturbance and predation of the nightjar and woodlark of Sherwood Forest ppSPA due to pet dogs. **Chapter 9** considers this impact in the context of Core Policy 12: Biodiversity & Green Infrastructure of the LDF Core Strategy DPD, and Policy DM 7: Biodiversity & Green Infrastructure of the LDF Allocations & Development Management DPD.

9 Conclusions and mitigation

9.1 Birkland and Bilhaugh SAC

9.1.1 Based on the conclusions of the Redmore Air Quality Assessments, and in agreement with Natural England, it is considered that an LSE on the SAC as a result of air pollution caused by the scale of development proposed in the LPR can be objectively ruled out at this stage.

9.2 Nightjar and woodlark

9.2.1 It is considered likely that, in the absence of mitigation, the scale of development proposed in the LPR could lead to an increase in predation and disturbance of nightjar and woodlark individuals and nests due to the introduction of pet cats and dogs (see **Chapter 7** and **Chapter 8**).

9.2.2 Nightjar and woodlark are an Annex 1 species of the Birds Directive. The Council is therefore obligated to use best endeavours to try and ensure that the development proposed in the LPR avoids an LSE on populations of nightjar and woodlark of Sherwood Forest ppSPA. In 2006 Case C-418 was brought against Ireland by the EU Commission in relation to the inadequacy of their SPA protection. During this, best endeavours was interpreted as:

9.2.3 *“Article 4(4) of the Birds Directive does not mean that the damage to be avoided must be prevented. It is not an obligation as to the result to be achieved but rather a duty of diligence, or to be more precise, a duty to use best endeavours... Serious endeavours, namely the taking of all reasonable measures to achieve the success being sought, require targeted action.”⁸⁷*

⁸⁷ EU Commission (2006) Case C-418/04 Commission of the European Communities v Ireland. Available online at: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:62004CC0418>

- 9.2.4 Core Policy 12: Biodiversity & Green Infrastructure of the LDF Core Strategy DPD, and Policy DM 7: Biodiversity & Green Infrastructure of the LDF Allocations & Development Management DPD, require the Council to conserve and enhance the biodiversity and geodiversity assets of the District. The council is therefore committed to conserving and enhancing the habitats and populations of nightjar and woodlark in the District.
- 9.2.5 Committing to Policy DM 7 includes the provision for SANGS, which would be anticipated to offer dog walkers alternative locations to IBAs for walking their dogs. The quantity and quality of SANGS will be developed and agreed on with Natural England. Core Policy 12 includes a commitment to implement the aims and proposals of the Nottinghamshire Local Biodiversity Action Plan, within which is a commitment to the conservation of Annex 1 species in the Birds Directive. This would therefore include nightjar and woodlark.
- 9.2.6 In the absence of mitigation, the development proposals discussed in **Chapter 7** and **Chapter 8** are considered likely to adversely impact nightjar and woodlark due to the introduction of pet dogs and cats. However, because of the Council's existing commitment to ensuring these adverse impacts are avoided, it is anticipated that appropriate mitigation measures will be adopted. The details of these measures should be finalised at the reserve matters stage, although Lepus has put forward recommendations for consideration in **Table 9.1**. Whilst the details can be agreed on at the planning application stage, it is important that the measures adopted are consistent, clear and informed by the latest data. They should form a coherent strategy to ensure the nightjar and woodlark are protected.
- 9.2.7 It is also anticipated that the effectiveness of mitigation will be adequately monitored. The results of this monitoring should be used to inform decision on the mitigation strategy, and whether measures should be reviewed or changed to ensure the Annex 1 bird species remain adequately protected.
- 9.2.8 Further, the Nottinghamshire Wildlife Trust (NWT) were also consulted on the proposed development of the former Thoresby Colliery. With regards to the Country Park, the NWT recommended:

“An extension of habitat management on the pit tip beyond the 5 year statutory aftercare period required under the current mineral permission, financed through this proposed development... the absence of such a commitment to long term (at least 25 years) conservation management, the Tip habitats cannot be claimed as SANGs, as the impact of the residents would, of course, be in perpetuity.”

9.2.9 As the introduction of a residential community will bear impacts on the surrounding habitats in perpetuity, conservation management of the Country Park should be a long term commitment.

