

# Habitats Regulations Assessment of the Newark and Sherwood Local Plan Review

## HRA Screening Document

January 2017



**LEPUS** CONSULTING  
LANDSCAPE, ECOLOGY, PLANNING & URBAN SUSTAINABILITY

# Habitats Regulations Assessment of the Newark and Sherwood District Local Plan Review.

Screening Report encompassing preferred  
approach for:

Strategy

Sites and Settlements

Town Centres and Retail

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# Acronyms

<b>AA</b>	Appropriate Assessment
<b>AQMA</b>	Air Quality Management Area
<b>CAMS</b>	Catchment Area Management Strategy
<b>DEFRA</b>	Department for Environment, Food, and Rural Affairs
<b>EA</b>	Environment Agency
<b>ERF</b>	Energy Recovery Facility
<b>EU</b>	European Union
<b>GIS</b>	Geographic Information Systems
<b>HRA</b>	Habitats Regulations Assessment
<b>IPENS</b>	Improvement Programme for England's Natura 2000 sites
<b>IROPI</b>	Imperative Reasons of Overriding Public Interest
<b>JNCC</b>	Joint Nature Conservation Committee
<b>LPA</b>	Local Planning Authority
<b>LPR</b>	Local Plan Review
<b>LSE</b>	Likely Significant Effect
<b>NE</b>	Natural England
<b>NPPF</b>	National Planning Policy Framework
<b>RSPB</b>	Royal Society for the Protection of Birds
<b>ppSPA</b>	Possible Potential Special Protection Area
<b>SAC</b>	Special Area of Conservation
<b>SANGS</b>	Suitable Alternative Natural Greenspace
<b>SIP</b>	Site Improvement Plan
<b>SNH</b>	Scottish Natural Heritage
<b>SPA</b>	Special Protection Area
<b>SSSI</b>	Site of Special Scientific Interest
<b>SuDS</b>	Sustainable Drainage Systems
<b>WRMP</b>	Water Resource Management Plan
<b>WRZ</b>	Water Resource Zone

# Executive Summary

- E1** This HRA screening report has carefully considered the conservation objectives of European sites that might be associated with activities and projects as part of the Newark and Sherwood Local Plan Review.
- E2** 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 for sites & settlements;
  - Preferred approach for strategy; and
  - Preferred approach retail & town centres.
- E3** Lepus identified one European site that lies within 15km of the boundary of the Newark and Sherwood district and one possible potential European site.
- E4** The following sites therefore feature in this HRA screening report:
- Birkland and Bilhaugh SAC; and
  - Sherwood Forest ppSPA.
- E5** Several recognised threats and pressures are associated with these sites as identified by Natural England. This HRA screening report explores the extent to which, if any, the proposals associated with the Local Plan Review will exacerbate or alleviate these threats and pressures.
- E6** Likely significant effects of the Local Plan Review on Birkland and Bilhaugh SAC associated with air pollution, disease and/ or human induced hydraulic changes can be objectively ruled out based on the current information available.
- E7** Atmospheric nitrogen deposition at Birkland and Bilhaugh SAC is greater than the site's critical load. Developments proposed in the Local Plan Review could potentially increase atmospheric nitrogen deposition further. Such an increase in nitrogen deposition is considered likely to be negligible in relation to current levels of deposition and thus unlikely to have a significant effect alone. However, pre-existing poor air quality at

the site may be degrading ecosystem health. As the Local Plan Review could potentially exacerbate this issue it may be desirable to specifically seek the views of Natural England with regards to this.

- E8** Based on the available information, a likely significant effect associated with predation by cats on the breeding populations of nightjar and woodlark of Sherwood Forest ppSPA cannot be objectively ruled out. The Local Plan Review includes proposals for residential developments within 400m of Important Bird Areas in Sherwood Forest ppSPA and an increase in rates of predation by cats is therefore considered likely.
- E9** The Local Plan Review is considered likely to lead to an increase in the number of dogs being walked in Sherwood Forest ppSPA. Based on the currently available information, it is not possible to objectively rule out a likely significant effect associated with disturbance from dogs on the nightjar and woodlark of the site when adopting a precautionary approach.

# 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 2010<sup>1</sup> (the Habitats Regulations). The LPR is comprised of three documents, which are included in this assessment:

- Preferred approach for strategy;
- Preferred approach for sites & settlements; and
- Preferred approach retail & town centres.

1.1.2 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.

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<sup>1</sup> UK Government, (2010), The Conservation of Habitats and Species Regulations 2010



- 1.1.3 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 possible<sup>2</sup>. 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.
- 1.1.4 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 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’.
- 1.1.5 The full list of the nature of, and conservation objectives of, both sites can be found in **Table A.1** 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.
- 1.1.6 The full list of threats and pressures each site is currently facing can be found in **Table B.1**. In **Section 4.4** some threats and pressures are scoped out of the assessment. The remaining threats and pressures, which represent a focus of this screening exercise, include ‘air pollution’, ‘disease’, ‘human induced hydraulic changes’, ‘loss or fragmentation of habitat’ and ‘public access/ disturbance’. These can be seen in **Table 4.2**.

## 1.2 Approach to report preparation

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

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<sup>2</sup> 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

- 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; 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 Local Plan Review. This report sets the baseline with regards to European sites and determines whether the Local Plan Review is likely to have any significant effects on these sites.

### 1.3 The HRA process

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 The HRA process assesses the potential effects of a plan or project against the conservation objectives of any European sites designated for their importance to nature conservation. These sites form a system of internationally important sites throughout Europe and are known collectively as the 'Natura 2000 network'.

- 1.3.3 European sites provide valuable ecological infrastructure for the protection of rare, endangered or vulnerable natural habitats and species of exceptional importance within the EU. These sites consist of SACs, designated under the Habitats Directive, and SPAs, designated under European Directive 2009/147/EC *on the conservation of wild birds* (the Birds Directive). Additionally, Government policy requires that sites designated 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.
- 1.3.4 Under Regulation 102 of the Habitats Regulations, the assessment must determine whether or not a plan will adversely affect the integrity of the European sites concerned. The process is characterised by the precautionary principle. The European Commission describes the precautionary principle as follows:
- 1.3.5 *“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.”*
- 1.3.6 Decision-makers then have to determine what action/s to take. They should take account of the potential consequences of no action, the uncertainties inherent in scientific evaluation, and should consult interested parties on the possible ways of managing the risk. 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.
- 1.3.7 Action is then undertaken to obtain further information, enabling a more objective assessment of the risk. The measures taken to manage the risk should be maintained so long as scientific information remains inconclusive and the risk is unacceptable.

1.3.8 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 subsequently, 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.

1.3.9 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.

## 1.4 About the Local Plan Review

1.4.1 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 for strategy;
- Preferred approach for sites & settlements; and
- Preferred approach retail & town centres.

1.4.2 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 period<sup>3</sup>. The emerging Local Plan Review is the Council's proposal to meet this need.

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<sup>3</sup> Newark & Sherwood Local Development Framework (2015) Plan Review, Issue Paper, October 2015

### Preferred Approach for Strategy

- 1.4.3 The Preferred Approach – Strategy document focuses on updating policies of the Core, Spatial and Housing Strategies. Summary screening of this document can be seen in **Table C.1** in **Appendix C**. No amendments are proposed for Core Policy 12, ‘Biodiversity and Green Infrastructure’, which helps ensure the maintenance and enhancement of the natural and built environment in the district. Core Policy 12 seeks to secure development that provides Suitable Alternative Natural Greenspace (SANGS), develops the Green Infrastructure network and takes in to account the need for continued protection of the District’s ecological, biological and geological assets.

### Preferred Approach for Sites & Settlements

- 1.4.4 In the Sites & Settlements Preferred Approach document, 503 dwellings are referred to that have already been granted planning permission. These will not be included in this assessment. The document also refers to developments in the district that have already been completed since 2013, which will also be omitted from this screening.
- 1.4.5 The total number of dwellings proposed in the Sites & Settlements Preferred Approach document is 6,054. A total of 94.58 hectares of employment land is also proposed. 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 **Table D.1** in **Appendix D**.
- 1.4.6 Within the Preferred Approach - Sites & Settlements document are proposals to redevelop Thoresby Colliery. This represents a major portion and a relatively recent addition to the Local Plan Review. Thoresby Colliery closed in 2015 and 800 dwellings, 10ha 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. This is discussed in greater detail in **Section 4.9.9**.

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## Preferred Approach for Retail & Town Centres

- 1.4.7 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**.

## 1.5 HRA process to date

- 1.5.1 The HRA process is iterative and assesses different stages of the plan making process. The HRA process of this report draws on the updated methodology prepared by David Tyldesley Associates for the Habitat Assessment Handbook<sup>4</sup>, as explained in **Section 2.1**.
- 1.5.2 Newark and Sherwood District Council has determined the need for a HRA and has commissioned Lepus Consulting to undertake the scoping and screening stages for the Local Plan Review. This report constitutes a screening report, which includes the screening stages of **Figure 2.1**.

