



Habitat Regulations Assessment of the Breckland Local Plan - Preferred Directions Stage



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Habitats Regulations Assessment of Breckland
Local Plan – Preferred Directions



Habitats Regulations Assessment of Breckland Local Plan Part 1 – Preferred Directions

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Summary

Habitats Regulations Assessment is required in accordance with the Conservation of Habitats and Species Regulations 2010, as amended, in order to ensure that plans and projects do not adversely affect any European wildlife sites. A local plan is the subject of Habitats Regulations Assessment, which is the responsibility of the plan making body to produce.

This report provides the Habitats Regulations Assessment of the Breckland Local Plan, being undertaken by the Breckland Council. This report is undertaken at the 'Preferred Directions' stage of plan making and will continue to be updated alongside the plan as it progresses towards adoption. The Preferred Directions document assessed by this report is that which forms the public consultation on Preferred Directions, dated December 2015 and publicly available on the Council's website. A previous iteration of this HRA was produced based on a draft of the Preferred Directions shared with Footprint Ecology in September 2015.

This Habitats Regulations Assessment is supported by a separate background and review of evidence report setting out initial background and evidence gathering work, which was undertaken in the early stages of the development of the new Local Plan. That previous report provides the background and underpinning evidence for this assessment, identifying information available for use within this Habitats Regulations Assessment, and additional information which may need to be gathered. That report also considered the protection of European sites to date, as a result of the implementation of the current plan (the Breckland Core Strategy), highlighting potential concerns and opportunities relating to protection of European sites to inform the new Local Plan now being prepared to replace the Core Strategy.

Following on from that background and review of evidence, this report is the formal Habitat Regulations Assessment of the emerging new Local Plan. It will remain in draft until the finalisation of the plan, ready for adoption by the Council, as it will be continuously updated and used to inform the later development of the plan and further public consultation stages.

We have undertaken a check of each policy in the plan for any likely significant effects on any European site. This screening provides Breckland Council with a number of recommendations for text changes and additions to strengthen protection of European sites within the plan and incorporate measures to avoid risks. The screening has identified several of key issues for further (more detailed) assessment, and appropriate assessment has now been undertaken for impacts relating to development presence, urban effects (including recreation), traffic and roads, water and air quality. Each topic heading forms a separate section in this report.

Current information and analysis has allowed positive progression towards ensuring that the Local Plan will not adversely affect European sites, but it remains too early to draw a legislation compliant conclusion, and the assessment will continue to seek solutions to achieve this as the information gaps are filled and the plan develops towards its submission stage. Key information gaps include the Water Cycle Study and Strategic Flood Risk Assessment, which are in preparation, and up to date stone curlew data (post 2011) which is yet to be obtained. These pieces of evidence will be considered in the assessment of the next iteration of the Local Plan.

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1. Introduction

- 1.1 This report is the Habitats Regulations Assessment of the new Breckland Local Plan, currently being prepared by Breckland Council. This report is currently an assessment of the emerging plan at its 'Preferred Directions' stage. A Habitats Regulations Assessment considers the implications of a plan or project for European wildlife sites, in terms of any possible harm on wildlife interest that could occur as a result of the plan or project. Further explanation of the assessment process is provided below and in greater detail in Appendix 1.
- 1.2 At the present time, spatial planning and development management in the Breckland District is led by the Breckland Local Development Framework, which is a suite of planning documents adopted by the Council between 2009 and 2012, incorporating the Core Strategy, the Site Specific Policies and Proposals Document and the Thetford Area Action Plan. These documents began to be prepared in 2007, and Habitats Regulations Assessment work commenced shortly after, when it was recognised that new growth had the potential to affect European wildlife site interest and there was a need to properly assess those potential impacts in accordance with the duties placed upon the Council by the Habitats Regulations.
- 1.3 It is Government policy that local planning documents are continually reviewed in order to remain up to date and informed by current evidence on local economic, social and environmental needs, and national legislation and planning policy. In light of this, and recognising the need to revisit key issues such as housing targets since the cessation of a region led approach to planning through Regional Spatial Strategies, Breckland Council has embarked on the preparation of a new Local Plan. The new plan is proceeding through the various stages of plan preparation, which commenced with the production of an Issues and Options document for public consultation late 2014/early 2015. The outcomes from that consultation have now been used to inform the preparation of a Preferred Directions document. Public consultation on the Preferred Directions will now inform the preparation of the plan for Submission for Examination.
- 1.4 The new Local Plan will replace all documents within the Local Development Framework. Previous Habitats Regulations Assessment work has covered all of the documents that make up the Local Development Framework. When embarking on new Habitats Regulations Assessment work, it is important to take stock and consider how well the measures put in place to protect European site interest have worked, and what evidence there is available to support the continuation of such measures, or to indicate that they may need modification. Therefore, in order to inform the early development of the new Local Plan, Breckland Council commissioned Footprint Ecology to produce a background and review of evidence document; which reviewed previous assessment work and evidence that should inform the new Habitats Regulations Assessment of the new Local Plan. That initial report should be read in conjunction with this report as it is the precursor to this formal report of Habitats Regulations Assessment for the emerging

Local Plan, and provides a greater level of detail on the evidence that supports this assessment.

- 1.5 This report provides Habitats Regulations Assessment at the ‘Preferred Directions’ stage of plan making. This report has been produced based on a draft of the Preferred Directions which was provided to Footprint Ecology in September 2015. This report has then subsequently been amended to reflect the consultation version of the Preferred Directions, made publicly available on the Breckland Council and comments provided by Breckland Council. This report will be updated in the future alongside the Local Plan as it is progressed by Breckland Council. The next update to the Habitats Regulations Assessment will be made when the new Local Plan is considered complete by the Council and is ready for Submission for Examination. Any post Examination modifications will also need to be checked before the Habitats Regulations Assessment is complete and the Local Plan is given effect.

Habitats Regulations Assessment process

- 1.6 A ‘Habitats Regulations Assessment’ is the step by step process of ensuring that a plan or project being undertaken by, or permitted by a public body, will not adversely affect the ecological integrity of a European wildlife site. Where it is deemed that adverse effects cannot be ruled out, a plan or project must not proceed, unless exceptional tests are met. This is because European legislation, which is transposed into domestic legislation and policy, affords European sites the highest levels of protection in the hierarchy of sites designated to protect important features of the natural environment.
- 1.7 The relevant European legislation is the Habitats Directive 1992¹ and the Wild Birds Directive 2009², which are transposed into domestic legislation through the Conservation of Habitats and Species Regulations 2010, as amended. These Regulations are normally referred to as the ‘Habitats Regulations.’ Legislation sets out a clear step by step approach for decision makers considering any plan or project. In England, those duties are also supplemented by national planning policy through the National Planning Policy Framework (NPPF). This national planning policy also refers to Ramsar sites, which are listed in accordance with the international Ramsar Convention. The NPPF requires decision makers to apply the same protection and process to Ramsar sites as that set out in legislation for European sites. Formally proposed sites, and those providing formal compensation for losses to European sites, are also given the same protection.
- 1.8 The duties set out within the Habitats Regulations apply to any public body or individual holding public office with a statutory remit and function, referred to as ‘competent authorities.’ The requirements are applicable in situations where the competent authority is undertaking or implementing a plan or project, or authorising others to do so. A more detailed guide to the step by step process of Habitats Regulations Assessment is provided in this report at Appendix 1.

¹ Council Directive 92/43/EEC

² Council Directive 2009/147/EC

- 1.9 In assessing the implications of any plan or project, in this case a local plan, for European sites in close proximity, it is essential to fully understand the sites in question, their interest features, current condition, sensitivities and any other on-going matters that are influencing each of the sites. Every European site has a set of ‘interest features,’ which are the ecological features for which the site is designated or classified, and the features for which Member States should ensure the site is maintained or, where necessary restored. Each European site has a set of ‘conservation objectives’ that set out the objectives for the site interest, i.e. what the site should be achieving in terms of restoring or maintaining the special ecological interest of European importance.
- 1.10 The site conservation objectives are relevant to any Habitats Regulations Assessment, because they identify what should be achieved for the site, and a Habitats Regulations Assessment may therefore consider whether any plan or project may compromise the achievement of those objectives. Further information on European site conservation objectives can be found at Appendix 2 of this report.

A positive approach to assessing the plan and informing its progression

- 1.11 The Breckland Local Plan is currently at Preferred Directions stage. The Council has used previous consultation responses provided by consultees at the Issues and Options stage to inform the preferred directions for sustainable growth within Breckland District. These preferred directions, informed by comments made by statutory bodies, organisations, business and the public, are now presented within the Local Plan Part 1 - Preferred Directions document available on the Council’s website.
- 1.12 The Preferred Directions document is presented in a way that enables the preferred policy options to be clearly linked to relevant evidence and consultation responses. Under each policy heading within the plan, the preferred policy direction is presented with text to explain what consultees said at the earlier stage, and then a preferred approach to policy, along with any relevant evidence that has been drawn upon. Each policy is therefore not presented in final policy wording form at this stage, but rather the intended approach to policy wording is outlined. This gives scope for further refinement of policy wording, and therefore enables this Habitats Regulations assessment to make meaningful recommendations that can be acted upon in order to strengthen the protection afforded to European sites through the Local Plan, prior to its submission for Examination.
- 1.13 It is important to recognise that a Habitats Regulations Assessment is an intrinsic part of plan making. It identifies potential risks to European sites posed by an emerging policy approach, but it should also seek to find solutions that enable sustainable development to meet the needs of an area whilst protecting European sites. The Habitats Regulations Assessment is therefore mindful of the objectives of the plan, and recommends measures to allow those objectives to be met whilst avoiding or minimising risk. However, the Council must adequately apply the protective legislation for European sites, and where solutions are not available or evidence to support a solution is not robust, it is then necessary to consider a different policy approach.

1.14 As described in Appendix 2, the step by step process of Habitats Regulations Assessment of an emerging plan allows for continual refinement of the plan to ensure its compliance with the Habitats Regulations. There are distinct stages where plan modifications may be recommended; the screening for likely significant effects stage, as set out in Section 3, and the appropriate assessment stage, as set out in Sections 4 onwards. Those sections explain how each stage can recommend changes to the plan, and how any recommendations may need to be backed up by relevant information or evidence to support the approach recommended.

European sites

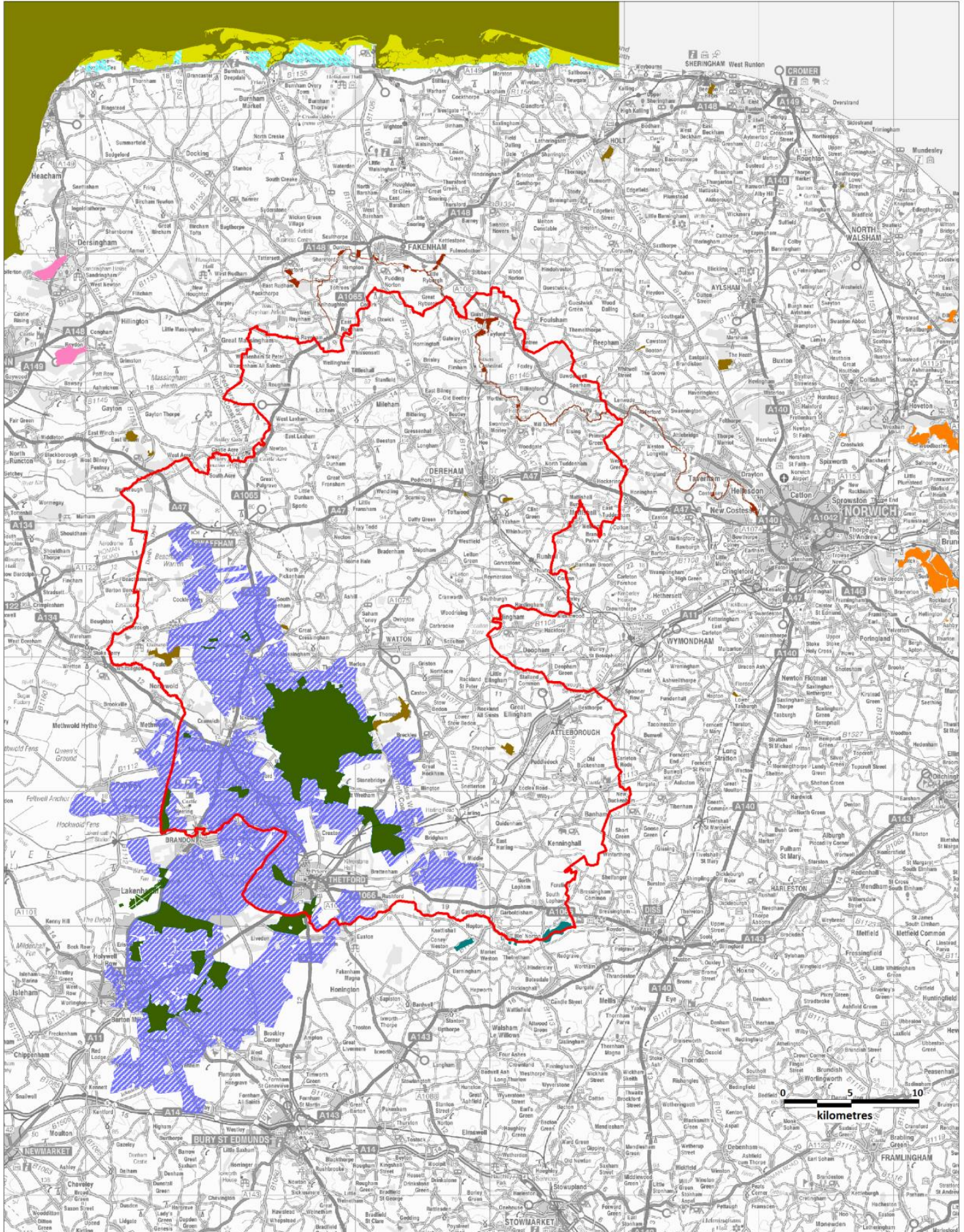
1.15 There are a range of European sites within or near the Breckland District that need to be checked for their potential to be affected by new growth that will be promoted by the new Local Plan. The sites considered within this report are drawn from the original HRA work on the Breckland Core Strategy (Liley *et al.* 2008), and then reviewed in the recent background evidence document. The check in 2008 involved identifying all European sites that fell within a 20km buffer of the District to give an initial list. A few sites were then removed from that list because they were so far from the District and their interest/character meant there was no plausible mechanism by which impacts might occur. Sites are listed in Table 1 and the main sites are shown on Map 1.