9.2.10 It is considered that the Council's commitments to Core Policy 12 and Policy CM 7 represent best endeavours to adequately protect the District's biodiversity assets, including nightjar and woodlark. Based on the reasonable assumption that adequate mitigation measures will be adopted where development may adversely impact these Annex 1 birds, because of Core Policy 12 and Policy DM 7, it is considered that an LSE can be ruled out at this stage.

Table 9.1: Recommendations for appropriate mitigation measures to prevent potential adverse impacts of development on nightjar and woodlark. The finalised strategy should be agreed on during the planning application process for any development which may adversely impact nightjar and woodlark.

Strategy	Details
<p>1. Raise awareness amongst residents via leaflets, accessible and online advice and the use of wardens or volunteers</p>	<ul style="list-style-type: none"> - Inform residents on the location of IBAs (using boundary of Sherwood Forest ppSPA designed by Natural England, see Appendix F); - Inform residents on the preferred habitat ranges of nightjar and woodlark, as well as their appearance; - Advise owners to put collars and bells on pet cats, particular if within 400m of IBAs; - Advise owners to be aware of the activities of pet cats; - Request owners to report predation incidents of nightjar and woodlark to the Council to inform Strategy 4.
<p>2. Keep dogs on leads during the breeding season and direct dog walkers away from areas of sensitive IBAs</p>	<ul style="list-style-type: none"> - Inform residents in leaflets (see Strategy 1) of locations of IBAs and where dogs should not be walked, as well as to keep dogs on existing walking paths when near IBAs; - Place signs near entrances to sensitive IBAs advising residents to keep dogs on leads, stick to existing walking paths and of alternative dog walking locations; - Encourage dog owners to challenge irresponsible dog owners; - Use wardens or volunteers on site to speak with dog owners as they arrive.
<p>3. Provide Suitable Alternative Natural Greenspaces for dog walkers</p>	<ul style="list-style-type: none"> - The Country Park of the proposed Thoresby Colliery redevelopment is suitable nightjar and woodlark habitat and should not be used as SANGs; - Instead, informal and recreational green space should be provided for residents of the former Thoresby Colliery to walk dogs at locations distant from IBAs.
<p>4. Survey nightjar and woodlark</p>	<ul style="list-style-type: none"> - Surveys of nightjar in Sherwood Forest ppSPA should be arranged and completed between May and July 2018. The counting unit is the calling (churring) male, counted at dusk on calm days⁸⁸; - Surveys of woodlark in Sherwood Forest ppSPA should be arranged and completed between February and July 2018. The counting units is the singing males on clear, dry mornings⁸⁹.

⁸⁸ C. J. Bibby, N. D. Burgess, D. A. Hill & S. H. Mustoe (2000) Bird Census Techniques, 2nd Edition, 2000, Academic Press

⁸⁹ S.R. Wotton & S. Gillings (2000) The status of breeding Woodlarks Lullula arborea in Britain in 1997, Bird Study, 47:2, 212-224

5. Monitor nightjar and woodlark populations

- The population and distribution of nightjar and woodlark in Sherwood Forest ppSPA should be monitored through further survey work, potentially bi-annually;
- Should the population and/or distribution appear to be in decline, the Council should review this mitigation strategy and adopt the necessary measures to ensure the birds are adequately protected.

APPENDIX A

Table A.1: European sites and their conservation objectives (source: Natural England).

Birklands & Bilhaugh SAC
<p>Conservation objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying features, by maintaining or restoring;</p> <ul style="list-style-type: none">• The extent and distribution of qualifying natural habitats;• The structure and function (including typical species) of qualifying natural habitats; and• The supporting processes on which qualifying natural habitats rely. <p>Qualifying Features:</p> <ul style="list-style-type: none">• H4010: Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains; Dry oak-dominated woodland
Sherwood Forest ppSPA
<p>Conservation objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying features, by maintaining or restoring;</p> <ul style="list-style-type: none">• The extent and distribution of qualifying natural habitats;• The structure and function (including typical species) of qualifying natural habitats; and• The supporting processes on which qualifying natural habitats rely. <p>Qualifying Features:</p> <ul style="list-style-type: none">• A224: <i>Caprimulgus europaeus</i>; European nightjar (Breeding); and• A246: <i>Lullula arbore</i>; Woodlark (Breeding).

APPENDIX B

Table B.1: Pressures and threats for European sites identified in Site Improvement Plans and Natura 2000 Data forms and Natural England advice notes. AQF stands for all qualifying features, which can be seen in their full in **Appendix A**.