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<sup>4</sup> Tyldesley, D. (2013) The Habitats Regulations Assessment Handbook – Chapter F. DTA Publications

## 2 Methodology

### 2.1 Habitats Regulations Assessment methodology

2.1.1 HRA is a rigorous precautionary process centered on the conservation objectives of a 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.

2.1.2 There is no set methodology or specification for carrying out and recording the outcomes of the assessment process. Government guidance on the HRA process was published by Defra in 2013 as a consultation draft. In the absence of a finalised or alternative version since then, the 2013 consultation draft represents the government's most recent thinking.

2.1.3 The 2013 consultation draft helped inform the Habitats Regulations Assessment Handbook, produced by David Tyldesley Associates. The handbook, in particular '*Practical Guidance for the Assessment of Plans under the Regulations (September, 2013)*', which forms part F, was used to prepare this report. This is widely considered to be an appropriate basis for the HRA of plans, as the Handbook is also used by Natural England, the Government's statutory nature conservation organisation.

2.1.4 Screening of a plan for the likelihood of significant effects should be undertaken as soon as is practical. Most plans cannot be excluded, exempted or eliminated from assessment. If not, it is important to gather information on the European sites that may be affected by the plan. Each European site has conservation objectives, the integrity of which are currently under various pressures and facing various threats.

2.1.5 If a significant effect on a site because of a plan is considered likely, mitigation efforts may be incorporated in to the plan before it is rescreened in an iterative process. If a significant effect remains likely, an Appropriate Assessment on the plan may be required. This provides a better understanding of potential effects and therefore assists in the identification of suitable mitigation measures. Mitigation measures are then applied until no adverse effect on the site's integrity is predicted. Natural England, or the relevant statutory body, is also consulted over the findings of the draft HRA. A step-by-step guide to this methodology is outlined in the Practical Guidance and has been reproduced in **Figure 2.1**.

## 2.2 Dealing with uncertainty

2.2.1 The assessment of effects can be affected by uncertainty in a number of ways; some of these are addressed below.

### Regulatory Uncertainty

2.2.2 Some plans will include references to proposals that are planned and implemented through other planning and regulatory regimes, for example, trunk road or motorway improvements. These will be included because they have important implications for spatial planning, but they are not proposals of the Local Planning Authority (LPA), nor are they proposals brought forward by the plan itself. Their potential effects will be assessed through other procedures. The LPA may not be able to assess the effects of these proposals. Indeed, it may be inappropriate for them to do so, and would also result in unnecessary duplication.

2.2.3 There is a need to focus the Habitats Regulations Assessment on the proposals directly promoted by the plan, and not on all and every proposal for development and change, especially where these are planned and regulated through other statutory procedures, which will be subject to HRA.



### **Planning Hierarchy Uncertainty**

2.2.4 The higher the level of a plan in the hierarchy the more general and strategic its provisions will be and therefore the more uncertain its effects will be. The protective regime of the Directive is intended to operate at differing levels. In some circumstances assessment 'down the line' will be more effective in assessing the potential effects of a proposal on a particular site and protecting its integrity. However, three tests should be applied (see A, B and C below).

2.2.5 It will be appropriate to consider relying on the HRA of lower tier plans, in order for an LPA to ascertain a higher tier plan would not have an adverse effect on the integrity of a European site, only where:

A] The higher tier plan assessment cannot reasonably assess the effects on a European site in a meaningful way; whereas

B] The HRA of the lower tier plan, which will identify more precisely the nature, scale or location of development, and thus its potential effects, is able to change the proposal if an adverse effect on site integrity cannot be ruled out. This is because the lower tier plan is free to change the nature and/or scale and/or location of the proposal in order to avoid adverse effects on the integrity of any European site (e.g. it is not constrained by location specific policies in a higher tier plan); and

C] The HRA of the plan or project at the lower tier is required as a matter of law or Government policy.

2.2.6 It may be helpful for the HRA of the higher tier plan to indicate what further assessment may be necessary in the lower tier plan.

### **Implementation Uncertainty**

2.2.7 In order to clarify the approach where there is uncertainty because effects depend on how the plan is implemented, and to ensure compliance with the Regulations, it may be appropriate to impose a caveat in relevant policies, or introduce a free-standing policy, which says that any development project that could have an adverse effect on the integrity of a European site will not be in accordance with the plan.

2.2.8 This would help to enable the assessors to reasonably conclude, on the basis of objective information, that even where there are different ways of implementing a plan, and even applying the precautionary principle, no element of the plan can argue that it draws support from the plan, if it could adversely affect the integrity of a European site.

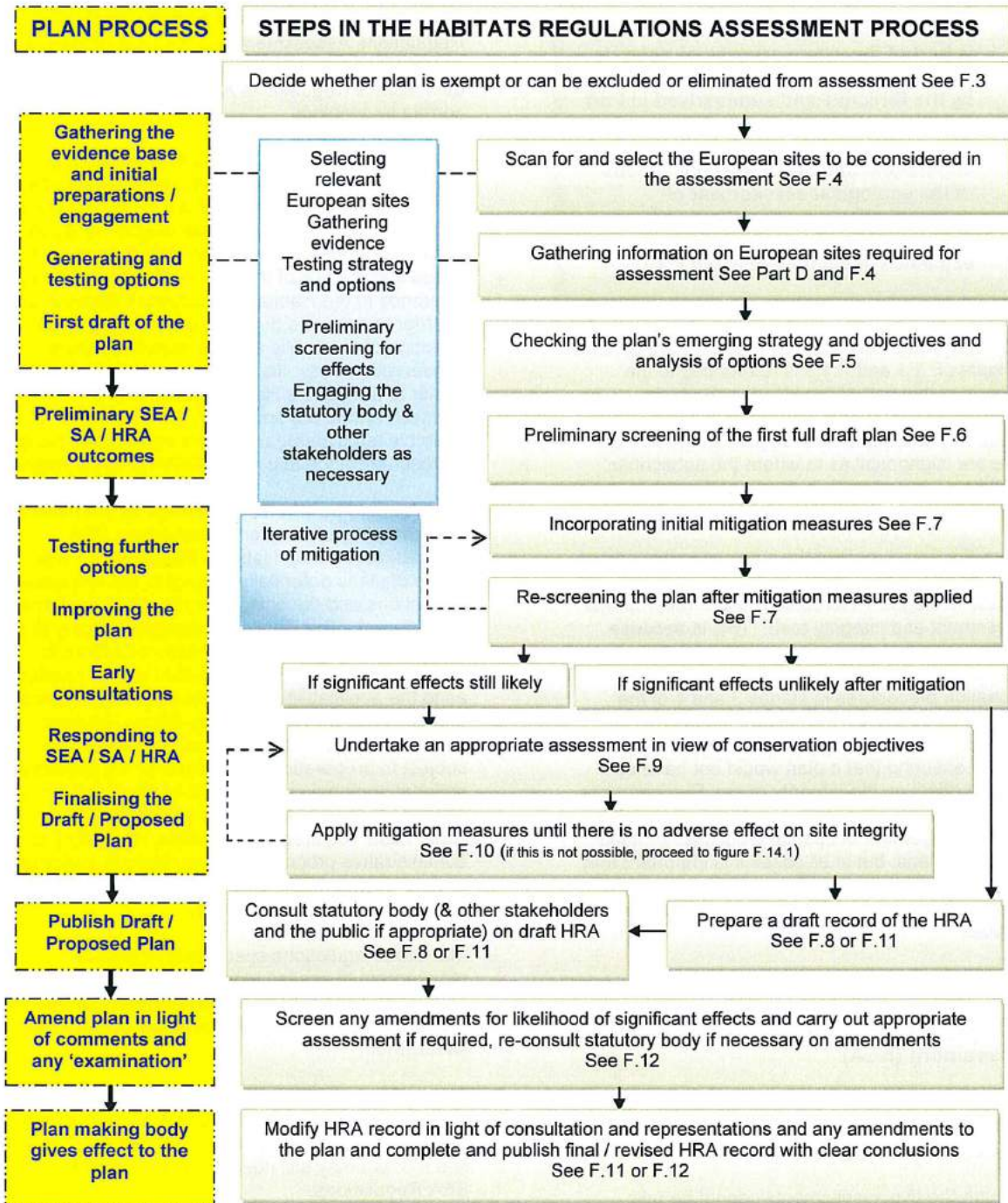
## 2.3 Likely significant effect

2.3.1 The 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.

2.3.2 *“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’.”<sup>5</sup>*

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<sup>5</sup>Tyldesley, D. (2013) The Habitats Regulations Assessment Handbook – Chapter F. DTA Publications



**Figure 2.1:** Relationship of steps in the Habitats Regulations Assessment with a typical plan-making process (reproduced from DTA, 2013<sup>6</sup>)

## 2.4 Limitations

2.4.1 This report has been prepared using the best available data. References are cited in the text where appropriate. Lepus Consulting has collected no primary data in the preparation of this report.