Table 1: Relevant sites (taken from Liley *et al.* 2008)

SPA	SAC	Ramsar
Breckland	Breckland	Broadland
Broadland	Norfolk Valley Fens	North Norfolk Coast
North Norfolk Coast	North Norfolk Coast	Ouse Washes
The Wash	Ouse Washes	Redgrave & Lopham Fens
Ouse Washes	River Wensum	The Wash
	The Broads	
	The Wash and North Norfolk Coast	
	Waveney and Little Ouse Valley Fens	

1.16 Appendix 3 provides site by site interest features for each European site. The background and review of evidence document provides further detail on each of the European sites.

Map 1: European Sites



SACs

- Breckland
- Norfolk Valley Fens
- North Norfolk Coast
- River Wensum
- Roydon Common & Dersingham Bog
- The Broads
- The Wash & North Norfolk Coast
- Waveney & Little Ouse Valley Fens
- Winterton-Horsey Dunes

SPAs

(only areas outside SACs shown)

- Breckland
- N Norfolk Coast
- Breckland District

2. Previous Habitats Regulations Assessment Work

- 2.1 A review of all previous Habitats Regulations Assessment work and current measures in place to protect European sites is only provided in summary in this section, as a more comprehensive review can be found in the background and review of evidence document.
- 2.2 Breckland District Council currently has a suite of development plan documents in place to guide the nature and location of sustainable development for the District and inform planning decisions up to 2026. The documents form what is known as a ‘Local Development Framework.’ The adopted planning documents for Breckland have all been the subject of Habitats Regulations Assessment. The Local Development Framework consists of:
- The Core Strategy
 - Site Specific Policies and Proposals
 - Thetford Area Action Plan (‘TAAP’)

Previous evidence used

- 2.3 The Habitats Regulations Assessment work for the Local Development Framework was informed by a considerable amount of evidence gathering to establish the sensitivities of European site interest to new growth. This has since been supplemented by a range of relevant studies initiated by Breckland Council and other parties. Key evidence, explained in more detail in the background and review of evidence report, includes:

Visitor surveys

- Visitor surveys and visitor modelling relating to Breckland SPA sites (Thetford Forest undertaken by UEA for Breckland Council (Dolman, Lake & Bertonecelj 2008)
- Visitor survey work undertaken for other local authorities (Fearnley, Liley & Cruickshanks 2011)

Stone Curlew

- Original research on housing, roads and stone curlews commissioned by Breckland Council (Sharp *et al.* 2008)
- Modelling of impact of additional traffic on the A11 (Clarke, Sharp & Liley 2009)
- Peer-reviewed paper mainly based on data in 2008 report with some additional analysis (Clarke *et al.* 2013)
- Additional work on stone curlews, focussing on impacts of buildings (Clarke & Liley 2013)

Nightjar and Woodlark

- Nest predation study, commissioned by Breckland Council (Dolman 2010)
- Analysis of woodlark and nightjar trends across Thetford Forest, to determine why population of these species is declining markedly, commissioned by Forestry Commission (Dolman & Morrison 2012)

Table 2: Summary of adverse effects identified (and discussed in detail) in the Core Strategy HRA (Liley *et al.* 2008). Table taken from HRA for the TAAP (Liley & Tyldesley 2011)

Potential effect	Summary of impact and related evidence
Direct impacts of built development on Annex I birds species	There is strong evidence that stone curlew, nightjar and woodlark all occur at lower densities on sites/areas surrounded by housing (Liley & Clarke 2002, 2003a; Murison 2002; Underhill-Day 2005; Langston <i>et al.</i> 2007b).
Disturbance to Annex I birds associated with heathland and farmland habitats as a result of recreational use	Stone curlew, nightjar and woodlark are all vulnerable to disturbance, which can result in sites not being used by breeding pairs and reduced breeding success (Murison 2002; Taylor 2006; Mallord <i>et al.</i> 2007; Taylor, Green & Perrins 2007)
'Urban effects'	A suite of urban effects such as fly tipping, eutrophication (e.g. from dog fouling), increased fire risk etc. are documented for heathland sites adjacent to housing (Underhill-Day 2005). Such impacts may be relevant for other habitats too.
Recreation impacts to coastal habitats and species	Coastal habitats and some coastal species are vulnerable to impacts from recreation (Saunders <i>et al.</i> 2000; Lowen <i>et al.</i> 2008; Liley <i>et al.</i> 2010).
Water abstraction	Water abstraction reduces flow in rivers and streams, lowers groundwater levels and potentially depletes aquifers. Impacts potentially occur where the interest features are aquatic or depend on water.
Discharges affecting water quality	Discharges from waste water treatment works may increase levels of nutrients in the water, leading to loss of water quality.
Contamination from flood water	Flood water can result in water flows containing high levels of nutrients or contaminants draining from urban areas into water courses and affecting European Protected sites. There are particular issues where existing sewers or drains cannot cope with water levels.

Potential effect	Summary of impact and related evidence
Air pollution from road traffic	Impacts typically occur within 200m of a road (Highways Agency 2005; Bignal <i>et al.</i> 2007). Increased traffic may result in a decrease in air quality.
Avoidance of roads by Annex I birds	Evidence that stone curlews occur at lower densities adjacent to main roads (Day 2003; Sharp <i>et al.</i> 2008).

Measures in place to mitigate for current planning policy risks

2.4 Informed by evidence gathered, the Habitats Regulations Assessment for the Local Development Framework documents focused on the following potential impacts arising from new development:

- Reduction in SPA bird density (stone curlew, nightjar and woodlark) in proximity to new development
- Increased disturbance of SPA birds (stone curlew, nightjar and woodlark) arising from additional recreational activity
- Increased levels of urbanisation impacts to SAC heaths, as a result of increased numbers of people (including trampling, fly-tipping, fire risk)
- Traffic generated air pollution affecting SAC heaths
- Demand for new/upgraded roads leading to avoidance of habitat in close proximity by SPA birds (stone curlew, nightjar and woodlark).

2.5 The Habitats Regulations Assessment work also included consideration of impacts on other European sites further afield; the North Norfolk Coast, The Wash, Ouse Washes and The Broads. Impacts on these sites potentially include recreational disturbance and deterioration of water supply and water quality.

2.6 The following mitigation measures are currently applied for the Local Development Framework, in light of the previous Habitats Regulations Assessment findings and recommendations made.

- Direct effect of built development on SPA birds = policy wording and 1500m/400m zones mapped
- Indirect effect of disturbance = policy wording committing to a recreation management, monitoring and mitigation strategy in collaboration with partners
- Urban effects on heaths around Thetford = developer funded approach to urban heaths management and the provision of alternative green spaces
- Recreation pressure on the North Norfolk Coast = Plan wording to commit to new research and collaboration with other neighbouring local authorities
- New and upgraded roads = policy commitment to preventing any new roads or road improvements within 200m of Breckland SAC

- New and upgraded roads = excluded from the 1500m stone curlew zone
- Water issues = policy wording to secure flood alleviation measures and commitment to bringing forward new development in step with infrastructure and supply improvements

Current Status of mitigation measures and recommendations for progression

2.7 The mitigation measures, in terms of their current status and progression in implementation, were reviewed in detail in the background and review of evidence report. The findings of that report should be read alongside this Habitats Regulations Assessment, as the findings are critical to the assessment now being undertaken of the emerging Local Plan. The recommendations are summarised here:

- The 1500m zonation for the protection of breeding stone curlew remains a strong, evidence backed and essential mitigation mechanism, but that there may be scope to make improvements with regard to the interpretation and consistent application of the policy.
- The 1500m zone for birds nesting outside the SPA needs to be updated and mitigation options carefully considered.
- It is recommended that the 400m zone for project level Habitats Regulations Assessment remains within policy for the new Local Plan, because nightjars and woodlark are declining in the Brecks and therefore possibly more vulnerable to additional pressure.
- Thetford remains a growth priority for Breckland, and therefore the proximity of the Breckland European sites boundary to the edge of the town in most directions remains a fundamental issue to overcome.
- There is an urgent need to progress an approach to manage and monitor recreational impacts for the District as a whole, and also the specific requirement to secure an evidence based, consistent and pre-agreed mitigation package for the Thetford urban heaths, in particular Barnham Cross Common. Specific options for allocations will need to be checked against current mitigation measures including the zones, proximity to Thetford urban heaths etc.
- Air pollution issues will remain a concern as the plan develops. It will be necessary to gather evidence to identify what level and location of growth may trigger the need for new roads or road upgrades, and then how such needs could be alternatively accommodated without adverse effects on European site interest.
- An update to the previous situation with regard to water supply, waste water treatment and water infrastructure is necessary to understand what progress has been made to date, what work is planned and what level of growth is still not accommodated by existing or planned work is necessary. Growth at Attleborough will need to be considered alongside the findings and further recommendations of the Water Cycle Study, and should have particular regard for the isolated site of the Norfolk Valley Fens SAC located to the south west of Attleborough.
- Tourism impacts will need to be adequately covered in the Habitats Regulations Assessment as well as those arising from new residential development. There is currently a Norfolk wide project looking at recreational use of Norfolk European sites, with Breckland Council actively

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involved and contributing to this work. As the project develops it will inform the Habitats Regulations Assessment.

- The emerging Local Plan should have regard for the need to maintain and restore European site interest, irrespective of new growth, seeking opportunities for a plan led approach to protecting and enhancing the natural environment, and particularly European sites.

3. Screening the plan for likely significant effects

- 3.1 At the screening stage of Habitats Regulations Assessment for a plan, there is the opportunity to identify changes to the plan that could be made to avoid risks to European sites. The screening for likely significant effects is an initial check to identify risks and recommend any obvious changes that can avoid those risks.
- 3.2 The screening table at Appendix 4 records the screening undertaken on the Preferred Directions. All aspects of the emerging plan that influence sustainable development for the District are checked for risks to European sites. The table at Appendix 4 therefore records the conclusions drawn and recommendations made for each policy proposal. It provides recommendations for text changes or additions within the plan. Text changes are recommended in the screening table where there is a clear opportunity to avoid impacts on European sites through policy strengthening. In such instances the risk is not such that further assessment of impacts is required, but rather that the impacts can be simply avoided with straightforward changes to the plan. The table, as with any part of this assessment, is not finalised until the plan itself is finalised, and the screening stage may be revisited at any point during plan preparation.
- 3.3 Where risks to European sites are identified but further scrutiny of information, further evidence gathering or assessment of the nature and extent of impacts is required, the screening table records a recommendation for those aspects of the plan to be taken to the next stage of Habitats Regulations Assessment, which is the more detailed ‘Appropriate Assessment’ stage. Appropriate assessment for risks to European sites that require further and more detailed analysis is set out in Sections 4 onwards.
- 3.4 The screening identifies where a particular aspect of the plan should be taken to the appropriate assessment stage. When those identified aspects of the plan are brought forward for appropriate assessment, it is clear that they can be categorised under a small number of key themes. By structuring the appropriate assessment under these themes, the issues can be assessed in a logical and scientific way, with relevant evidence for each theme scrutinised. The key themes that now form the sections of the appropriate assessment are:
- Urban effects, which include trampling, increased fire risk, eutrophication
 - Reduced densities of SPA bird species in response to increased development presence
 - Recreation disturbance of SPA bird species
 - Increased traffic volumes, road improvements and new roads, and air quality deterioration
 - Water issues, including flooding, water resources and water quality
- 3.5 The key themes emerge because the screening check has identified a risk to European sites that cannot be avoided. Those risks are present because there is a potential ‘pathway’ between the policy proposal in the plan, and one or more interest features of

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the European site. In other words, there is an identifiable process by which the interest feature could suffer harm. Figure 1 below provides an illustration of the impact pathways identified and the European sites potentially affected, which then relates to the sections of this report that follow, and form the appropriate assessment.