Threats/ Pressures	Birklands & Bilhaugh SAC ⁹⁰	Sherwood Forest ppSPA ⁹¹
Public access/ disturbance	AQF	AQF
Planning permission: general	AQF	n/a
Change in land management	AQF	n/a
Physical modification	AQF	n/a
Air pollution	AQF	n/a
Disease	AQF	n/a
Invasive species	AQF	n/a
Loss or fragmentation of habitat	n/a	AQF
Bird mortality - predation or traffic	n/a	AQF
Human induced hydraulic changes	AQF	n/a
Changing cultivation practices	All qualifying features (N2K)	n/a

⁹⁰ Natural England (2015) Site Improvement Plan Birklands & Bilhaugh SAC

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

APPENDIX C: Summary screening of LPR Preferred Approach – Strategy

Table C.1: Summary screening of the LPR Preferred Approach – Strategy. None of the proposed policies are considered to have a likely significant effect.

Screening conclusion categories are taken from Chapter F of The Habitats Regulations Assessment Handbook (DTA Publications, 2013).

Section of the document	Assessment	Proposed development	Screening conclusion (Category)
1.00	Introduction		
2.00	Context & Approach		
3.00	Spatial Strategy		
3.1 - 3.50	Background on Options for Objectively Assessed Housing Need, Approaches for Thoresby Colliery		
Spatial Policy 1	Settlement Hierarchy	Identifies settlements central to the delivery of the spatial strategy.	Screened out (K)
Spatial Policy 2	Spatial Distribution of Growth	Growth in Newark and Sherwood District will focus on supporting the sub-regional centre of Newark Urban Area, regeneration and securing sustainable communities.	Screened out (K)
3.52 - 3.55	Background on housing requirements and allocations		
3.56 - 3.63	Background on Options for Spatial Policy 3.		
Spatial Policy 3	Rural Areas	Addressing housing need and providing economic support in rural areas. Proposes protection for the landscape and biodiversity whilst woodland cover will be encouraged in the right locations.	Screened out (D)
3.64 - 3.69	Background on Spatial Policies 4a and 4b		
Spatial Policy 4a	Extent of the Green Belt	The extent of the Nottingham - Derby Green Belt which lies within Newark & Sherwood District will remain unchanged.	Screened out (G)
Spatial Policy 4b	Green Belt Development	Within the Green Belt, new housing and employment development will be focused in Blidworth, Lowdham and Gunthorpe.	Screened out (K)
3.70	Background on delivering the strategy		

Spatial Policy 5	Delivering the Strategy	Sufficient sites have been allocated to ensure housing need is met if some sites don't deliver.	Screened out (G)
4.00	Housing Policy		
4.1 - 4.20	Affordable housing requirements, consultation and options		
Core Policy 1	Affordable Housing Provision	The district requires the provision of affordable housing in all qualifying developments.	Screened out (G)
4.21 - 4.23	Background on Core Policy 3		
Core Policy 3	Housing Mix, Type and Density	Developments must adequately address housing needs of the district (i.e. 1 bed, 2 bed etc.) at a density of 30 - 50 dwellings per hectare.	Screened out (K)
4.24 - 4.27	Background on Core Policy 4		
Core Policy 4	Gypsies & Travelers - New Pitch Provision	Council will identify 40 pitches to meet needs identified in most recent Gypsy and Traveler Accommodation Assessment.	Screened out (K)
4.28 - 4.30	Background on Core Policy 5		
Core Policy 5	Criteria for Considering Gypsies & Travelers and Travelling Showpeople	List of criteria for guiding allocation of individual sites.	Screened out (B)
5.00	Minor Policy Amendments		
5.1 - 5.2	Background on policies that require amendments		
Spatial Policy 6	Infrastructure for Growth	Ensuring the delivery of infrastructure to support growth in the district.	Screened out (K)
5.3 - 5.5	Background on sustainable transport		
Spatial Policy 7	Sustainable Transport	Council will support development proposals that promote integrated transport network, public transport, rural accessibility and enhance pedestrian environment.	Screened out (D)
5.6 - 5.8	Background on Spatial Policy 8		
Spatial Policy 8	Protecting and Promoting Leisure and Community Facilities	Provision of new community and leisure facilities will be encouraged.	Screened out (K)
5.9 - 5.11	Background on Spatial Policy 9		
Spatial Policy 9	Selecting Appropriate Sites for Allocation	Set of criteria for the selection of sites for housing, employment and community facilities.	Screened out (B)