<sup>6</sup> Tyldesley, D. (2013) The Habitats Regulations Assessment Handbook – Chapter F. DTA Publications

2.4.2 The Plan Review is still ongoing. In order to prepare this HRA, Lepus has been supplied with the following documents:

- Plan Review, Preferred Approach - Strategy (July, 2016);
- Plan Review, Preferred Approach - Sites & Settlements (November, 2016);
- Plan Review, Preferred Approach - Retail & Town Centres (December, 2016);
- Thoresby Colliery Redevelopment Master Plan (September, 2016);
- Natural England comments on the Newark and Sherwood LDF Review Preferred Approach (September, 2016);
- RSPB comments on NSDC plan review preferred approach (September, 2016); and
- Plan to accompany RSPB response to NSDC LPR (September, 2016).

## 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). For example, sites can be affected by land use plans in a number of different ways, including the direct land take of new development, the type of use the land will be put to (for example, an extractive or noise-emitting use), the pollution a development generates and the resources used (during construction and operation for instance).

3.1.2 An intrinsic quality of any European site is its functionality at the landscape ecology scale. This refers to how the site interacts with the zone of influence of its immediate surroundings, as well as the wider area. This is particularly the case where there is potential for developments resulting from the plan to generate water or air-borne pollutants, use water resources or otherwise affect water levels. Adverse effects may also occur via impacts to mobile species occurring outside of a designated site but which are qualifying features of the site. For example, there may be effects on protected birds that use land outside the designated site for foraging, feeding, roosting or other activities.

### 3.2 Identification of relevant European sites

3.2.1 The guidance<sup>7</sup> specifies no specific size of search area. During the screening process, as a starting point to explore and identify which European sites might be affected by the Local Plan Review, a 15km area of search was applied from the boundary of the Newark and Sherwood district. A total of two European sites were identified.

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

3.2.2 The boundary of Sherwood Forest ppSPA is yet to be formally decided on. The boundary used in this assessment is that which was proposed in the letter of advice from Natural England, updated in 2014, and can be seen in **Figure F.1** in **Appendix F**<sup>8</sup>. The boundaries they suggest were accepted as evidence by the inspector of the Rufford Energy Recovery Facility (ERF) Public Inquiry in 2011 as they highlight the areas of greatest ornithological concern. The likely effect of the ERF on breeding populations of woodlark and nightjar within these boundaries was a key consideration in the secretary of state's decision to refuse to grant planning permission.

### 3.3 Ecological information

3.3.1 **Table A.1** identifies the qualifying features of each site and presents details of conservation objectives for each of the sites identified as potentially being affected by the Plan. This information is drawn from the Joint Nature Conservancy Council (JNCC) and Natural England (NE).

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<sup>8</sup> Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region

## 4 Potential Effects

### 4.1 Introduction

4.1.1 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.

4.1.2 Sites of Special Scientific Interest (SSSI) are protected areas in the United Kingdom designated for conservation. SSSI units located either entirely or partially within the European sites considered in this report are listed in **Table 4.1** along with their current conservation status. The conservation status of each SSSI unit will be one of the following:

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

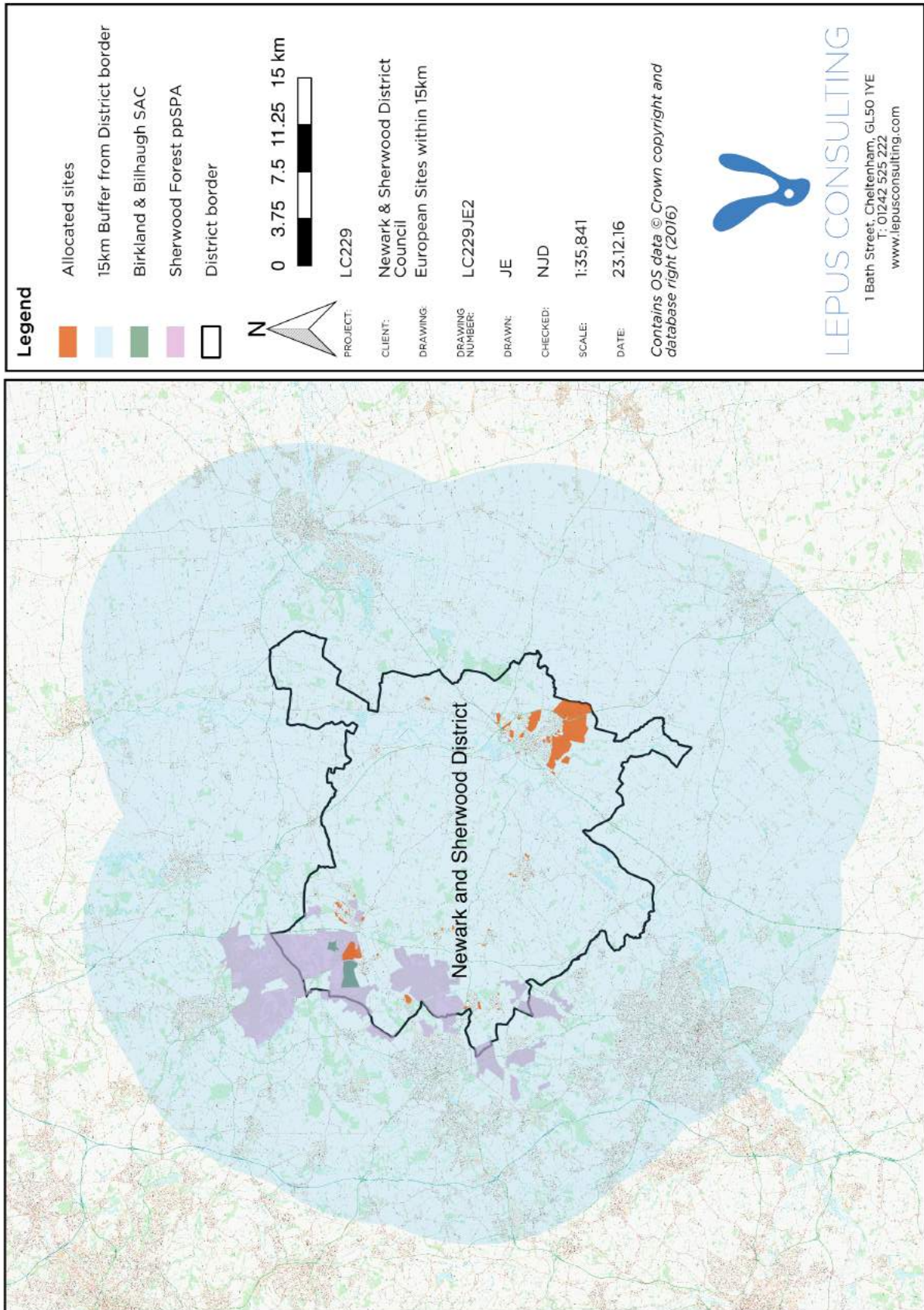
4.1.3 SSSI units in an either ‘Unfavourable – no change’ or ‘Unfavourable – declining’ condition indicate the European site may be particularly vulnerable to certain threats or pressures.

4.1.4 For example, Birklands and Bilhaugh SSSI – Visitor centre & facilities (O12) is in an ‘Unfavourable – no change’ state of conservation. 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.

**Table 4.1:** European sites within 15km of the Newark and Sherwood district border and the conservation statuses of corresponding SSSI units.

European Site	Quantity of SSSI units	Conservation status
Birklands and Bilhaugh SAC	4	3/4 Unfavourable - recovering 1/4 Unfavourable - no change
Sherwood Forest ppSPA	52	13/60 Favourable 43/60 Unfavourable - recovering 2/60 Unfavourable - no change 2/60 Unfavourable - declining





**Figure 4.1:** Map illustrating Newark and Sherwood and all European sites within a 15km range and sites allocated for development in the LPR.

## 4.2 Conservation objectives

4.2.1 The Waddenzee case<sup>9</sup> demonstrates that the effect of a Plan or Project on a European site cannot be considered to be significant if it *'is not likely to undermine its conservation objectives'*. The conservation objectives and qualifying features of each European site are presented in **Table A.1**. To help determine whether these conservation objectives will be undermined, this report considers whether any existing pressures on, or threats to, the site will be exacerbated.

## 4.3 Site pressures and threats

4.3.1 Site pressures and threats have been derived from data held by the JNCC on Natura 2000 Data Forms and Ramsar Information Sheets. These forms detail threats and pressures that would have a negative impact on the European sites. Site Improvement Plans (SIPs) have been developed for each European site as part of the Improvement Programme for England's Natura 2000 sites. These set out an overview of current and predicted issues at the site. Information regarding pressures and threats from Natura 2000 Data Forms and SIPs are summarised in **Table B.1**. **Table 4.2** shows the filtered down list of issues that are discussed further in the following sections.