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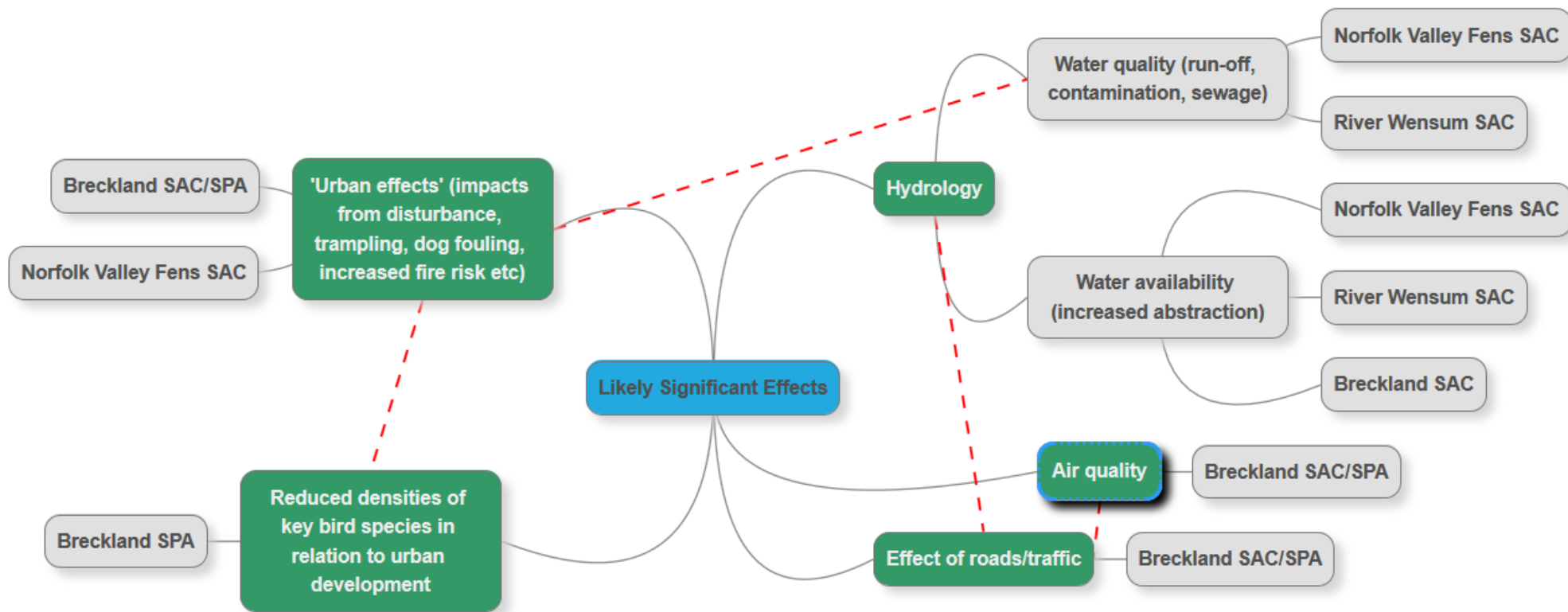


Figure 1: Pathways by which Likely Significant Effect is triggered by different elements within the plan. This diagram outlines the structure of the Appropriate Assessment section of the report, with green shading reflecting headings within the Appropriate Assessment. Red dotted lines reflect closely related impacts pathways

4. Appropriate Assessment – Overview and Scope

Setting the context for the appropriate assessment

- 4.1 The Appropriate Assessment stage of Habitats Regulations Assessment is the point at which potential impacts are ‘assessed.’ Prior to this, the Habitats Regulations Assessment has focused on screening and making decisions about whether there is a potential risk, taking a precautionary approach and assuming the presence of a risk to European sites where there are uncertainties. The appropriate assessment stage assesses risks in light of available information, drawing upon specialist expertise to interpret that information. Appendix 1 provides more detail on the Habitats Regulations Assessment process and includes a diagrammatic representation of the step by step approach at Figure 3.
- 4.2 An appropriate assessment should gather together and analyse available evidence, or where necessary inform studies to provide new evidence, in order to conclude whether the plan or project can proceed without resulting in adverse effects on the integrity of any European site. In undertaking this assessment, consideration should be given to all available measures that could be added to the plan or project, or could restrict or modify the plan or project, in order to be able to draw a conclusion of no adverse effects. Mitigation measures should themselves be adequately backed up by evidence to have confidence that they are fit for purpose.
- 4.3 It is important to understand that the Local Plan is the framework to oversee sustainable development, and that therefore means that it is a plan for social, economic and environmental growth, together. The plan does not simply deliver physical development, it is equally in place to secure the social and environmental needs of the Breckland District as well as maintain a healthy economy and allow new housing. The different aspects of sustainable development should not be considered in isolation; rather the plan should bring together the objectives for each, and set out a means by which all can be delivered.
- 4.4 The Habitats Regulations Assessment therefore has a role to play in supporting delivery of economic and social growth, in the same way that economic and social aspects of the plan have a role to play in supporting the protection, restoration, expansion and enhancement of natural assets. In undertaking the appropriate assessment part of this plan level Habitats Regulations Assessment, it is necessary to have regard for the deliverability of mitigation measures to protect European sites, and how they might affect, positively or negatively, the objectives of the plan. That is not to say that a Habitats Regulations Assessment should be compromised. It is that any opportunities should be recognised.
- 4.5 The following sections take each impact theme derived from the screening for likely significant effects. Each theme can arise from a number of types of growth; residential, employment, tourism, social infrastructure etc. Each section therefore refers to the likely sources of risk to European site interest features and considers appropriate

mitigation, in light of an assessment of the impacts. The European sites within and around the Breckland District are predominantly accessible, and their unique characteristics, beauty and tranquillity make them a valuable asset to the District in terms of its economy and tourism industry. They are also one of the predominant reasons why people choose to reside in the Norfolk area. These points are relevant to the appropriate assessment and the likely effectiveness of any mitigation options to protect European site interest features. As this assessment progresses and the Local Plan is finalised, these points will continue to be checked, to ensure that the final mitigation approach is not in conflict with the overall objectives of the Local Plan.

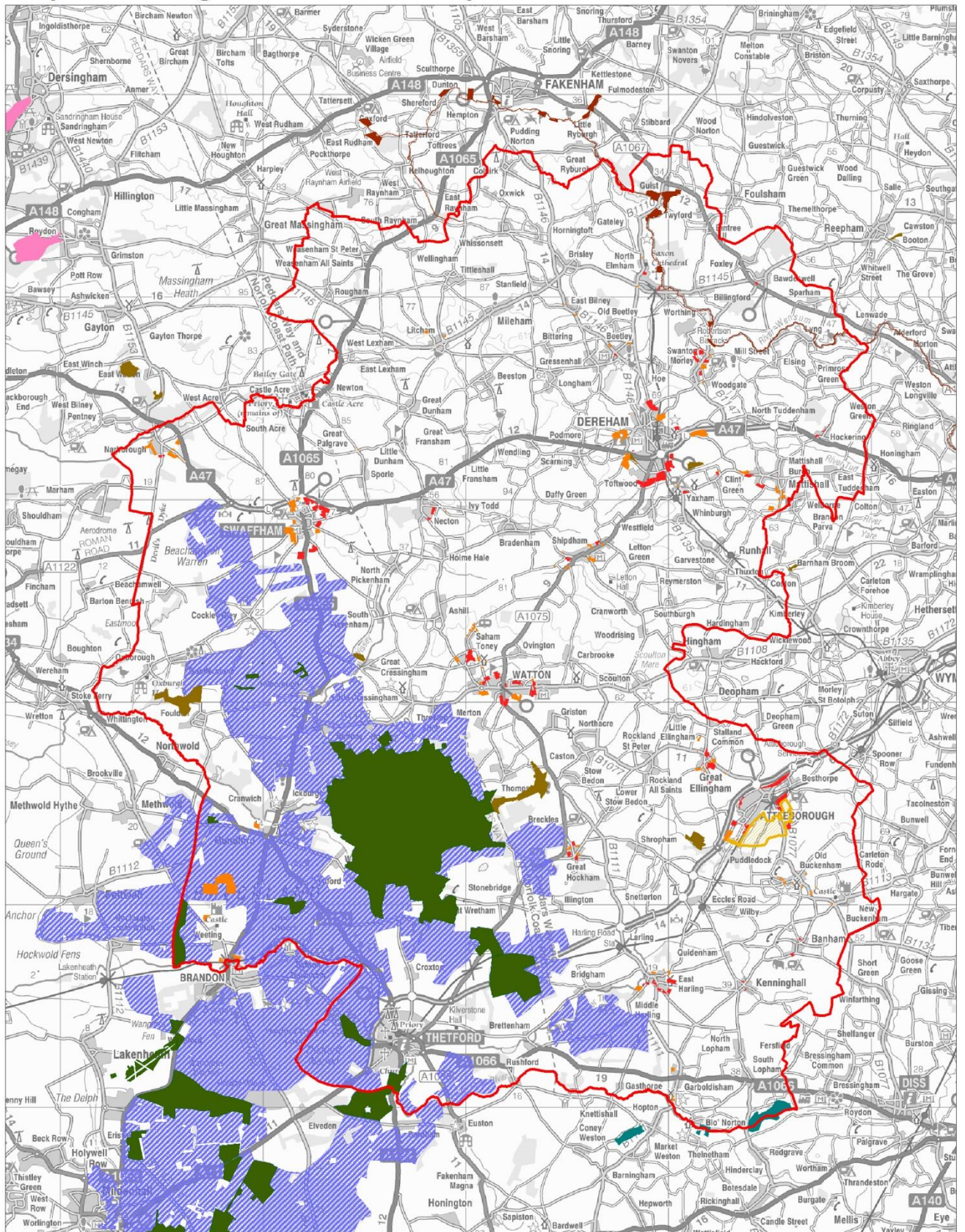
Summary of growth proposed within the plan

- 4.6 The following sections of appropriate assessment cover the impact themes in Figure 1 of the previous section of this report, and each section assesses those risks stemming from the proposed growth in more detail. Before progressing to those sections, the proposed growth is summarised here.
- 4.7 The plan seeks to deliver ‘no less than 14,925 new dwellings and all associated infrastructure over the plan period 2011-2036.’ The plan sets out preferred directions for meeting housing need through the urban extensions to Thetford and Attleborough, with further housing focused at Dereham, Swaffham and Watton. A lower level of growth will occur at other settlements across the Breckland District.
- 4.8 One of the two strategic urban extensions is at Thetford, with much of the proposed growth featured in the Core Strategy, and has already been considered at a lower tier plan level through the Thetford Area Action Plan, and also at a project level with the outline application for the project. Both the Action Plan and the development project have associated Habitats Regulations Assessment work. For the purposes of this assessment of the Breckland Local Plan, it is important to note that the emerging new plan proposes to retain 24 policies from the Thetford Area Action Plan. The appropriate assessment should consider these, and any outstanding actions from previously stated mitigation requirements, as well as providing direction for the Habitats Regulations Assessment of reserved matters applications.
- 4.9 For Attleborough, the strategic urban extension is in earlier stages of progression as a proposal, and the new Local Plan is therefore the main means for checking Habitats Regulations compliance at this point in time. The preferred options document refers to the delivery of a strategic urban extension of 296ha of land to the south east of Attleborough for 4,000 new homes. This includes the requirement for a new link road and the emerging plan supports additional growth along A11 corridor in association with the extension.
- 4.10 For employment growth, at least 67ha of employment land is proposed. The preferred locations and minimum proportions of land area identified in the preferred options document are Attleborough 10ha, Dereham 6ha, Swaffham 9ha, Thetford 22ha and Snetterton 20ha.

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- 4.11 Planned road infrastructure improvements include the new link road for the Attleborough strategic urban extension mentioned above, improvements to the A47 trunk road, and outside the district there is major investment planned for the Northern Distributor Road. The Thetford strategic urban extension project, as approved in outline, includes junction improvements for which mitigation measures are being secured.
- 4.12 An extensive range of information and evidence is used by the Council to underpin the identified growth needs for the District. The appropriate assessment sections that follow have had particular regard for information underpinning housing proposals; the overall housing need, and the locations where the level of housing will then be most sustainably delivered.
- 4.13 Map 2 illustrates the proposed housing locations and their proximity to European sites. The map includes the Attleborough Strategic Urban Extension and the ‘reasonable alternatives’ and the ‘unreasonable alternatives.’ These are emerging site options and the GIS data were provided to Footprint Ecology in September 2015. The unreasonable alternatives remain potential options at this point in the development of the Local Plan, but are less likely to be taken forward due to more unfavourable sustainability assessment and conformity with current preferred directions for level and location of growth.
- 4.14 The distance from European sites is of relevance for the appropriate assessment in terms of impact pathways, mitigation needs and whether mitigation is possible. Where relevant, the data shown in Map 2 are used in the appropriate assessment sections below.