5.12 - 5.14	Background on Core Policy 6		
Core Policy 6	Shaping our Employment Profile	Plans to strengthen and broaden the economy of Newark and Sherwood District.	Screened out (K)
5.15 - 5.19	Background on Core Policy 7		
Core Policy 7	Tourism Development	The District Council will view positively proposals will help realise the tourism potential of the District.	Screened out (K)
5.20 - 5.23	Background on Core Policy 10		
Core Policy 10	Climate Change	The District Council is committed to tackling the causes and impacts of climate change and reducing the District's carbon footprint. This includes promoting renewable energy, energy efficiency, minimising environmental impacts of developments building away from flood risk zones and sustainably managed drainage systems.	Screened out (D)
5.24 - 5.27	Background on Core Policy 13		
Core Policy 13	Landscape Character	The District Council will work with developers to ensure that valued landscapes are protected and enhanced.	Screened out (D)
5.28 - 5.31	Background on Core Policy 14		
Core Policy 14	Historic Environment	District Council will work with developers to help protect and enhance the character and appearance of heritage assets and historic environment, such as listed buildings.	Screened out (D)
Appendix A	Plan Review Stages		
Appendix B	Current Settlement Facilities		

Assessment and reasoning categories from Chapter F of The Habitats Regulations

Assessment Handbook (DTA Publications, 2013):

A: General statements of policy / general aspirations

B: Policies listing general criteria for testing the acceptability / sustainability of proposals

C: Proposal referred to but not proposed by the plan

D: Environmental protection / site safeguarding policies

E: Policies or proposals that steer change in such a way as to protect European sites from adverse effects

F: Policies or proposals that cannot lead to development or other change

G: Policies or proposals that could not have any conceivable or adverse effect on a site

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)

I: Policies or proposals with a likely significant effect on a site alone

J: Policies or proposals not likely to have a significant effect alone

K: Policies not likely to have a significant effect either alone or in combination

L: Policies or proposals likely to have a significant effect in combination

APPENDIX D:

Summary screening of LPR Preferred Approach – Sites & Settlements

Table C.1: Summary screening of the LPR Preferred Approach – Sites & Settlements.

Screening conclusion categories are taken from Chapter F of The Habitats Regulations Assessment Handbook (DTA Publications, 2013).

Section of plan	Assessment	Proposed developments	Screening conclusion (Category)
3.0 Newark Area			
3.0 - 3.4	General background on previous policies and changes that have been made		Screened out (A)
3.5 - 3.6	Newark Area Employment Allocations - background on requirements and identified sites		Screened out (A)
3.7	Policies NUA/E/2, NUA/E/3, NUA/E/4, NUA/MU/1, NUA/MU/2, NUA/MU/3 and Co/MU/1 (39.5ha). Land allocated on NAP2C (15ha)	54.5ha employment land	Screened out (K)
3.8 - 3.9	General background on requirements and sites already granted planning permission		Screened out (A)
3.10	Newark Urban Area Housing Sites 2 - 4 and 6 - 10 and Newark Urban Mixed Use Sites 3 and 4 (3,230 dwellings) Opportunity Sites (i.e. four brownfield sites) (745 dwellings)	3,975 dwellings (2,400 dwellings of Residual Strategic Site Allocations (NAP2B&C) and 830 allocations which remain suitable)	Screened out (K)
3.11 - 3.14	Gypsy & Travelers Site Provision - requirements		Screened out (A)
3.15 - 3.16 Sutton on Trent	Developments already pending planning permission		Screened out (A)
4.0 Southwell Area			
4.1 - 4.7	General background on policies		Screened out (A)

4.8	Policies So/E/2, So/E/3 and Fa/MU/1	5.41ha employment land	Screened out (K)
4.9 - 4.10 Southwell	Background on requirements and sites identified		Screened out (A)
4.11	Policies So/Ho/1, 2, 3, 5, and 7	220 dwellings	Screened in (I)
4.12	General statement on 4.11		Screened out (A)
4.13 - 4.14 Farnsfield	Background on requirements and sites already granted planning permission		Screened out (K)
5.0 Nottingham Fringe Area			
5.1 - 5.6	General background on policies and sites already granted planning permission		Screened out (A)
6.0 Sherwood Area			
6.1 - 6.26	General background on policies and the role of Edwinstowe, including redevelopments of Thoresby Colliery (actual policy proposals in 6.32)		Screened out (A)
6.27	Policies OB/E/3 and Bi/E/1 and 8ha of employment land proposed for Thoresby Colliery redevelopment	16.17ha employment land	Screened out (K)
6.28	Ollerton & Boughton - residual requirements and sites already granted planning permission.		Screened out (A)
6.29 - 6.30	Policy OB/Ho/2	25 dwellings	Screened in (I)
	Policy OB/MU/1	225 dwellings	Screened in (I)
	Policy OB/MU/2	120 dwellings	Screened in (I)
6.32 - 6.33 Edwinstowe	General background on requirements and sites already granted planning permission		Screened out (A)
6.34	Policy ShAP 4 (Thoresby Colliery Redevelopment)	800 dwellings. redeveloped pit head, new primary school, public open	Screened in (I)