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<sup>9</sup> European Commission Case C-127/02 Reference for a Preliminary Ruling 'Waddenzee' 07/9/2004 (para 45)

**Table 4.2:** Pressures and threats for European sites that may be affected by the LPR are highlighted in yellow. Individual qualifying features under threat were not identified on Natura 2000 data forms. Scoped out pressures and threats (**Section 4.4**) have been removed. SIP indicates data sourced from Site Improvement Plan, N2K indicates data also sourced from the JNCC Natura 2000 data forms.

Threats/ Pressures	Birklands & Bilhaugh SAC	Sherwood Forest ppSPA
Air pollution	H9190 Dry oak-dominated woodland	n/a
Disease	H9190 Dry oak-dominated woodland	n/a
Human induced hydraulic changes	All qualifying features (N2K)	n/a
Loss or fragmentation of habitat	n/a	Breeding populations of nightjar and woodlark
Public access/ disturbance	H9190 Dry oak-dominated woodland	Breeding populations of nightjar and woodlark

## 4.4 Scoping out pressures and threats

4.4.1 Both sites in this assessment was identified as being under various threats and pressures. The following threats and pressures were identified for the sites in this assessment but have been scoped out of further discussion because they are beyond the influence of the Plan:

- Change in land management;
- Invasive species;
- Modification of cultivation practices;
- Physical modification; and
- Planning permission: general.

4.4.2 **Table 4.2** displays the full list of European sites relevant to this assessment and the threats/pressures they are under that may be affected by the LPR (and were not screened out of assessment).

4.4.3 The vulnerability of each of the European sites to each of the threats and pressures listed in **Table 4.2** will now be examined in further detail. The impact the LPR will have on the vulnerability of each site will then be assessed.

## 4.5 Air pollution

4.5.1 Atmospheric nitrogen deposition has been identified as a pressure for the dry-oak dominated woodland habitat of Birklands and Bilhaugh SAC. Dry-oak dominated woodland is particularly sensitive to atmospheric nitrogen deposition.

4.5.2 The primary source of nitrogen deposition in residential developments is 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 Local Plan Review. The Design Manual for Roads and Bridges suggests that air quality impacts from vehicles are most likely to occur within 200m of a road<sup>10</sup>.

4.5.3 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*”<sup>11</sup>.

### Vulnerability of Birklands and Bilhaugh SAC to air pollution

4.5.4 Excess nitrogen has severe consequences for the naturally low nutrient status ecosystem of Birklands and Bilhaugh SAC. Locally, an increase in bracken cover and vigorous grasses, at the expense of slower growing species of impoverished soils, has been observed<sup>12</sup>. Appropriate woodland management that maintains the extent and characteristics of the habitat is a key environmental condition for the SAC.

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<sup>10</sup> 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

<sup>11</sup> 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

<sup>12</sup> Natural England (2015) Site Improvement Plan Birklands & Bilhaugh SAC

- 4.5.5 Four SSSI units overlap the site, three of which are in an 'Unfavourable - recovering' condition and one is in an 'Unfavourable - no change' condition. Unfavourability at the site is related to vegetation dynamics with variations in age, size and class of trees being highly limited. Appropriate management measures have been adopted to tackle this. The SSSI unit of an 'Unfavourable - no change' state is the location of the visitor centre and car park and is related to public access issues.
- 4.5.6 The dry-oak dominated woodland on sandy soils habitat of Birkland and Bilhaugh SAC has a nitrogen deposition critical load of 10 - 15kg N/ha/year. It is currently exposed to an average of 28.4kg N/ha/year<sup>13</sup>.
- 4.5.7 Birklands and Bilhaugh SAC is comprised of two parcels, one on each side of the A616 major road. At no point is the SAC within 200m of this road. No roads run through the middle of either parcel of the SAC. The B6034 runs parallel to and borders the eastern edge of the southern parcel of the SAC.
- 4.5.8 Non-agricultural sources are thought to be responsible for approximately 38% of local nitrogen deposition<sup>14</sup>. Whitwell lime production plant, less than 10km from the SAC, likely contributes a significant proportion of this. Road transport is estimated to contribute 17% of local nitrogen deposition whilst agricultural sources are estimate to contribute 34%<sup>15</sup>.

#### **Effects of the LPR on air pollution at Birkland and Bilhaugh SAC**

- 4.5.9 If the LPR increases traffic on the B6034, the only road within 200m of Birkland and Bilhaugh SAC, atmospheric nitrogen deposition at the site may be increased. Redevelopments in nearby Edwinstowe, and in particular the proposals for Thoresby Colliery, would see an extra 800 dwellings and associated infrastructure, new primary school and public open space in the immediate vicinity of the B6034 and A6075 junction.

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<sup>13</sup> Air Pollution Information System APIS (2016) Site relevant critical loads and source attribution. Available online at: <http://www.apis.ac.uk/srcl>

<sup>14</sup> Natural England (2015) Improvement Programme for England's Natura 2000 Sites (IPENS) - Planning for the Future IPENS049. Case Study C: Atmospheric nitrogen profile for Birklands and Bilhaugh SAC. October 2015

<sup>15</sup> Ibid

- 4.5.10 However, the B6034 is not considered to be a major route of commute. Residents would instead likely use the A6075 to access the nearby A614 to the east or the A60 to the west. Whilst it is difficult to argue there will be no increase in traffic on the B6034 because of the Local Plan Review, a significant increase is considered unlikely.
- 4.5.11 Sherwood Forest visitor centre is currently located in the south-eastern corner of the SAC. Plans are in place to relocate the visitor centre and car parks to Forest Corner in Edwinstowe, a location approximately 180m south of the south-eastern corner of the SAC. The relocation is scheduled for completion in early 2018<sup>16</sup>. Once completed, it is likely that the level of atmospheric nitrogen deposition from road traffic at the site will decrease.
- 4.5.12 Increases in atmospheric nitrogen deposition caused by the LPR are expected to be negligible in relation to current levels and a significant effect of this alone is not considered likely. However, deposition levels at Birkland and Bilhaugh SAC are currently greater than the site's critical loads. The site may therefore be currently suffering the consequences of low air quality and any increase in nitrogen deposition may exacerbate this issue. It would be helpful to obtain Natural England's views on this issue, and the matter should be raised specifically with them.

#### **Air Quality Management Areas (AQMAs)**

- 4.5.13 Since December 1997 local authorities in the UK have been designating AQMAs in areas where national air quality objectives are thought unlikely to be achieved. Each local authority developed a Local Air Quality Action Plan to tackle air pollution in these areas. However, there are no AQMAs in the Newark and Sherwood district.

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<sup>16</sup> Nottinghamshire County Council (2016) Sherwood Forest visitor centre development. Available online at: <http://www.nottinghamshire.gov.uk/planning-and-environment/country-parks/sherwood-forest/visitor-centre-development>

## 4.6 Disease

- 4.6.1 The spread of diseases has been identified as a threat for the dry-oak dominated woodland of Birkland and Bilhaugh SAC. Pathogens are spread across the country by the movement of timber and there is therefore a high risk of disease reaching this SAC. Disease can also be spread by visitors to the SAC.

### **Vulnerability of Birkland and Bilhaugh SAC to disease**

- 4.6.2 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 years<sup>17</sup>. 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 tree<sup>18</sup>.

### **Effects of the plan on disease at Birkland and Bilhaugh SAC**

- 4.6.3 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.
- 4.6.4 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 trees<sup>19</sup>. It is therefore considered unlikely that developments in the LPR would cause an increase in acute oak decline occurrence at the SAC.

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<sup>17</sup> Royal Horticultural Society (2016) Oak Decline. Available online at: <https://www.rhs.org.uk/advice/profile?PID=688>

<sup>18</sup> Ibid

<sup>19</sup> The National Forest (2011) Pests & diseases information sheet: Acute Oak Decline

## 4.7 Human induced hydraulic changes

- 4.7.1 Human induced hydraulic changes have been identified as a threat to the dry oak-dominated woodland habitat of Birklands and Bilhaugh SAC on its Natura 2000 standard data form. Whilst there is little to no surface water in the SAC, and the ecosystem is not specifically reliant on water, it sits above the Sherwood Sandstone Aquifer. Over-abstraction of this aquifer may lower the local groundwater level to an extent that is detrimental to veteran tree health.
- 4.7.2 In Nottinghamshire, 80% of the public water supply is extracted from the Sherwood Sandstone Aquifer<sup>20</sup>, the second most important aquifer in the UK<sup>21</sup>. New developments may cause an increase in water demand that leads to over abstraction. It is therefore important to assess the impacts of developments in the LPR on abstraction from this aquifer.
- 4.7.3 A third of drinking water in England and Wales is sourced from groundwater. A Water Resource Zone (WRZ) is defined as being the largest possible zone in which all water resources can be shared and thus all customers experience the same risk of supply failure<sup>22</sup>. The East Midlands WRZ, within which the Sherwood Sandstone Aquifer sits, supplies water to over three million people across Derbyshire, Nottinghamshire and Leicestershire<sup>23</sup>.
- 4.7.4 The East Midlands WRZ is managed by Severn Trent Water who publish Water Resource Management Plans to investigate the impact of water supply and demand on the natural environment. The East Midlands WRZ is supported by reservoirs, rivers and a variety of groundwater sources and exported to the Severn WRZ<sup>24</sup>. Whilst there remains a capacity for greater water demand in the East Midlands WRZ in the short term, an implication of climate change is that there will be less capacity for extra demand in the future<sup>25</sup>.