Map 2: Housing locations and European sites



SACs

- Breckland
- Norfolk Valley Fens
- River Wensum
- Roydon Common & Dersingham Bog
- Waveney & Little Ouse Valley Fens
- Winterton-Horsey Dunes

Breckland District

SPAs (only areas outside SACs shown)

- Breckland

Housing elements from the Plan (Emerging sites, Sept 15)

- Reasonable Alternative
- Unreasonable Alternative

Attleborough SUE

5. Appropriate Assessment – Development Presence

- 5.1 This section of the appropriate assessment considers the presence and level of built development in terms of the effect it may have on SPA birds, i.e. their response in terms of their habitat use in proximity to development. An analysis of available evidence, including survey work and research literature, is included.

Reduced densities of key bird species in relation to urban development

- 5.2 Studies from the UK that compare densities of stone curlew, nightjar and woodlark along an urban gradient show that reduced densities occur where development levels are high (Liley & Clarke 2003a; Mallord 2005; Liley *et al.* 2006b; Sharp *et al.* 2008; Clarke & Liley 2013).
- 5.3 For nightjar and woodlark the various studies (Liley & Clarke 2003a; Mallord 2005; Liley *et al.* 2006a) involve sites with public access. The reduced densities on sites with high levels of nearby housing may therefore relate to impacts from recreation (Murison 2002; Mallord *et al.* 2007) and/or other factors such as increased cat predation (Beckerman, Boots & Gaston 2007; Baker *et al.* 2008; van Heezik *et al.* 2010; Floyd, L & Underhill-Day, J C 2013), increased fire risk (Kirby & Tantram 1999; Underhill-Day 2005) or other 'urban effects' (see Underhill-Day 2005 for review). We consider urban effects and recreation separately as discrete appropriate assessment sections later in this report. This section of the appropriate assessment therefore focuses on impacts on stone curlew.
- 5.4 Analysis of Stone Curlew data by Footprint Ecology (Sharp *et al.* 2008; Clarke & Liley 2013) shows a strong avoidance of built development over considerable distances. The analysis focussed on farmland, most of which has limited public access. In the most recent work (Clarke & Liley 2013), using stone curlew data from 1985-2011, in all years, groups of years and individual years there was consistently a significantly lower density of nests in the arable land close to settlements. In separate analyses based on a grid, a clear pattern was found whereby cells with more houses in their vicinity supported lower densities of stone curlews. The different analyses could detect impacts of development at distances out to around 1500m.
- 5.5 The analyses on the impacts of development suggest that the impact of development on stone curlew breeding density is a particular response to residential buildings (but note there are some limitations with how buildings were classified), but do not clearly identify the actual mechanism by which development has an impact. A range of possible mechanisms could be involved (for discussion see Clarke & Liley 2013), for example the birds may simply be selecting 'open' habitats in which to nest, or the avoidance may be linked to high levels of people (and therefore disturbance) in the landscape around buildings, obstruction of sight lines (of birds wary of potential predators or disturbers), increased predator abundance, presence of pets (such as cats), increase noise and increased light levels (the birds are active at night).

- 5.6 The Breckland SPA designation protects the core breeding area used by stone curlews, but it is clear from the analyses that development outside the SPA could also have an impact on the SPA.
- 5.7 Stone curlew use habitat both within and outside the SPA boundary. At the time of classification, the boundary was drawn to encompass the core and essential habitat areas that support the Breckland stone curlew population. Any designation for a mobile species inevitably fails to capture all key habitats supporting the species over a longer period of time. Habitat changes, population changes and external influences will alter habitat use by a species and it will choose the most optimal habitat for the current situation. For this reason, it is widely recognised, and fully endorsed by Natural England, that a Habitats Regulations Assessment should focus on the potential impacts on the interest feature and should recognise that those impacts may take place outside the designation boundary as well as within.
- 5.8 Where habitat outside a site boundary is used by an interest feature it is normally referred to as ‘supporting habitat’ or ‘functionally linked habitat.’ These terms recognise that the habitat in question, whilst outside the site, has an important role in supporting the interest feature and the habitat is therefore linked to the designated site because of the function it performs. This section of the appropriate assessment is assessing the impact of development presence on stone curlew density, and therefore considers the impact, and the necessary mitigation, for such pressures on nesting birds both inside and outside the boundary of the designated site. The reliance on supporting habitat outside the SPA boundary is of particular relevance to the Breckland stone curlew population, because the birds rely on farmland habitat in addition to semi-natural habitat. This brings in the added issue of regularly changing cropping practices on individual fields, which can influence where birds nest in a given year.
- 5.9 Changing crop types in a given area of farmland may influence stone curlews in a range of ways. There may be small changes within a larger and more static home territory, or it may be that breeding territories are much more fluid in response to land management changes, with birds shifting to different areas completely. This means that the extent of supporting or functionally linked habitat is not so easily defined. With a notable expansion of stone curlew nesting outside the SPA boundary (Clarke & Liley 2013), giving some definition or extent limit to which the appropriate assessment considers potential impacts is even more pertinent. The appropriate assessment must include impacts on non-designated habitat that are significant for the SPA population, and needs to be related to habitat that can meaningfully be linked to the maintenance of the SPA population itself.

Assessment of the most suitable mitigation approach

- 5.10 In order to mitigate for the impact of built development, the Habitats Regulations Assessment work for the Breckland Core Strategy, the Thetford Area Action Plan and other relevant planning documents set out a 1500m zone around the parts of the SPA where stone curlews are present. Within such a zone a likely significant effect from new development is presumed and adverse effects cannot be ruled out. The Core

Strategy Policy CP10 provided the zone led mitigation approach that has been applied to date. In taking forward the mitigation to the emerging Local Plan, Policy ENV 03 of the current draft of the Preferred Directions document sets out the same zone led approach to ensure that the plan is not reliant on, or promoting development in, areas where adverse effects on the integrity of the Breckland SPA cannot be ruled out. The exceptions relate to residential development that is in-fill and agricultural buildings that are less than 120m² (as set out within policy ENV 03).

- 5.11 The stone curlew population is currently increasing and the birds use areas outside the SPA boundary for both breeding and foraging. Clarke & Liley (2013) show that stone curlew numbers have increased in the Breckland area (using data to 2011). Numbers within the SPA remained relatively constant since 2000 and it would therefore appear that the distribution is spreading, with more nests occurring on arable land and 'other' habitats beyond the SPA over time. It would seem that the semi-natural grassland provides the preferred habitat, and supports the highest stone curlew densities. As the population has increased, nest density has increased on arable land in particular, but rather than nest in areas close to buildings, birds are spreading out over a wider geographic area. It is relevant to note that birds are spreading in space and yet the avoidance of built development is still present, i.e. as the population has increased there was no evidence that birds had spread into areas close to development.
- 5.12 To provide protection for stone curlews that were nesting outside the SPA, but likely to be part of the same SPA population, the Core Strategy identified supporting habitat areas outside the SPA where birds had regularly nested. A criteria based on 1km grid cells that had held 5 or more stone curlew nests over the period 1995-2006 was used to identify areas outside the SPA that had been regularly used, and a 1500m buffer then applied to these areas³. Within this second buffer, it was concluded that likely significant effects would be triggered by new development and project Habitats Regulations Assessment work would be required. As the potential impact related to supporting habitat rather than core habitat within the SPA, it was anticipated that alternative supporting habitat to provide the same function would be necessary as mitigation. The two buffers, as used in the previous Core Strategy, are shown in Map 3.
- 5.13 Now that the Local Plan is being produced to replace the Core Strategy, it is necessary to revisit the mitigation approach in place, to be confident that it is still the correct approach to jointly achieve the necessary protection of the SPA and the objectives of the Local Plan. The proposed policy wording in ENV 3 includes reference to stone curlew nesting both within and outside the SPA boundary, but the draft text currently does not provide a clear explanation of what is required and why. Explanation of the procedure for development proposals within 1500m of supporting habitat is particularly unclear. There is reference to screening landscape features within the policy, without any detail of what these might be and despite limited evidence that screening may be effective (for discussion see Clarke & Liley 2013). The policy is currently incomplete and

³ The buffer is included in the Core Strategy on page 27, 2.6 key diagram: it is represented by blue hatching

there is reference to a proposals map which is not yet included. It is recommended that Policy ENV3 is re-drafted to provide better clarity, but this should be undertaken in light of the review of the mitigation approach, as discussed below.

5.14 Simply using the existing buffer zones (based on data up to 2006) would run the risk of failing to protect key areas as we know the distribution has changed, and would not represent best practice as appropriate assessments should be based on the best available information, which would include the most up to date information and expert thinking. Given that stone curlews are both spreading outside the SPA and increasing, use of the same criteria (5+ nests over a 12 year period, but using more recent data) could mean an expansion of the second buffer that was put in place to cover supporting habitat functionally linked to the SPA. If the population continues to expand, at some point the buffer could extend over a wide area. It is therefore recommended that a means of defining the extent of habitat that can meaningfully be identified as functionally linked and supporting the SPA population is used. A geographical limit could be set on the extent to which impacts have the potential to affect the SPA population, outside which, it would be assumed that the birds are not part of the SPA population, or may be a minimal number of outliers that have dispersed notably further than that which would be expected. These parameters should be based on an objective analysis of stone curlew habitat use and behaviour.

5.15 There are four potential scenarios whereby birds outside the SPA boundary may use or sometimes occur on land within the SPA; these are set out below and illustrated schematically in Figure 2:

1. Pairs nesting near the SPA boundary may occasionally nest either side of the SPA boundary. For example when re-nesting within a single breeding season or between years. Such shifts (i.e. to adjacent fields) may be linked to arable rotation and crop type.
2. Pairs nesting within the SPA boundary may fly outside the SPA boundary to forage at night.
3. Pairs nesting outside the SPA boundary may fly inside the SPA boundary to forage, for example using semi-natural grassland habitat.
4. Pairs nesting outside the SPA boundary may use the SPA at certain key periods, such as post breeding flocks