		space and green infrastructure	
6.35 Bilsthorpe	General background on requirements		Screened out (A)
6.36	Policies Bi/Ho/2 and Bi/MU/1	210 dwellings	Screened in (I)
7.0 Mansfield Fringe			
7.1 - 7.3	General background on requirements		Screened out (A)
7.4	Policies Ra/E/1, CI/MU/1 and BI/E/1	17.5ha employment land	Screened out (K)
7.5 Rainworth	General background on requirements and sites already granted planning permission		Screened out (A)
7.6 - 7.7	Policies Ra/Ho/1 and Ra/Ho/2	154 dwellings	Screened in (I)
7.8 Clipstone	General background on policies and requirements		Screened out (A)
7.9	Policy CI/MU/1	120 dwellings	Screened in (I)
7.10 Blidworth	General background on requirements and sites already granted planning permission		Screened out (A)
7.11 - 7.12	Policies BI/Ho/1 Land and BI/Ho/3	155 dwellings	Screened in (I)
8.0 Local Drainage Designations			
8.1 - 8.5	Background on flooding risk and SFRA		Screened out (A)
Summary		6,004 dwellings	

APPENDIX E:

Summary screening of LPR Preferred Approach – Town Centres & Retail

Table E.1: Summary screening of the LPR Preferred Approach – Town Centre and Retail. None of the proposed policies are considered to have a likely significant effect. Screening conclusion categories are taken from Chapter F of The Habitats Regulations Assessment Handbook (DTA Publications, 2013).

Section of the document	Assessment	Proposed development	Screening conclusion
1: Town Centre & Retail	Background on town centre and retail needs and preferred approaches		Screened out (A)
2: Town Centre & Retail Policies	Amendments to town centre and retail policies		
Core Policy 8	Retail & Town Centres	Amendments to the policy of maintaining and enhancing the vitality and viability of centres	Screened out (H)
Policy DM11	Retail & Town Centre Users	Amendments to the policy of assessment of retail development and Town Centre uses hierarchy	
3: Area Policies	Amendments to area policies		
Policy NAP1	Newark Urban Area	Amendments to policy with regards to Newark Town Centre	Screened out (H)
Policy SoAP1	Role and Setting of Southwell	Amendments to policy with regards to promoting a healthy town centre	Screened out (H)
Policy ShAP2	Role of Ollerton & Boughton	Amendments to policy to promote a healthy town centre	Screened out (H)
Policy ShAP2	Role of Edwinstowe	Amendments to policy to promote a healthy town centre	Screened out (H)
4: Main Town Center & Retail Allocations	A number of amendments to existing Town Centre & retail applications		
Policy OB/Re/2	Ollerton & Boughton - Retail Allocation 2	Improve linkages between Tesco and the centre	Screened out (H)
Policy OB/Re/1	Ollerton & Boughton - Retail Allocation 1	Amendments to policy to promote a healthy town centre	Screened out (H)
Policy NUA/MU/3	Newark Urban Area - Mixed Use Site 3	Amending the policy to meet retail requirements	Screened out (H)
Policy Ra/MU/1	Rainworth - Mixed Use Site 1	Proposed in Settlements & Sites paper	Screened out (H)
5: Main Town Centre & Retail Designations			
5.2 – 5.4	Amendments for Newark, Ollerton and Edwinstowe Town Centres		Screened out (H)