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<sup>20</sup> Mansfield District Council (2009) Water Cycle Strategy – Scoping Study, Final Report, June 2009

<sup>21</sup> British Geological Survey (2007) Understanding aquifers in 3D, Earthwise 25, NERC 2007

<sup>22</sup> Severn Trent Water (2014) Water Resources Management Plan, Final Version, June 2014

<sup>23</sup> M. Hudson (2002) Groundwater sustainability and water resources planning for the East Midlands Resource Zone

<sup>24</sup> Ibid

<sup>25</sup> Ibid



- 4.7.5 On a European level, the Water Framework Directive commits EU member states to achieving a good quantitative and qualitative status for all water bodies<sup>26</sup>. This status is determined by the chemical quality of the water and abstraction pressures.
- 4.7.6 In the UK, the EA has designated Groundwater Source Protection Zones (SPZs) for two thousand groundwater supply sources<sup>27</sup>. All groundwater in each SPZ is used for public water supply and thus it is important to protect the resource from contamination and over abstraction. Birkland and Bilhaugh SAC is in a Zone III (Total Catchment) SPZ, wherein all groundwater is presumed to end up at the abstraction point.
- 4.7.7 The Environment Agency (EA) also publishes Catchment Abstraction Management Strategies (CAMS) to try and improve the status of water bodies as determined by the Water Framework Directive. The CAMS process considers the impacts of abstraction at all flows<sup>28</sup>. They recognise the Sherwood Sandstone Aquifer as being a principal aquifer of strategic importance but one that has endured a history of over abstraction and its current classification is 'over-abstracted'<sup>29</sup>. The EA hopes to restore sustainable management of the aquifer and have divided it in to ten groundwater management units. Water abstraction licenses are available at four of them if applicants confirm there will be no impact on other abstractors and the aquatic environment. Water abstraction licenses are not available at the other six units<sup>30</sup>.
- 4.7.8 As per the 2011 census, England has an average of 2.4 people per household<sup>31</sup>. The LPR proposes at least 6,004 new dwellings in the district and thus approximately 14,500 new residents relying on the Sherwood Sandstone Aquifer can be expected.

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<sup>26</sup> European Union (2000) Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, Official Journal L 327, 22/12/2000 P. 0001 - 0073

<sup>27</sup> Environment Agency (2015) Groundwater source protection zones. Available at: <http://apps.environment-agency.gov.uk/wiyby/37833.aspx>

<sup>28</sup> Environment Agency (2013) Groundwater protection: Principles and practice (GP3) August 2013 Version 1.1

<sup>29</sup> Environment Agency (2013) Staffordshire Trent Valley abstraction licensing strategy, February 2013, A licensing strategy to manage water resources sustainably

<sup>30</sup> Ibid

<sup>31</sup> Office for National Statistics ONS (2011) 2011 Census: Population and household estimates for the United Kingdom, March 2011

4.7.9 Core Policy 9 on Sustainable Design of the Core Strategy states that all new developments should, where feasible, use Sustainable Drainage Systems (SuDS). SuDS would, to some extent, help encourage natural groundwater and aquifer recharge.

4.7.10 Overall, there remains capacity in the East Midlands WRZ for greater water demand in the short term. The 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. A likely significant effect on the qualifying features of the SAC because of the LPR can therefore be objectively ruled out based on the information currently available.

## **4.8 Loss and/ or fragmentation of habitats**

4.8.1 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 there is a potential for further fragmentation.

4.8.2 The feeding and breeding habitats of nightjar and woodlark populations of Sherwood Forest ppSPA extend in to the Mansfield Fringe, Southwell and Sherwood areas. Various employment and residential developments are proposed for these areas that may overlap, and therefore fragment or damage, the breeding and feeding habitats of woodlark and nightjar.

4.8.3 Settlements in the Mansfield Fringe area are closely related to the town of Mansfield which lies just to the west. Employment developments are proposed for Land West of Colliery Lane, Land at former Clipstone Colliery and Land on Blidworth Employment Park. Residential developments are proposed in Rainworth, Clipstone and Blidworth. None of these developments overlap the Important Bird Areas at Sherwood Forest ppSPA.

- 4.8.4 In the Southwell Area, employment land developments are proposed for Land East of Crew Lane and Land to the south of Crew Lane. Residential developments are also proposed for six different locations throughout Southwell. None of these developments overlap with the IBAs of Sherwood Forest ppSPA.
- 4.8.5 Employment land developments have been proposed in the Sherwood Area for South of Ollerton & Boughton Industrial Estate, Land South of Brailwood Road and Land North of Brailwood Road. None of these developments would fragment Sherwood Forest ppSPA. Residential developments are also proposed for Ollerton & Boughton, Edwinstowe and Bilsthorpe. None of these proposals overlap the IBAs.
- 4.8.6 The redevelopments proposed for Thoresby Colliery will not overlap with the habitats of Sherwood Forest ppSPA. Restoration of the heathland, as proposed in ShAP 4, is considered likely to have a positive impact in reconnecting some areas of the local habitat.
- 4.8.7 No developments proposed in the LPR are thought to overlap with the breeding and feeding habitats of woodlark and nightjar in Sherwood Forest ppSPA. A likely significant effect on the site due to fragmentation and loss of habitat can therefore be objectively ruled out based on the information currently available.

## **4.9 Public access and disturbance**

- 4.9.1 Public access and associated disturbances have been identified as a threat for the dry-oak dominated habitats of Birklands and Bilhaugh SAC and the breeding populations of nightjar and woodlark in Sherwood Forest ppSPA.

### **Vulnerability of Birklands and Bilhaugh SAC to public access and associated disturbances**

- 4.9.2 A key environmental condition to safeguard the integrity of Birklands and Bilhaugh SAC is appropriate woodland management that maintains the extent and characteristics of the habitat.

- 4.9.3 The visitor centre and car park for Sherwood Forest is located inside the SAC. Intensive activities near the centre, in the form of car parking and pedestrian movement, has implications for the local ecosystem. They include soil and root zones around veteran trees being compacted, which is detrimental to tree health. Mycorrhiza fungi associations, essential to tree growth, are disturbed whilst local hydrological cycles can also be disrupted.
- 4.9.4 Birklands and Bilhaugh SSSI is predominantly in an 'Unfavourable - recovering' state of conservation. However, SSSI unit twelve is currently in a state of 'Unfavourable - no change'. This is because the unit is host to the SAC's visitor centre and car park. The SAC's SIP identifies demolishing the visitor centre, relocating it outside of the SAC and restoring the area to wood pasture as key to achieving a favourable conservation status. Nottinghamshire County Council currently has plans in place to relocate the Sherwood Forest Visitor Centre to Forest Corner in Edwinstowe, outside of the SAC. Completion is scheduled for early 2018<sup>32</sup>.
- 4.9.5 Throughout the SAC is a network of public footpaths, most of which are near the visitor centre, car park and Major Oak (a popular attraction of the site). Measures such as signs and fencing are used to keep visitors on designated paths and thus far the paths are considered to have coped well with high levels of visitors. Areas where the paths were poorly constructed, or on a slope, have experienced erosion, rutting and pooling. Visitors generally avoid these areas, thereby widening paths and the area of compacted soil.

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<sup>32</sup> Nottinghamshire County Council (2016) Sherwood Forest visitor centre development. Available online at: <http://www.nottinghamshire.gov.uk/planning-and-environment/country-parks/sherwood-forest/visitor-centre-development>

4.9.6 Birkland and Bilhaugh SAC is within the Sherwood Forest Country Park which receives 350,000 visitors a year<sup>33</sup>. Visitor numbers have been known to surge following film or television coverage of the legend of Robin Hood and each year the site is host to a week-long Robin Hood Festival. The distance people will travel for recreational purposes is key to understanding how many new visitors the SAC can expect because of the Local Plan Review. Approximately 48% of visitors to Sherwood Forest Country Park are Nottinghamshire residents<sup>34</sup>, which suggests people are willing to travel up to 20km to regularly visit the site.