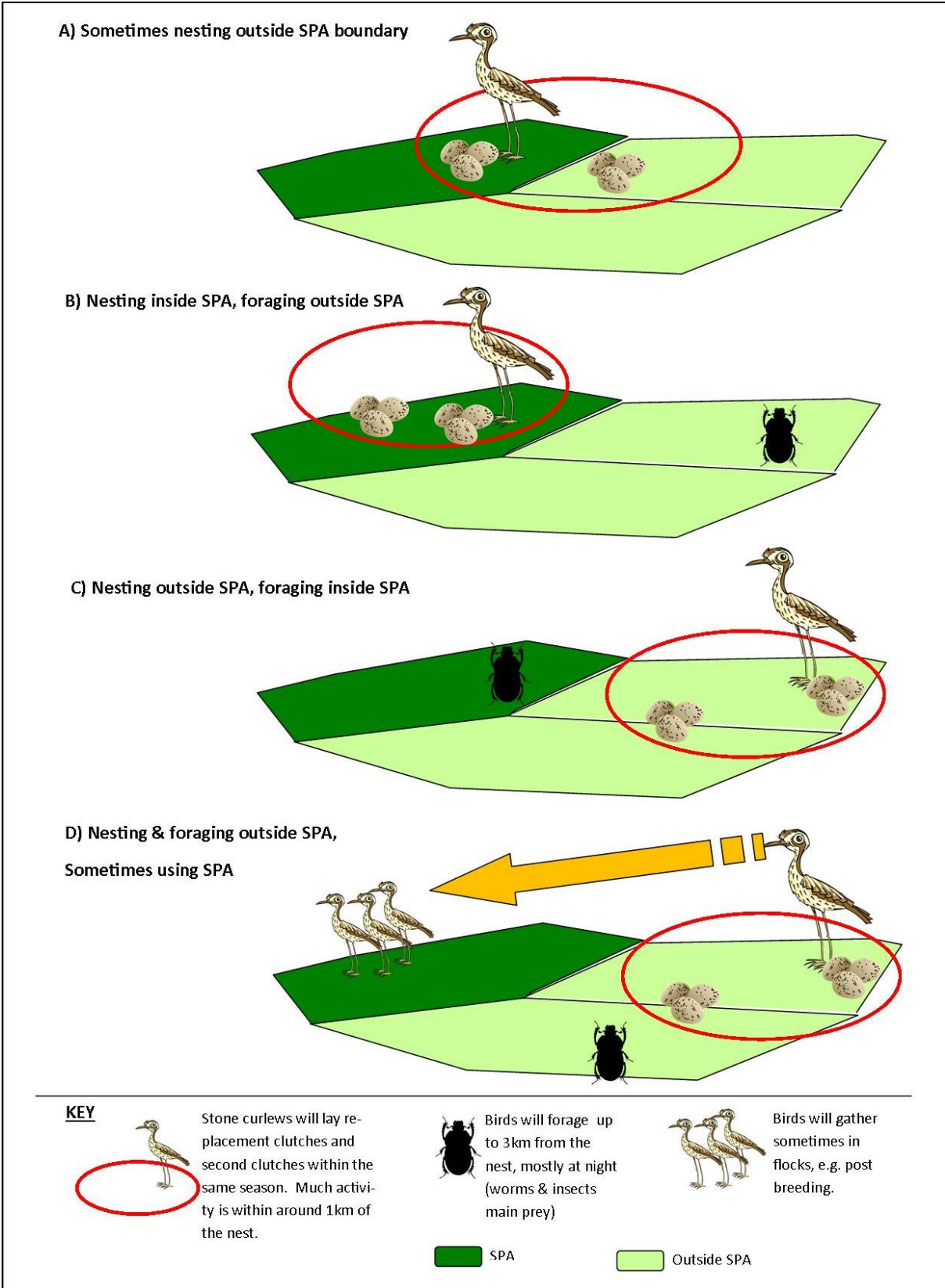


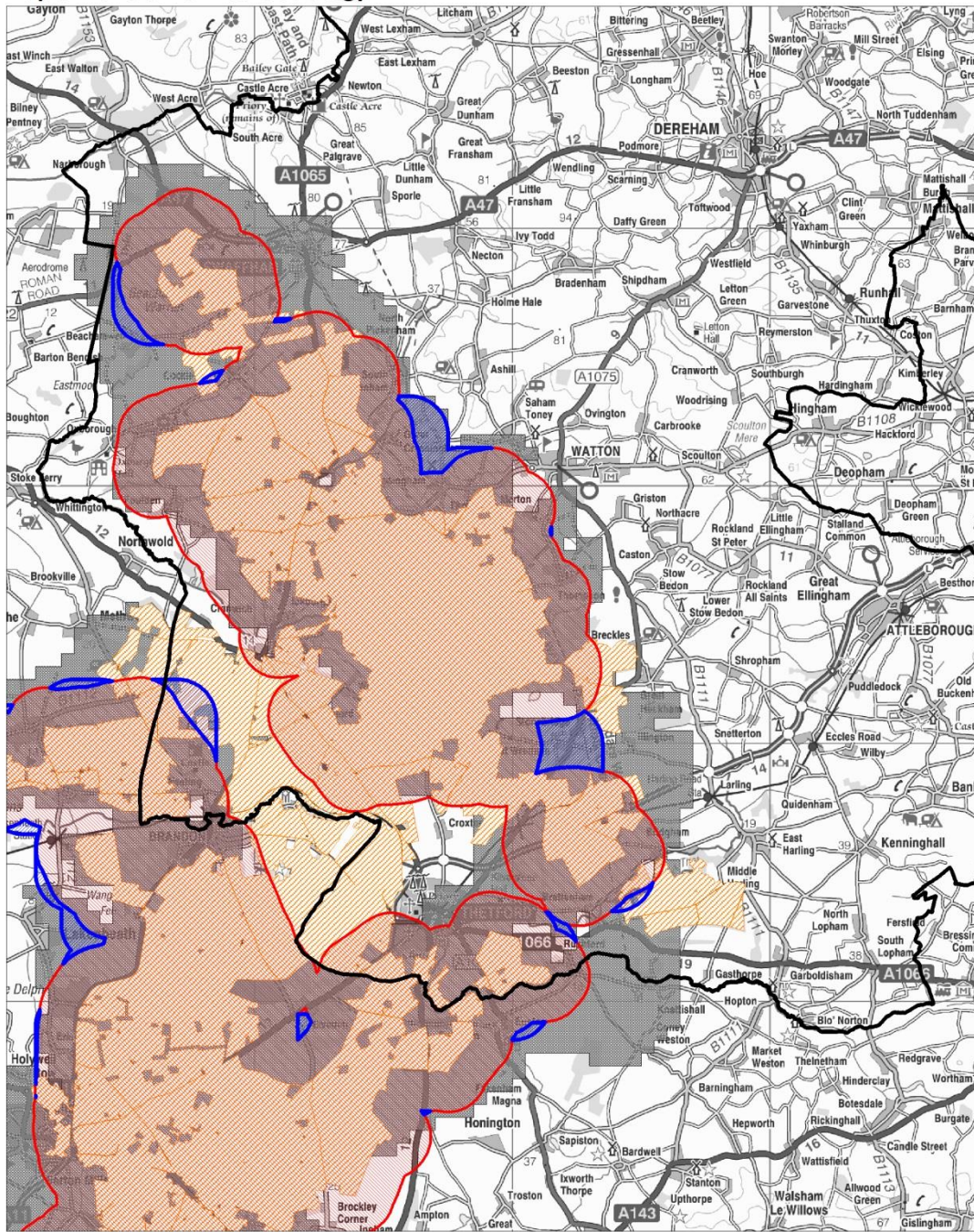
Figure 2: Schematic representation of different scenarios where birds may use areas outside the SPA boundary

- 5.16 By referring to the literature we can draw some conclusions on the kind of distances that might be relevant.
- 5.17 Ringing recoveries suggest that natal dispersal (i.e. the distance from hatching location to breeding site) is mostly within 10km, but there is evidence of birds moving between different parts of UK (Green, Hodson & Holness 1997). Colour-ringing of birds in the UK has shown that a proportion of birds (mostly young females) hatched in Breckland disperse to breed on Salisbury Plain and vice versa (Green 2002). There is therefore evidence that birds within a particular SPA will sometimes move outside that SPA boundary to breed, sometimes some considerable distance.
- 5.18 Even within a year the same pair, nesting in the same area may re-nest if the first nest fails or occasionally nest again after the first brood has fledged (Green, Tyler & Bowden 2000). Sandy, free-draining soils are selected and preferred fields are those containing spring-sown crops where the vegetation height in May was less than 10cm (Green, Tyler & Bowden 2000), and the distribution of potential nest sites is therefore likely to vary each year in line with crop rotation and farming practices.
- 5.19 There are relatively few studies of home ranges. Typically during daylight birds remain close to the nest site and remain within a limited area of 2-4ha (Karavaev 1998; Caccamo et al. 2011), yet during darkness foraging trips can extend some distance. Radio-tracking in Italy suggests night-time home ranges of around 21ha (Caccamo et al. 2011), while work in England (mainly in the Brecks) found birds travelled up to about 3km from the nest to forage, however most activity was within about 1km of the nest (Green, Tyler & Bowden 2000). Foraging home ranges were fragmented and comprised an average of around 30ha of semi-natural grassland, pasture and arable habitats. These studies would therefore suggest that birds will move up to 3km from the nest site to forage.
- 5.20 From the above it would seem appropriate that the second buffer should not extend beyond 3km from the SPA boundary. This recommendation is made because most activity is within 1km of the nest and evidence indicates that development impacts occur over a 1500m distance, 3km should adequately encompass the majority of birds' foraging requirements and absorb any impact of development. At distances beyond 3km it is suggested that risks would not be significant for the SPA population. The 3km distance is therefore proposed as the limit to which the mitigation requirements would apply and the limit to which any lower tier plan or project level Habitats Regulations Assessment would need to be undertaken (notwithstanding the need to still assess impacts on stone curlew in order to fulfil other legislative and policy requirements in relation to wild birds). It is recommended that this approach is fully explained and incorporated into the Local Plan at policy ENV3, but that this should be finalised once additional up to date survey information is available, as discussed below).
- 5.21 In suggesting how this approach should be set out within policy, it is advised that at this stage we can identify that areas within 1500m of the SPA (where stone curlews are present), and as previously implemented as part of the Core Strategy, a development proposal in this zone would certainly trigger likely significant effect, and adverse effects

would only be ruled out if development were infill or agricultural buildings within a particular size threshold (see para 5.9). In other words, the 1500m zone around the SPA boundary would remain and would function as an exclusion area unless the above criteria were met. It should be noted that Breckland Council and Natural England are currently preparing an 'agricultural buildings protocol' to assist with identifying types of agricultural uses for buildings where significant effects would be unlikely due to lack of light, noise, people presence etc.

- 5.22 Beyond this 1500m zone, but within 3km of the SPA, where breeding stone curlew are present, development may also have an impact if there are stone curlew nesting within 1500m. Previously, as explained above, the second buffer zone has related to land outside the SPA but with five or more nests over the period 2007-2011. At present, up to date data on stone curlew distribution is not available. It is advised that in preparing the new Local Plan, the stone curlew mitigation should be based on a refreshed set of data incorporating survey information up to 2015.
- 5.23 To illustrate how possible zones could look, but using data from the period 2007-2011 (I.e. data used in the report by Clarke & Liley 2013), Map 4 shows some example buffers. In this map the second buffer is drawn at 1500m from 500m cells that held five nests or more over the period 2007-2011.
- 5.24 Initial, informal discussion with RSPB and Natural England indicates support for the continued use of the two buffer approach, but the need to include up to date data. The RSPB has advised that new data, up to and including 2015 survey information, will be available in the near future. At present we are not clear as to the extent of that data and the degree of coverage. Additional information from landowners etc., may be required to gain a full picture. It would be beneficial to try to achieve the most comprehensive data set possible to inform the mapping of the buffer zone. Obtaining these data and plotting the relevant maps should therefore be a priority for the next iteration of the local plan. This section of the appropriate assessment will be updated once the more up to date stone curlew distribution data is available. Further recommendations for ENV 3 policy wording will also be made, and those recommendations will have regard for the need to reference the agricultural buildings protocol, once it is finalised.

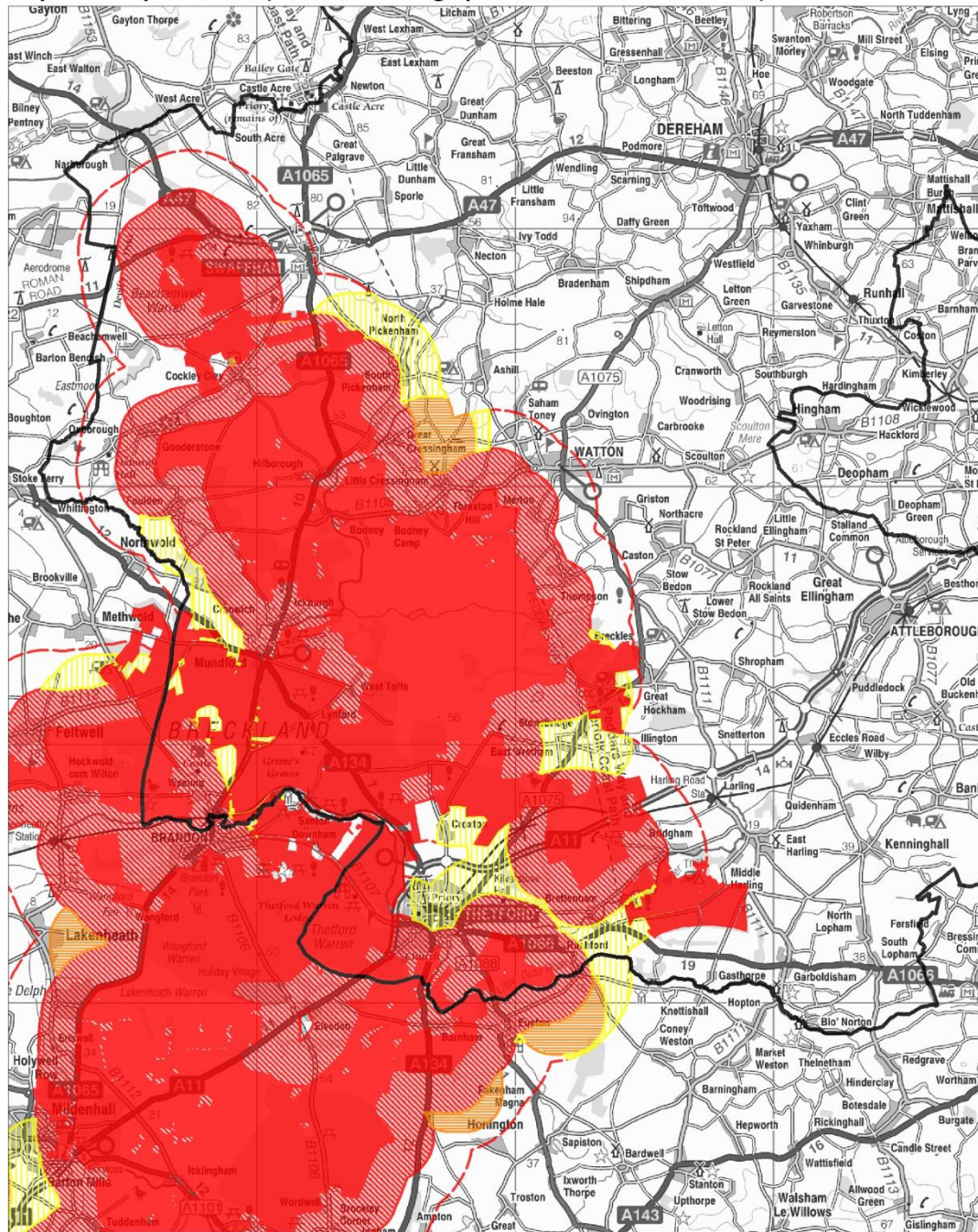
Map 3: Buffers from Core Strategy



- Breckland District
- 1500m from SPA (with stone curlews)
- SPA
- Second buffer: 1500m from areas outside SPA with stone curlews (5+ nests 1995-20)
- Approximate area of suitable soils