APPENDIX F

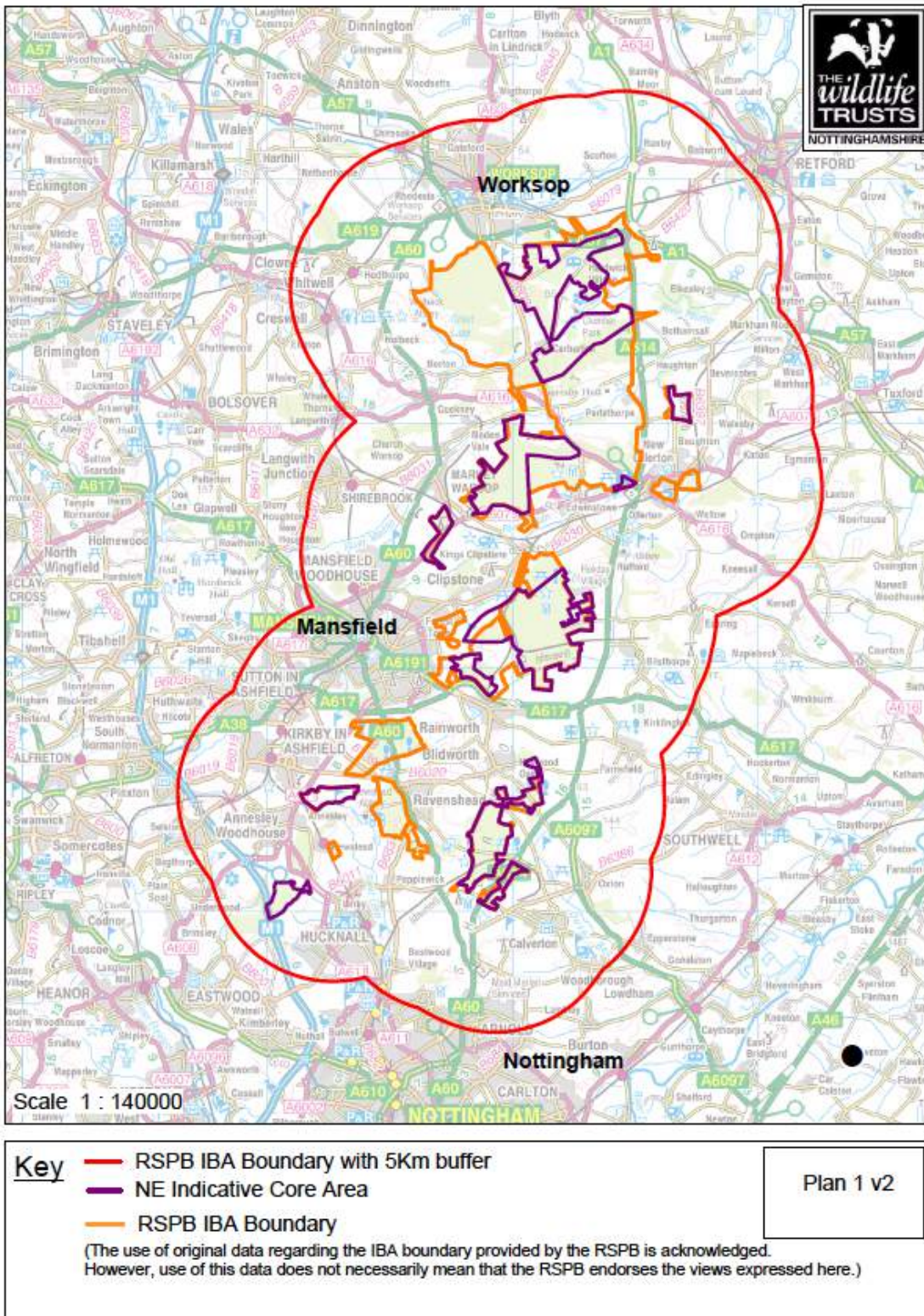


Figure F.1: Map illustrating Important Bird Areas of Sherwood Forest ppSPA with a 5km buffer zone, submitted as evidence to the Rufford ERF Public Inquiry 2010⁹².

⁹² Map is available online at: <http://www.newark-sherwooddc.gov.uk/media/newarkandsherwood/imagesandfiles/planningpolicy/pdfs/>

Habitat 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



© Lepus Consulting Ltd
1 Bath Street Cheltenham GL50 1YE
T: 01242 525222
E: enquiries@lepusconsulting.com
www.lepusconsulting.com
CHELtenham



Lepus Consulting
1 Bath Street
Cheltenham
Gloucestershire GL50 1YE

t: 01242 525222
w: www.lepusconsulting.com
e: enquiries@lepusconsulting.com