#### **Effects of the Plan on public access related disturbances at Birkland and Bilhaugh SAC**

4.9.7 Developments proposed in the LPR would result in approximately 14,500 new residents within 20km of the SAC, with convenient access via the A6075, A616 and B6034 roads. The number of frequent visitors to the SAC can be expected to increase because of developments proposed in the Local Plan Review.

4.9.8 With regards to accessing the site, the proposed redevelopment of Thoresby Colliery is of concern. The LPR would see an additional 800 dwellings, and approximately 1,920 new residents, less than 1km to the east of the SAC. There would also be leisure facilities (including a large zip wire tourist attraction), a new primary school, 10ha of employment land and associated green and transport infrastructure.

4.9.9 Plans for Thoresby Colliery take in to consideration the effects of the redevelopment on the integrity of Birkland and Bilhaugh SAC. Proposed policy ShAP 4 includes the provision of SANGS as a part of the provision of green infrastructure. In this context, SANGS would be freely accessible to people living within 5km of the SAC for regular uses such as dog walking. The SANGS would also provide natural green space, be accessible by both car and foot and enhance biodiversity. The provision of SANGS would be in addition to the spoil heaps of the old colliery that will be restored to heathland.

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<sup>33</sup> Nottinghamshire County Council (2013) 2013 Visitor satisfaction surveys in country parks. Report of the service director, youth, families and culture.

<sup>34</sup> Ibid

4.9.10 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. Developments in the LPR include the provision of 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 Local Plan Review.

#### **Vulnerability of Sherwood Forest ppSPA to public access and associated disturbances**

4.9.11 Sherwood Forest ppSPA is home to breeding populations of nightjar and woodlark, two ground nesting bird species. Nightjar (*Caprimulgus europaeus*) can be found in the heathlands, moorlands and open woodland clearings of the site between late April and September. Woodlark (*Lullula arborea*) prefer the open and short vegetation of lowland heath.

4.9.12 Public access associated disturbances can impact on the populations and habitats of birds in a variety of ways. Research has suggested that birds are more able to habituate to frequent and benign events, such as being interrupted by hikers, than major events such as disturbances by aeroplanes<sup>35</sup>. Birds that make use of Sherwood Forest ppSPA are within a relatively urban area with nearby settlements and many visitors. It is considered likely that birds at the site are habituated to a high level of background disturbance and the presence of humans.

4.9.13 Impacts associated with recreational disturbances vary between locations, seasons, species and individuals. Impacts may be direct, such as birds being forced to flee from approaching dogs, or indirect, such as the destruction of habitats by explorative visitors. Disturbances may lead to behavioural changes, such as changes to nesting behaviour, and physiological changes, such as quicker heartbeat rates.

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<sup>35</sup> Hill, D., Hockin, D., Price, D., Tucker, G., Morris, R., & Treweek, J. (1997). Bird disturbance: improving the quality and utility of disturbance research. *Journal of Applied Ecology*, 275-28

4.9.14 The adverse effects of unnecessary expenditure of energy by birds flying away from oncoming threats, coupled with the reduction in their intake of energy because of less time spent foraging, can be significant for the balance between birth/ immigration and death/ emigration. A long-term study in the Sherwood Forest area concluded that nightjar density and the number of breeding pairs was significantly lower in heavily disturbed habitats than in less disturbed habitats<sup>36</sup>.

4.9.15 Whilst humans walking alone in IBAs causes disturbance to birds, the effects of disturbances from dogs on birds cannot be underestimated. Dogs cause birds to take flight, often resulting in abandoned nest attempts. Research in New South Wales, Australia (despite the study being conducted in Australia, the results are considered applicable to the context of Sherwood Forest ppSPA) found dog walking was causing bird numbers to drop by an average of 41% across 90 sites<sup>37</sup>. The number of bird species fell by an average of 35%. This was despite dogs being kept on leads. During the public's day to day use of Sherwood Forest ppSPA, dogs will regularly be let off their leads and the level of disturbance they cause may therefore be greater.

#### **Effects of the Plan on public access related disturbances at Sherwood Forest ppSPA**

4.9.16 The nightjar is loyal to nesting areas and will return year on year. The mean distance they travel from the nest to forage is 3.1km, with most travelling between 2km and 4km<sup>38</sup>. A woodlark's range of colonisation is between 5km and 8km<sup>39</sup>.

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<sup>36</sup> Mansfield District Council (2016) Local Plan Consultation Draft Habitat Regulations Assessment – likely significant effects screening report. February 2016

<sup>37</sup> University of New South Wales (2007) "A Dog in The Hand Scares Birds In The Bush." ScienceDaily. ScienceDaily, 12 September 2007

<sup>38</sup> 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

<sup>39</sup> RSBP (2004) How can I encourage woodlarks? Available online at:

<http://www.rspb.org.uk/ourwork/conservation/advice/woodlarks/encourage.aspx>

4.9.17 During the 2011 Rufford ERF Public Inquiry<sup>40</sup> the map submitted by the Nottinghamshire Wildlife Trust highlighted IBAs of the Sherwood Forest ppSPA using data from the RSPB. They included a 5km buffer around the IBAs with the understanding that all developments within this zone could indirectly or directly affect habitats and/ or populations of the birds. This map can be seen in **Figure F.1, Appendix F**.

4.9.18 The 1,859 dwellings and 33.67ha of employment land proposed in the LPR within this 5km buffer zone could potentially have an either indirect or direct impact on the habitats and/ or populations of nightjar and woodlark. The full list of these proposed policies can be seen in **Table 4.4**. Assuming an average of 2.4 people per household<sup>41</sup>, approximately 4,460 new residents can be expected within 5km of an IBA in Sherwood Forest ppSPA.

**Table 4.4:** Developments proposed in the LPR that would be within 5km of an IBA in Sherwood Forest ppSPA.

Location	Housing policy numbers	Employment policy numbers	Proposed development
Sherwood Area	n/a	OB/E/3 and Bi/E/1	16.17ha
Ollerton & Boughton	OB/Ho/2, OB/MU/1 and OB/MU/2	n/a	370 dwellings
Edwinstowe	ShAP 4	n/a	800 dwellings
Bilsthorpe	Bi/Ho/2 and Bi/MU/1	n/a	210 dwellings
Mansfield Fringe	n/a	Ra/E/1, CI/MU/1 and BI/E/1	17.5ha
Rainworth	Ra/Ho/1 and Ra/Ho/2	n/a	154 dwellings
Clipstone	CI/MU/1	n/a	120 dwellings
Blidworth	BI/Ho/1 Land and BI/Ho/3	n/a	155 dwellings

<sup>40</sup> Secretary of State's Decision (26 May 2011) and Inspector's Report (17 March 2011) in relation to the Rufford ERF inquiry

<sup>41</sup> Office for National Statistics ONS (2011) 2011 Census: Population and household estimates for the United Kingdom, March 2011



- 4.9.19 There are numerous IBAs of Sherwood Forest ppSPA, spanning a range of approximately 30km from the immediate south of Mansfield to the southern edge of Worksop. Each IBA is a parcel of woodland in a predominantly countryside area. New residents will therefore have extensive choice when seeking natural greenspaces.
- 4.9.20 Visitor survey data is currently lacking for Sherwood Forest ppSPA. To allow for more accurate estimates on the effects of visitor pressure, it is recommended that visitor surveys be conducted. This would provide useful data such as on the purposes of people's visits, the distances travelled to get there, the modes of transport used and the frequency and duration of visits.
- 4.9.21 The habitat of Cannock Chase SAC is home to areas of heathland and woodland as well as populations of nightjar and woodlark. It therefore represents a similar recreational draw for the public as Sherwood Forest ppSPA. In 2012, a survey of 4,809 visitors at Cannock Chase SAC found that 50% of visitors lived within 6.24km of the site and 75% of them lived within 15.3km<sup>42</sup>.
- 4.9.22 Developments proposed in the Newark Area would be approximately 20km from IBAs of Sherwood Forest ppSPA. It is therefore considered unlikely that residents and dog walkers from this area will regularly visit the ppSPA.
- 4.9.23 Developments proposed in the Southwell Area will be approximately 9km from IBAs of Sherwood Forest. Those in the Sherwood Area and Mansfield Fringe will be less than 5km from IBAs. There is currently not enough data available on visitors at Sherwood Forest ppSPA to make accurate estimates of how many extra visitors and dog walkers the site can expect because of these developments.

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<sup>42</sup> Liley, D. (2012). Cannock Chase SAC Visitor Survey. Unpublished report, Footprint Ecology.