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Map 4: Example Buffers (not drawn using up to date stone curlew data)



- 1500m from the SPA (parts of SPA with stone curlews)
 - 1500m from 500m cells with incomplete survey coverage 2007-2011
 - 1500m from 500m cells outside SPA with at least 5 nests 2007-2011
 - 3km outer limit
-
- Breckland District
 - SPA

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6. Appropriate Assessment - Urban effects (including recreational disturbance)

- 6.1 By 'urban effects' we refer to a range of impacts such as disturbance to Annex I bird species, eutrophication (e.g. from dog fouling), trampling, increased fire risk, habitat damage from recreational use such as biking, off-road vehicles etc, introduction of alien plants, litter, fly-tipping, predation from cats etc. Proximity to urban centres and high population pressure means these impacts are all exacerbated and as a result particular management measures are often required. Furthermore, with growing urbanisation, sites are at risk of becoming isolated and fragmented, leading to long terms risks of species loss and inability for species to recolonise.
- 6.2 The issues relate to the Breckland SAC and Breckland SPA interest, and also to the Norfolk Valley Fens SAC (see Table 3 for summary). Further background to the issues relating to urban effects can be found in the previous Habitats Regulations Assessment work relating to the Core Strategy and to the Thetford Area Action Plan (Liley *et al.* 2008; Liley & Tyldesley 2011).
- 6.3 We have included disturbance to birds here, rather than as a separate section (in contrast to the previous assessment work, such as the Core Strategy). In setting out a logical appropriate assessment of potential impacts arising from growth in Breckland, the consideration of all urban effects together seems most appropriate.
- 6.4 Within 'urban effects' we have not included direct impacts of the built environment for Annex I birds, this is addressed in the previous section. Also closely linked are air quality and hydrological issues such as run-off; these are considered as subsequent appropriate assessment sections.

Table 3: Summary of urban effects and relevance to particular European sites

Breckland SAC	Breckland SPA	Norfolk Valley Fens
Eutrophication (e.g. dog fouling)	Predation from cats	Eutrophication (e.g. dog fouling)
Trampling	Disturbance to Annex I birds	Trampling
Increased fire risk	Increased fire risk	Habitat damage from recreation
Habitat damage from recreation		Introduction/spread of alien plants
Introduction/spread of alien plants		Litter/fly tipping
Litter/fly tipping		

Specific development allocations: locations within 400m of relevant European Sites

- 6.5 Emerging options for development locations are shown in the Emerging Site Options document that accompanies the Preferred Directions document of the Local Plan, and are also shown in Map 2 within this report (GIS data provided to Footprint Ecology in September 2015). Sites have been classified by Breckland Council as reasonable and unreasonable options (but all remain options and are mapped) following a Strategic Housing Land Availability Assessment ('SHLAA') and the initial sustainability appraisal of sites. The process by which these locations are assessed by the Council is iterative and

consideration of that information here represents a snapshot at the time of this Habitats Regulations Assessment.

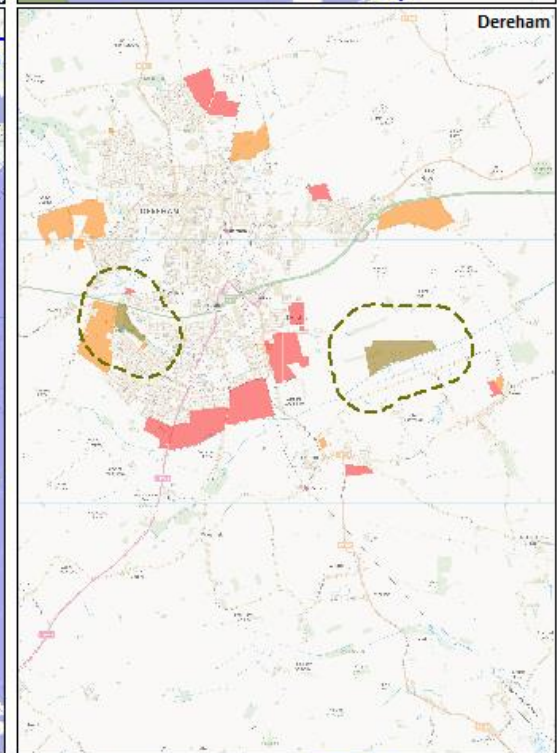
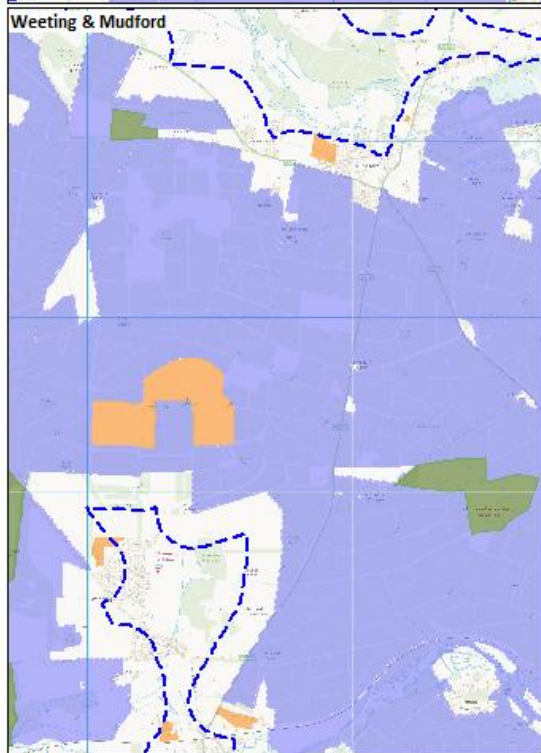
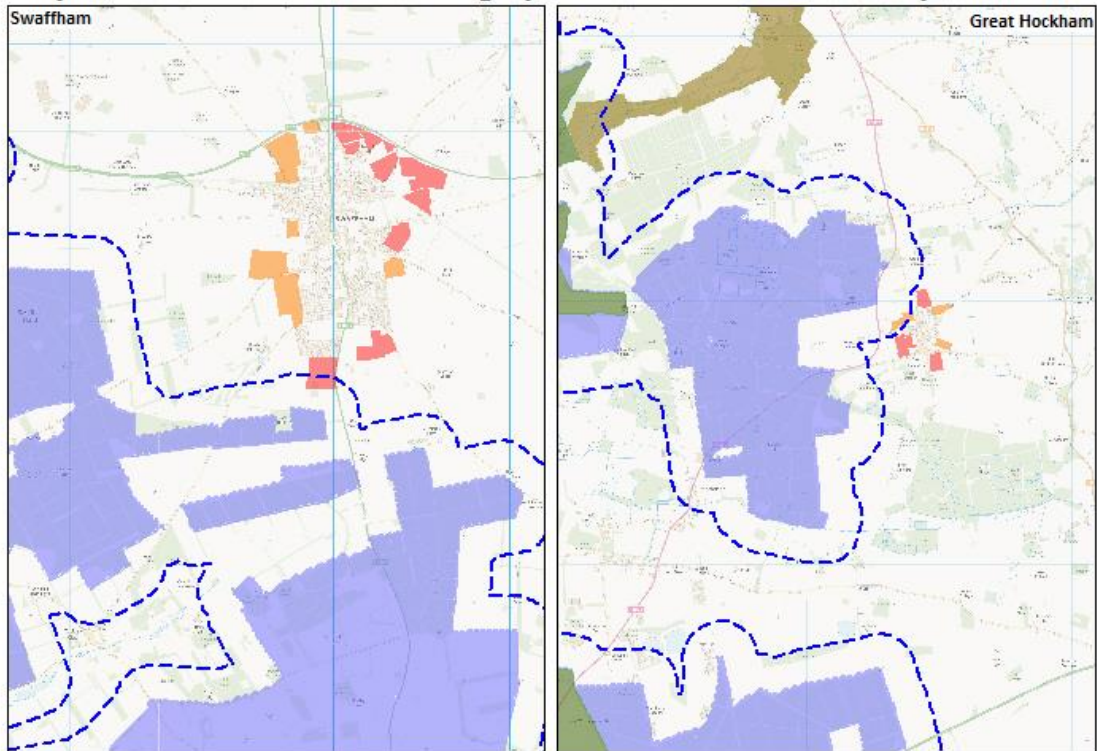
- 6.6 The appropriate assessment of a plan should inform the directions that are taken forward to the final plan, and assist in the de-selection of options that pose risks to European sites, where more suitable alternatives are available. In assessing the risk of urban effects arising from the range of housing sites currently proposed by the draft preferred options, recommendations are therefore made for removing potential sites that pose risks that may be difficult to mitigate for. Given that there are currently a range of sites being considered, and some will be rejected due to their poor suitability as identified by Sustainability Appraisal, recommendations here will give weight to the choices made regarding retention or rejection of possible allocations. If options posing a risk are not removed, it will be necessary to undertake further in-depth analysis of potential impacts. This may have implications for proposing the right number of sites in the right locations if further appropriate assessment work deems a retained option un-implementable without adverse effects.
- 6.7 Using the map data from Map 2 it is possible to check whether any of the directions for development lie adjacent to the relevant European sites. This provides a means of identifying sites of particular concern. We have identified sites within 400m of relevant European site boundaries. The choice of 400m is a pragmatic one. A zone of 400m has been used in other areas (for example the East Devon Pebblebed Heaths, the Dorset Heaths and the Thames Basin), with the 400m selected as a distance at which the impacts from built development, and some urban effects cannot be mitigated for. The use of a 400m distance is also referred to in the Breckland Core Strategy⁴ and discussed within both the Core Strategy and Thetford Area Action Plan Habitats Regulations Assessments (Liley *et al.* 2008; Liley & Tyldesley 2011). Development options beyond 400m may also have impacts through urban effects, but 400m is a useful measure to identify locations where development may be unable to proceed and where particular concerns may be triggered.
- 6.8 We found no development options within 400m of the Breckland SAC but did identify locations within 400m of the Breckland SPA and the Norfolk Valley Fens SAC. These locations are listed in Table 4 and some key areas are shown in Map 5. It can be seen that two sites are of particular concern in that they are classified as reasonable alternatives and are within 400m of relevant European sites. These are a site in Swaffham with capacity for 292 dwellings that lies within 400m of the Breckland SPA and a site in Dereham with a capacity for 21 houses that is within 400m of the Norfolk Valley Fens SAC.

⁴ See paras 2.48,

Table 4: Sites within 400m of either the Breckland SAC, Breckland SPA or the Norfolk Valley Fens SAC. For discussion see main text. Shading highlights sites were initially classified as reasonable alternatives (light green) or unreasonable alternatives (grey) in the initial classification of sites by Breckland Council.

Settlement	Site name	capacity	within 400m Breckland SPA	within400m N Valley Fens SAC
Swaffham	Land west of Brandon Road	292	✓	
Hockham	Land adjacent to Manor Collage	10	✓	
Hockham	Land behind 1-9 Watton Road	23	✓	
Mundford	Land adj 2 Green Lane	5	✓	
Mundford	Land west of West Hall Drive	85	✓	
Hockham	Land south and east of Manor Cottage	9	✓	
Weeting	Childerhouse Lodge Farms	87	✓	
Weeting	Land at Field Cottage	1850	✓	
Mundford	Land north of Bracken Rise	30	✓	
Weeting	Corus, Fengate Grove	56	✓	
Weeting	Milbank Floors Ltd Factory Development	99	✓	
Dereham	Land adjacent to Crane Close	21		✓
Scarning	Land east of The Broadway	28		✓
Scarning	Land south of Fen Road	100		✓
Scarning	Land at junction of Fen Rd and The Broadway	11		✓
Scarning	Land east of The Broadway	224		✓
Scarning	Land east of The Broadway	72		✓
Scarning	Land east of The Broadway	54		✓
Dereham	Land off Stone Road	6		✓

Map 5: Selected areas: housing options in relation to European sites



SACs

- Breckland
- Norfolk Valley Fens
- River Wensum
- Roydon Common & Dersingham Bog
- Waveney & Little Ouse Valley Fens
- Winterton-Horsey Dunes

SPAs (only areas outside SACs shown)