- 4.9.24 The IBAs of Sherwood Forest represent the nearest parcels of woodland to residents in the Southwell Area, Sherwood Area and Mansfield Fringe where a combined total of 2,079 dwellings are proposed. It is considered likely that residents in these areas would utilise the ppSPA for recreational purposes. Residents of the Sherwood Area and Mansfield Fringe (where a combined total of 1,859 dwellings are proposed) would be likely to use the ppSPA for frequent recreational purposes.
- 4.9.25 Assuming the UK average of 24% households being home to at least one dog<sup>43</sup>, there will be approximately 520+ dwellings hosting a dog within 5km of an IBA of Sherwood Forest ppSPA because of the Plan. Approximately 45% of visitors at Cannock Chase SAC are there for dog walking<sup>44</sup>. At Burnham Beeches SAC, a woodland just north of London, approximately 56% of visitors go for dog walking<sup>45</sup>. It is considered likely that the Plan will result in a significant increase in the number of dog walkers at Sherwood Forest ppSPA.
- 4.9.26 Core Policy 12 of the Core Strategy is reflected in the Thoresby Colliery redevelopment. Proposals include the provision of SANGS, which would provide an alternative location to Sherwood Forest ppSPA for dog walking. However, these are only to be freely accessible for people living within 5km of Birkland and Bilhaugh SAC and would not be an accessible alternative for most new residents of the district.
- 4.9.27 A likely significant effect on the breeding nightjar and woodlark populations of the site, because of disturbance from dogs caused by the Plan, cannot be objectively ruled out based on the information currently available.

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<sup>43</sup> Pet Food Manufacturer's Association (2016) Pet Population 2016. Available online at: <http://www.pfma.org.uk/pet-population-2016>

<sup>44</sup> Liley, D. (2012). Cannock Chase SAC Visitor Survey. Unpublished report, Footprint Ecology.

<sup>45</sup> Liley, D., Floyd, L. and Fearnley, H. (2014). Burnham Beeches Visitor Survey. Footprint Ecology. Unpublished report for Corporation of London.

## Predation by cats

- 4.9.28 The woodlark and nightjar populations of Sherwood Forest ppSPA are recognised as being under threat from predation, such as by foxes, stoats, crows and magpies. Relevant to this assessment is the impact of predation by pet cats. Approximately one quarter of households in the UK own at least one cat, for which the roaming distance can vary from 400m to over 1,500m<sup>46</sup>. Rural and suburban households generally have more cats than urban households<sup>47</sup>. At least 60% of cats are thought to roam up to 400m, and hence Thames Basin Heaths SPA prohibits buildings within 400m of its boundary to protect its qualifying bird populations<sup>48</sup>.
- 4.9.29 A small reduction in fecundity due to cat predation can potentially lead to significant reductions in bird abundance<sup>49</sup>. The quantity of victims of prey from cats varies between individual cats and contexts whilst younger cats are known to hunt more than older cats<sup>50</sup>. Studies have recorded 14<sup>51</sup>, 16.6<sup>52</sup>, 33<sup>53</sup> and 10.2<sup>54</sup> victims of prey, per cat, per year.

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<sup>46</sup> Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography*, **20**, 271-280.

<sup>47</sup> Lepczyk, C. A., Mertig, A. G. and Liu, J. (2003) Landowners and cat predation across rural-to-urban landscapes. *Biological Conservation*, 115, 191-201

<sup>48</sup> Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography*, **20**, 271-280.

<sup>49</sup> 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

<sup>50</sup> Howes, C. (1982) What's the cat brought in? *Bird Life*, 1982 (January-February), 26.

<sup>51</sup> Churcher, P.B. & Lawton, J.H. (1987) Predation by domestic cats in an English village. *Journal of Zoology*, London, 212, 439-455.

<sup>52</sup> Woods, M., McDonald, A. R., and Harris, S. (2003) Domestic Cat Predation on Wildlife. *The Mammal Society*.

<sup>53</sup> Howes, C. (1982) What's the cat brought in? *Bird Life*, 1982 (January-February), 26.

<sup>54</sup> 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.

### Effects of the LPR on predation by cats

- 4.9.30 The impact of cat predation on ground nesting birds is recognised by Natural England as an inherent threat in residential development. A study in Michigan, USA on the impacts of domestic cats on breeding bird species found that pet cats depredated known bird populations by a minimum of 12.5%<sup>55</sup>.
- 4.9.31 Being ground nesting birds, the nightjar and woodlark are particularly vulnerable to predators. 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 days<sup>56</sup>. The birds are therefore particularly vulnerable during the spring and early summer months when cats may be more likely to be outside for longer.
- 4.9.32 Developments in proposed policies ShAP 4, including those at Thoresby Colliery, and OB/MU/1 are within 400m of an IBA of Sherwood Forest ppSPA. Development proposed in OB/MU/1 would be on Petersmith Drive. For the cats to reach the nearest IBA from this location they would need to cross a river which has one crossing point approximately 1km to the south. Pet cats at this location are therefore considered unlikely to have an effect on IBAs of Sherwood Forest ppSPA. A total of 800 dwellings are proposed in ShAP 4. Assuming a quarter of new dwellings host a cat<sup>57</sup>, this would see approximately 200 cats within 400 metres of an IBA in Sherwood Forest ppSPA. Approximately 60% of these cats' range would encompass IBAs<sup>58</sup>. Green infrastructure proposed for the Thoresby Colliery redevelopment includes a water body encircling some of the residential development. The water body has multiple crossing points and most residential development will not be encircled by the water. It is therefore considered that this would restrict pet cat movement to a limited extent.

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<sup>55</sup> Lepczyk, C. A., Mertig, A. G. and Liu, J. (2003) Landowners and cat predation across rural-to-urban landscapes. *Biological Conservation*, 115, 191-201

<sup>56</sup> 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

<sup>57</sup> Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography*, **20**, 271-280

<sup>58</sup> Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats *Felis catus*. *Ecography*, **20**, 271-280.

- 4.9.33 The Thoresby Colliery redevelopment includes proposals for restored heathland to provide a network of green infrastructure that serves daily recreational needs. Restored heathland would likely act as supporting habitat for woodlark and nightjar, effectively bringing the birds in closer proximity to residential areas, visitors and their pets. Section C of ShAP 4 includes the proposal for measures to address potential pet predation associated with the development. However, this proposal only applies to pet predation on the restored heathland and not for predation in IBAs of Sherwood Forest ppSPA. It would therefore not mitigate the effects of predation in IBAs.
- 4.9.34 A significant effect of predation by cats on the populations of nightjar and woodlark cannot be objectively ruled out based on the information currently available. A significant effect is therefore considered likely.

# 5 Conclusions and Recommendations

## 5.1 Assessment findings

- 5.1.1 This assessment considered Birkland and Bilhaugh SAC and Sherwood Forest ppSPA, two sites within 15km of the border of the Newark and Sherwood district.
- 5.1.2 This HRA screening report has outlined the threats and pressures that have the potential to undermine the conservation objectives of each European site included.
- 5.1.3 A likely significant effect of the LPR on the conservation objectives of Birkland and Bilhaugh SAC due to air pollution, disease and/ or human induced hydraulic changes can be objectively ruled out based on the information currently available. However, local air quality at the site is currently poor and the LPR could potentially exacerbate this issue further. It may therefore be desirable to welcome comments from Natural England on this (see **Section 4.5.9 - 4.5.12**).
- 5.1.4 A likely significant effect on the nightjar and woodlark populations of Sherwood Forest ppSPA, because of increased cat predation caused by the Local Plan Review, cannot be objectively ruled out based on the information currently available.
- 5.1.5 A total of 800 dwellings are proposed for locations within 400m of IBAs of Sherwood Forest ppSPA which would result in approximately 200 new pet cats in these locations (see **Section 4.9.21 - 4.9.25**).
- 5.1.6 A likely significant effect on the nightjar and woodlark populations of Sherwood Forest ppSPA, because of disturbances caused by dogs and dog walkers, can also not be objectively ruled out based on the information currently available.

5.1.7 Previous studies<sup>59</sup> have highlighted the consequences of disturbance from dogs for nightjar and woodlark. It is considered likely that the Plan will result in an increase in the number of dogs being walked in Sherwood Forest ppSPA. More data on the number of dogs being walked in the ppSPA is required to accurately estimate the extent to which the LPR will increase this number. Further information will enable a clearer position to be taken in respect of the likelihood of significant effects.

## 5.2 Next steps

5.2.1 This report is subject to comments and review by the client team and will then be subject to consultation with Natural England. Any responses from Natural England will be taken into account and this report will be reviewed and amended if possible.

5.2.2 Natural England's advice with regards to Sherwood Forest ppSPA is to adopt a precautionary approach that will minimise any adverse effects on the breeding populations of nightjar and woodlark. This is to ensure any future requirement to comply with the 2010 Regulations is already met.

5.2.3 If, after consultation, it is still considered difficult to evaluate the likelihood of significant effects on Sherwood Forest ppSPA, an Appropriate Assessment may be required. An Appropriate Assessment would be necessary to ascertain whether or not the LPR will adversely affect the integrity of Sherwood Forest ppSPA. However, this is not a legal requirement until Sherwood Forest ppSPA is formally designated as a European site.