- Breckland

Housing elements from the Plan

- Reasonable Alternative
- Unreasonable Alternative



400m Norfolk Valley Fens

400m Breckland SPA

- 6.9 The above checks highlight that a range of the ‘unreasonable alternatives’ are in locations that are particularly close to the relevant SPA/SAC sites. Given that these are the less favoured ‘unreasonable alternatives’ that fall below the reasonable alternatives in terms of their suitability (in light of Sustainability Appraisal), it is suggested that their location in proximity to European sites adds further weight to their unsuitability in comparison with the reasonable sites and should be dropped from future versions of the plan. If this is undertaken, there is no need for further consideration of their potential impacts.
- 6.10 With regard to the two ‘reasonable alternative’ sites that lie within 400m of relevant European sites, from Map 5 it can be seen that the Swaffham development option lying due south of the town would be well within 400m of the SPA. The SPA here consists of blocks of plantation that support breeding nightjar and woodlark. The forestry will be managed on a rotational basis, meaning different areas become suitable for use by the birds (when felled) over time. Some blocks have public access. Urban effects would include cat predation as both nightjars and woodlarks are ground nesting species (see Floyd, L & Underhill-Day, J C 2013 for review). It is apparent that there are no physical barriers such as open water which may deter cats.
- 6.11 Disturbance from recreation, such as dog walking may also be relevant (Murison 2002; Mallord *et al.* 2007), and may not be possible to mitigate for at this close distance. Increased fire incidence may also be a factor. It is therefore suggested that the area south of Swaffham is one where adverse effects on the integrity of the SPA cannot be avoided or mitigated for, due to the immediate proximity of potential development. It is recommended that this housing option is removed.
- 6.12 Development to the north-east of Swaffham would raise little concern with cat predation given that the town would separate the development locations from the SPA (cats are territorial and location of housing in relation to the site of concern seems an important factor e.g. Morgan *et al.* 2009). Mitigation for recreational impacts at this distance would be more likely to be possible for development in the north-eastern part of the town. Visitor survey results from the current (Norfolk-wide) survey work will help inform options.
- 6.13 At Dereham, Scarning Fen lies to the west of the town, just south of the A47. The site is managed by the Norfolk Wildlife Trust and is open to the public. There is roadside parking to the west of the site and access from a public footpath which crosses the eastern part of the site. While the Wildlife Trust cannot control use of the Public Right of Way, they do operate a ‘no dogs’ policy on the rest of the site. Urban effects here would include dog fouling and damage to the habitat from trampling etc. Just north of the A47 there is a ‘reasonable alternative’ site. This location is very close to the SAC but foot access is restricted by the A47 (there is no underpass). Any development here would need careful consideration/checks at project level, but assuming foot access is limited by the A47, impacts relating to access for this location can be discounted.
- 6.14 The ‘unreasonable alternatives’ shown around the Scaring Fen site include a large area of development directly to the west on arable land which would result in the site being

completely surrounded by urban development. As explained above, the additional concerns relating potential European site impacts should further render unreasonable alternatives unviable and should be removed from the plan. This unreasonable alternative is singularly mentioned here as it relates to an option that could accommodate a good number of houses, yet its location is such that it is likely to lead to multiple risks to the European site. Allocations that lead to encircling European site fragments with development should be avoided.

Locations beyond 400m/cumulative impact

- 6.15 Locations within 400m of the relevant European sites are ones adverse effects on integrity cannot be ruled out and mitigation is likely to be difficult or impossible to deliver. In accordance with the extensive evidence base supporting previous Habitats Regulations assessment work, and indeed that relating to other locations around the country, it is advised that beyond 400m urban effects may still occur but mitigation should be possible.
- 6.16 The scale of development within the Local Plan is currently proposed at 14,925 new dwellings, representing an increase of around 25% in the number of dwellings within Breckland District⁵. This level of growth is marked and will occur in a relatively short time period. Previous assessment work (Liley *et al.* 2008) reviewed visitor survey results from Breckland and highlighted the large and relatively contiguous area of forest and heath with current access and the relatively small human population resident in Breckland. This represents a marked contrast to some other areas such as the Thames Basin Heaths and Dorset Heaths where fragments of heathland occur surrounded by housing and urban environments. It is therefore perhaps not surprising that among the range of studies of nightjar or woodlark and disturbance in the UK, work from Thetford Forest is one of the few studies to have found no current impacts from recreation (Table 5).
- 6.17 The scale of change within Breckland is such that there will be growing pressure for recreation on Thetford Forest and at some point in the future it is possible that impacts may occur. It is important to remember that the Council, as a competent authority under the Habitats Regulations, should seek to put in place measures to maintain sites and prevent their decline. To allow decline and then seek to rectify it is not in accordance with the objectives of the legislation and the purpose of the European site network. Long term monitoring of recreation levels and potential for urban effects is therefore relevant and important for Breckland Council to establish as an early warning mechanism, to ensure that site integrity continues to be maintained and that conservation objectives for the site are not affected.
- 6.18 In line with previous assessment work and the Breckland Core Strategy, it needs to be recognised that at a point where levels of access are sufficient to raise concerns, prior to any actual deterioration, mitigation will need to be secured for development. Mitigation would include measures to keep dogs on leads, raise awareness among

⁵ Postcode data from February 2015 indicates around 59,000 residential properties within Breckland District

visitors of the conservation importance of sites they are visiting and to provide alternative (less sensitive) routes as relevant. Further discussion is provided in Liley *et al* (2008)– see sections 12.3 and 12.4. Previous planning policy in the Core Strategy committed to recreation management, monitoring and mitigation in collaboration with partners. It is recommended that these commitments are reiterated again in the new emerging Local Plan, and that clarity is given as to the approach to be taken for monitoring, relevant partners involved, and importantly, when that will be implemented.

Table 5: Key references relating to impacts of disturbance on nightjar and woodlark in the UK. Table lists all studies we are aware of that have looked for impacts of recreation. Study types are: F-fieldwork involving bird breeding success; D-entirely desk based; d – reliant on bird data from other sources (such as national survey); P-peer reviewed journal;

Study Type	Reference(s)	Species	Location	Key findings	Notes
D, P	Liley & Clarke (2003b)	Nightjar	Dorset Heaths	Nightjar density negatively correlated with level of housing around sites. Recreation implied as cause.	1992 national survey data analysed alongside housing/urban data in GIS
F,P	Murison (2002); see also Langston et al. (2007a)	Nightjar	Dorset Heaths	Nests which failed were significantly closer to paths, tended to be closer to the main points of access to heaths, in areas with higher footpath density, in areas with notably higher levels of use and in more sparsely vegetated locations.	Data from multiple sites in a single year. 47 nests found.
F, P	Woodfield & Langston (2004); see also Langston et al. (2007a)	Nightjar	Dorset Heaths	Video cameras deployed in follow-up to Murison (2002) study. Focus on heavily visited/urban heaths. Cameras recorded just one instance of predation (that of an egg by a crow), and two instances of the incubating bird being flushed by a dog, once from an egg and once from a chick - neither event preventing fledging.	Early use of nest camera technology and few unsuccessful nests recorded
D	Clarke <i>et al.</i> (2008)	Nightjar	Dorset and Thames Basin Heaths	Identifies sites with particularly low numbers of nightjars and seeks to explain why; visitor predictions and numbers of houses around heaths used to explore possible reasons for low numbers of nightjars. Results indicated that, in the absence of development/visitors, the Dorset and Thames Basin Heaths would support around 14% more nightjars.	Different analysis using data from 2006 study.
D	Liley <i>et al.</i> (2006a)	Nightjar	Dorset Heaths and Thames Basin Heaths	Nightjar densities lower on sites surrounded by more housing; nightjar densities lower in areas of predicted higher disturbance.	2004 nightjar data used in repeat of 2003 paper plus model generated from separate visitor study.
F, P	Lowe <i>et al.</i> (2014)	Nightjar	Sherwood Forest	Lower density of nightjars in areas of high	Multiple years, though comparison only

Study Type	Reference(s)	Species	Location	Key findings	Notes
				disturbance; no differences in breeding success between two areas.	of two different areas
F	Dolman (2010)	Nightjar, Woodlark	Breckland (Thetford Forest)	Nest cameras used to monitor woodlark (147 nests) and nightjar nests (44 nests). No evidence of effects of recreation on breeding success for either species. Cameras did record single predation events by a domestic dog and a domestic cat.	Data from multiple years and large sample size. Relatively low levels of access, plantation woodland rather than heathland.
d	Dolman & Morrison (2012)	Nightjar, Woodlark	Breckland (Thetford Forest)	No effect of urban development on nightjar or woodlark density	Relatively rural area with little development
D	Clarke <i>et al.</i> (2010)	Nightjar, Woodlark	Ashdown Forest	Simple model of visitor recreation pressure developed for whole SPA. Bird densities compared in areas of high and low disturbance. No effect of recreation found on distribution.	Study based on national bird survey data and visitor data from separate visitor survey.
d	Cruickshanks <i>et al.</i> (2010)	Nightjar.	Suffolk Sandlings	Some indication that nightjar distribution was related to intensity of visitor use.	Relatively small sample size for birds
D	Sharp <i>et al.</i> (2008)	Nightjar, Woodlark	New Forest	Some slight evidence that areas of particularly high visitor pressure are avoided by both species	Wide ranging report with some analysis of bird distributions in relation to modelled access levels. Visitor model relatively simplistic.

Attleborough & Thetford: key settlements

- 6.19 The two key settlements within the Local Plan are the main focus for development, and are promoted as sustainable urban extensions to the existing towns. At Attleborough the urban extension to the south of the town will mean a marked increase in the local population. Relevant to the extension is Swangey Fen, a component part of the Norfolk Valley Fens SAC that lies over a kilometre to the west of the town. The Fen has no public access and is well away from any footpaths or roads, and will be separated from the urban extension by the A11. It is advised that impacts from recreation can therefore be ruled out.
- 6.20 At Thetford, urban effects were discussed within the Thetford Area Action Plan (paragraphs 12.2 – 12.5) and addressed in Policy TH9. These set out the need for careful monitoring and mitigation to address urban effects around Thetford. Policy TH9 is not being rolled forward into the new plan and instead is replaced by ENV02 and ENV03, which currently do not contain reference to urban effects.
- 6.21 Within and around Thetford there are a number of European sites where previous assessment work has raised concerns in relation to urban effects. These include Bridgham and Brettenham Heaths, Thetford Golf Course and Marsh, Barnham Cross Common, Thetford Heath and East Wretham (recreation impacts). All are component parts of both the Breckland SAC and the Breckland SPA and lie within or very close to Thetford. Development at Thetford is focussed at the urban extension which has been subject to detailed assessment work (Liley & King 2014) and mitigation measures incorporated through a S106 agreement. Previous planning policy committed to a developer funded approach to urban heaths management and the provision of alternative green spaces. Slow progression of mitigation measures for the urban heaths in and around Thetford in accordance with the Core Strategy and Thetford Area Action Plan led to some difficulties in assessing impacts from the urban extension and appropriate ways to secure the mitigation required in the absence of a pre-established approach.
- 6.22 One site of particular concern has been Barnham Cross Common, and recent discussions with Natural England have provided additional information on the measures being implemented to try to restore this site. Following concerns over the loss of plant species and long term decline in the conservation interest at the site, Plantlife are now leading a conservation management programme, funded by the Heritage Lottery Fund (HLF) as part of Plantlife's Breaking New Ground Project. Funding runs through to 2017 and work has included producing a plan for the site, an application to the Secretary of State for fencing on the Common to allow grazing to be reinstated and management works to create early successional habitats required by the key plant species. The site is also now in a Higher Level Stewardship agreement with Natural England that sees funding for management works through to 2024.
- 6.23 Of additional relevance in relation to impacts of development at Thetford is the Thetford Loops, a walking and cycling route that links the town to the Forest. Policy TH12 from the Thetford Area Action Plan is one of the policies that are proposed to be