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<sup>59</sup> University of New South Wales (2007) "A Dog in The Hand Scares Birds In The Bush." ScienceDaily. ScienceDaily, 12 September 2007

# APPENDIX A

**Table A.1:** European sites and their conservation objectives (where available from Natural England).

Birklands and Bilhaugh SAC
<p><b>Conservation objectives:</b></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"><li>• The extent and distribution of qualifying natural habitats;</li><li>• The structure and function (including typical species) of qualifying natural habitats; and</li><li>• The supporting processes on which qualifying natural habitats rely.</li></ul> <p><b>Qualifying Features:</b></p> <ul style="list-style-type: none"><li>• H4010: Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains; Dry oak-dominated woodland</li></ul>
Sherwood Forest ppSPA
<p><b>Conservation objectives:</b></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"><li>• The extent and distribution of qualifying natural habitats;</li><li>• The structure and function (including typical species) of qualifying natural habitats; and</li><li>• The supporting processes on which qualifying natural habitats rely.</li></ul> <p><b>Qualifying Features:</b></p> <ul style="list-style-type: none"><li>• A224: <i>Caprimulgus europaeus</i>; European nightjar (Breeding); and</li><li>• A246: <i>Lullula arbore</i>; Woodlark (Breeding).</li></ul>



# APPENDIX B

**Table B.1:** Pressures and threats for European sites that may be affected by the LPR are highlighted in yellow. Individual qualifying features under threat were not identified on Natura 2000 data forms.

*Note: SIP indicates data was sourced from Site Improvement Plans. N2K indicates data was sourced from Natura 2000 data forms. Data on threats and pressures for Sherwood Forest ppSPA were taken from Natural England's letter of advice<sup>60</sup>.*

Threats/ Pressures	Birklands & Bilhaugh SAC <sup>61</sup>	Sherwood Forest ppSPA <sup>62</sup>
Public access/ disturbance	H9190 Dry oak-dominated woodland (SIP & N2K)	Breeding populations of nightjar and woodlark
Planning permission: general	H9190 Dry oak-dominated woodland (SIP & N2K)	n/a
Change in land management	H9190 Dry oak-dominated woodland (SIP)	n/a
Physical modification	H9190 Dry oak-dominated woodland (SIP)	n/a
Air pollution: impact of atmospheric nitrogen deposition	H9190 Dry oak-dominated woodland (SIP & N2K)	n/a
Disease	H9190 Dry oak-dominated woodland (SIP)	n/a
Invasive species	H9190 Dry oak-dominated woodland (SIP)	n/a
Loss or fragmentation of habitat	n/a	Breeding populations of nightjar and woodlark
Bird mortality due to predation and traffic	n/a	Breeding populations of nightjar and woodlark
Human induced hydraulic changes	All qualifying features (N2K)	n/a
Modification of cultivation practices	All qualifying features (N2K)	n/a

<sup>60</sup> 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

<sup>61</sup> Natural England (2015) Site Improvement Plan Birklands & Bilhaugh SAC

<sup>62</sup> 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 D.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	<b>Introduction</b>		
2.00	<b>Context &amp; Approach</b>		
3.00	<b>Spatial Strategy</b>		
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)
<b>4.00</b>	<b>Housing Policy</b>		
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)
<b>5.00</b>	<b>Minor Policy Amendments</b>		
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

# 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)
<b>3.0 Newark Area</b>			
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)
<b>4.0 Southwell Area</b>			

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)
<b>5.0 Nottingham Fringe Area</b>			
5.1 - 5.6	General background on policies and sites already granted planning permission		Screened out (A)
<b>6.0 Sherwood Area</b>			
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 10ha 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 ( <b>Thoresby Colliery Redevelopment</b> )	800 dwellings. redeveloped pit head, new primary school, public open space and green infrastructure	Screened in (I)
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)
<b>7.0 Mansfield Fringe</b>			
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)
<b>8.0 Local Drainage Designations</b>			
8.1 - 8.5	Background on flooding risk and SFRA		Screened out (A)
<b>Summary</b>		<b>6,004 dwellings</b>	

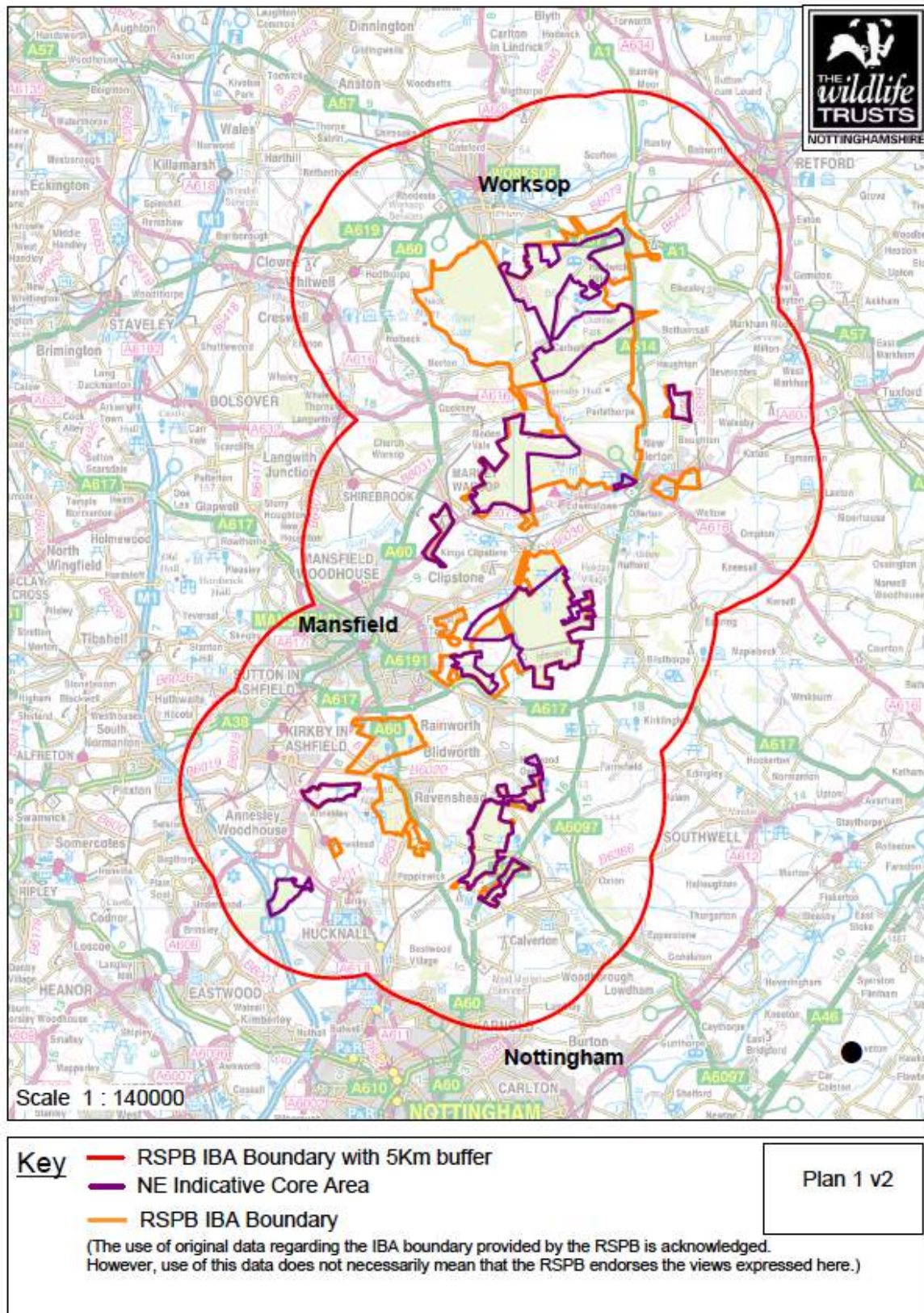


# APPENDIX E: Summary screening of LPR Preferred Approach – Town Centres & Retail

**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 2010<sup>63</sup>.

<sup>63</sup> Map is available online at: <http://www.newark-sherwooddc.gov.uk/media/newarkandsherwood/imagesandfiles/planningpolicy/pdfs/>



© Lepus Consulting Ltd

1 Bath Street Cheltenham GL50 1YE

T: 01242 525222

E: [enquiries@lepusconsulting.com](mailto:enquiries@lepusconsulting.com)

[www.lepusconsulting.com](http://www.lepusconsulting.com)

**CHELtenham**



Lepus Consulting  
1 Bath Street  
Cheltenham  
Gloucestershire GL50 1YE

t: 01242 525222  
w: [www.lepusconsulting.com](http://www.lepusconsulting.com)  
e: [enquiries@lepusconsulting.com](mailto:enquiries@lepusconsulting.com)