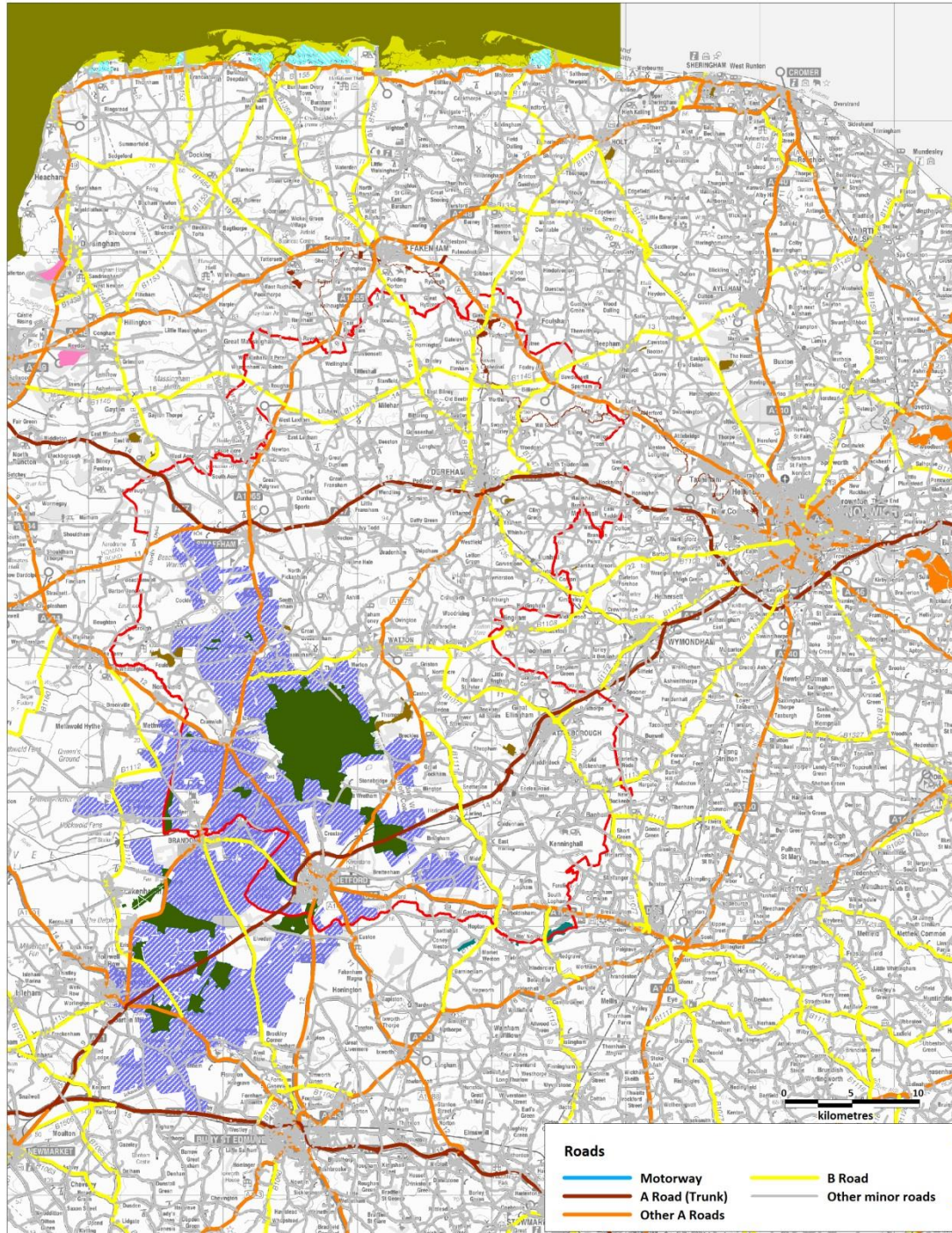
rolled over into the current plan. It will be important that where the Thetford Loops are discussed in policy when brought into the Local Plan, the need to carefully manage the visitor flows in sensitive areas and ensure no adverse effects on the European sites is also recognised.

- 6.24 Given the scale of development in Thetford we suggest that the Local Plan continues to commit to effective early warning monitoring to ensure any issues from urban effects and recreation around Thetford are identified early. Additionally, the mitigation funding linked to the Urban Extension needs to be carefully planned, and targeted where most effective, on the basis of good information and evidence. It will be important to ensure that conservation management at Barnham Cross to resolve urban effects is secured in the long term. These issues remain from previous Habitats Regulations Assessment recommendations and commitments in the Core Strategy and Thetford Area Action Plan.
- 6.25 These recommendations should be tied into the implementation of the previous planning policy commitment to a developer funded approach to urban heaths management and the provision of alternative green spaces. This commitment needs to be reiterated in the new Local Plan, and as suggested in relation to the general approach to mitigating for urban effects, the urban heaths commitment needs to provide clarity on how and when this will be implemented.
- 6.26 Additionally, whilst the emerging Local Plan currently does not refer to specific development for tourism, it is a key part of the plan's vision and objectives, being identified as an important part of the Brecks economy and a criteria based policy is included at E 04. Mitigation measures should adequately accommodate urban impacts from tourism in addition to residents, but as this assessment progresses there will be a continued check of policies to highlight any risks specifically relating to tourism. As above, Breckland Council should be aware of any initiatives that might pose a risk to European sites.

7. Appropriate Assessment – Traffic and Road Improvements

- 7.1 The emerging preferred options document identifies a number of new roads and road improvement requirements associated with the proposed growth. These are the new Attleborough link road to serve the proposed sustainable urban extension, improvements to the A47, junction improvements to serve the Thetford sustainable urban extension and with the promotion of A11 corridor development there may also be additional junctions and slip-roads. In addition to these specific improvements, the level of growth proposed for the District has the potential to lead to additional traffic across the District. Furthermore, the general changes in road use are complicated by the presence of the A11 through the District, which is an important route for traffic to and from cities outside Breckland, mainly London, Cambridge and Norwich, thus bringing potential road traffic impacts from sources outside the District and therefore difficult to assess. A check should be made to determine whether any data is available for the A11 with environmental health staff within the council.
- 7.2 The Northern Distributor Road (NDR), which whilst outside the district, is referred to within the Preferred Options document. The Local Impact Report produced in 2014 highlights that although the road improvements are outside the Breckland District, there is the potential for some indirect ‘knock-on’ effects within the District in terms of increased traffic linking to and from the NDR. The Local Impact Report requires a number of traffic management measures to be implemented by Breckland Council. It is therefore suggested that where the Local Plan makes reference to the NDR, it should also flag the measures that the council is implementing to ameliorate traffic issues.
- 7.3 Traffic increases and changes in road use that increase congestion can lead to air quality deterioration that can affect sensitive interest features within European sites. New road and junction improvements in close proximity to European sites can result in land take, either from the European site itself or from habitat in close proximity that either supports or buffers European site interest features.
- 7.4 Roads in and around the Breckland District are shown in relation to European sites in Map 6.

Map 6: Roads and European Sites



SACs

- Breckland
- Norfolk Valley Fens
- North Norfolk Coast
- River Wensum
- Roydon Common & Dersingham Bog
- The Broads
- The Wash & North Norfolk Coast
- Waveney & Little Ouse Valley Fens
- Winterton-Horsey Dunes

SPAs

- (only areas outside SACs shown)
- Breckland
 - N Norfolk Coast
 - Breckland District

- 7.5 Heathland habitats are vulnerable to atmospheric pollution, and in particular the addition of nitrogen (Power *et al.* 1995; Bobbink, Hornung & Roelofs 1998; Power, Ashmore & Cousins 1998; Barker *et al.* 2004; Terry *et al.* 2004). The severity of these impacts depends on abiotic conditions. The most important effects are the accumulation of nitrogenous compounds resulting in enhanced availability of nitrate or ammonium, soil-mediated effects of acidification and increased susceptibility to secondary stress factors. Long-term nitrogen enrichment results in increased availability of nitrogen leading to competitive exclusion of characteristic species by more nitrophilic plants.
- 7.6 Breckland heaths may be particularly sensitive. There have been dramatic and rapid contractions in the distribution and abundance of Breckland lichen species and one species *Buellia asterella* is now thought extinct. The cause of this decline is a result of the previously open grassland having closed up due to the spread of higher plants and bryophytes denying the lichens the calcareous mineral soil they require as a substrate. Increased aerial inputs of nitrogen are chiefly responsible for the sward closure (Gilbert 2002).
- 7.7 Air quality impacts may also be relevant to the Norfolk Valley Fens SAC but there is less evidence or information on potential pollution pathways than there is for the Breckland heaths. Fertilization and nutrient budget studies suggest that most fens have an intermediate sensitivity to nitrogen enrichment (see Bobbink, Hornung & Roelofs 1998 for discussion). Experimental studies in the Netherlands (cited in Bobbink, Hornung & Roelofs 1998) have shown that nitrogen addition has an impact on some sites, resulting in loss of species diversity, whereas on another site (intensively managed through annual hay cutting) negligible effects on plant productivity and diversity were recorded. Such findings would suggest that any concerns relating to air quality and the Norfolk Valley Fens SAC may be resolved through monitoring and changes to the management of the SAC if necessary. It is recommended that Breckland Council discusses with Natural England, the Wildlife Trust and any other relevant partners to gain a common understanding of current monitoring, access to monitoring data and how any monitoring gaps could be fulfilled.
- 7.8 There are studies that demonstrate negative effects of roads on the SPA interest of Breckland SPA. Studies of stone curlews (Day 2003; Sharp *et al.* 2008; Clarke, Sharp & Liley 2009; Clarke & Liley 2013; Clarke *et al.* 2013) have shown a negative avoidance of roads. Sharp *et al.* compared individual roads and found that, in the majority of cases the same positive relationship between stone curlew nest density and distance from a road was present. The A11, a trunk road, and the A1065, a non-trunk road, both have similar areas of habitat available within similar distance bands, and both are avoided by nesting stone curlews, but the densities are far greater around the A1065 than the A11, and the avoidance only is observed in the nearest 500m for the A1065 while it is observed up to 3 km for the A11. While there are a number of other factors which influence the choice of nest location by stone curlew, such as the surrounding habitat quality, settlements and field size, the A11, which is likely to have heavier traffic, appears to have a greater impact upon the spatial distribution of stone curlew nests

than the A1065, which is likely to have lighter traffic. Sharp *et al.* suggest that there is a negative impact of trunk roads on stone curlew nest density on arable land up to a distance of at least 1000m, and maybe up to 2000m. For non-trunk A roads there is also a negative impact up to a distance of 500m. Any new road infrastructure, if occurring close to suitable stone curlew habitat is therefore likely to result in an impact. Increases in road traffic volumes would also be of concern.

- 7.9 The more recent work on stone curlew (Clarke & Liley 2013), used more up to date data on stone curlew nest distributions and found that, regardless of the amount of buildings, nest density was always lowest in areas within 0.5km of the nearest trunk road and highest in areas furthest from trunk roads. While there were clear effects for the impacts of trunk roads there was not consistent pattern if data on all roads were used, indicating the avoidance is particularly associated with the busier roads.
- 7.10 It is therefore recommended that in planning for infrastructure provision to support the growth within the Local Plan the proximity of roads to core stone curlew habitat is considered. Currently the draft Local Plan at preferred options has an incomplete section relating to infrastructure provision. It refers to an Infrastructure Development Plan, which will relate to the infrastructure necessary to support the level of growth set out within the Local Plan. At this draft stage it is not clear whether this will for part of the Local Plan policy, or be part of other planning documents such as a Local transport Plan or Infrastructure Delivery Plan, both of which are mentioned in draft text within the Local Plan. This policy area will be revisited in future iterations of the Habitats Regulations Assessment.
- 7.11 This aspect of the appropriate assessment will therefore be revisited once the infrastructure provision section of the Local Plan is progressed and the links between the Local Plan and other planning documents relating to infrastructure are understood.
- 7.12 The Attleborough sustainable urban extension is proposed within the emerging Local Plan, to provide 4,000 new homes, with a resultant need for a link road from the A11 to serve this new settlement area. An Environmental Impact Scoping Assessment has recently been produced in March 2015, for which the Council has highlighted the need to have regard for air quality impacts arising from the proposal. As the full Environmental Statement for the Attleborough sustainable urban extension will be progressed alongside the continued preparation of the Local Plan, future iterations of this Habitats Regulations Assessment will need to incorporate any findings in relation to air quality impacts on European sites.
- 7.13 The District currently does not have any formal 'Air Quality Management Areas' but the environmental health department at the council has highlighted that Swaffham town centre is being closely monitored as it is consistently close to the threshold for which formal management would be instigated. The reasons for this concern need further investigation, in order to check whether additional growth at Swaffham will add to this problem, and how that might affect Breckland SPA, the closest European site to the town.

8. Appropriate Assessment - Water

- 8.1 Issues relating to water that pose potential risks to European sites include flood risk, deterioration of water quality, reduced water resources, alterations to river flow, and changes to hydrological processes.
- 8.2 Previous Habitats Regulations Assessment work for the documents within the Local Development Framework identified the need for precautionary progression of housing delivery up to the previous plan period end of 2026, to ensure that water issues did not pose a risk to European sites. The Core Strategy provided this security in policy wording that required a stepwise approach to bringing housing forward, in line with gathering certainty from new evidence over time that is necessary to demonstrate that the full quantum of housing could be delivered without adverse effects.
- 8.3 Sites of particular relevance are:
- Breckland SAC (includes the fluctuating water bodies fed by ground water from the chalk aquifer, water availability will be critical for these features)
 - Norfolk Valley Fens SAC (water availability, flooding, water quality and changes to hydrology have the potential to fundamentally affect these relatively isolated fen sites)
 - River Wensum SAC (water availability, flooding, water quality and changes to hydrology have the potential to fundamentally affect the interest of the river)

Water Cycle Study and Strategic Flood Risk Assessment

- 8.4 Evidence to support the previous Habitats Regulations Assessment includes the Breckland Water Cycle Study. This was produced in 2 phases, with a Phase 1 Outline Study undertaken 2008, and then a Phase 2 detailed study was completed in May 2010. The Water Cycle Study work set out the detailed solutions required for delivering growth for the specific development allocations, including detailed information on the cost of the infrastructure and timing of the required works necessary to deliver sustainable water supply and waste water treatment. Specific requirements, such as the need for a new mains sewer for Thetford, were identified.
- 8.5 Now that the Local Development Framework has partially delivered its housing target, and a new Local Plan is being prepared, it is necessary to revisit the available evidence to determine whether the new quantum and pace of growth proposed by the new Local Plan can be sustained in terms of water supply and water treatment and management, without risking adverse effects on any European site, or without impeding the delivery of conservation objectives to restore any European site.
- 8.6 A new Water Cycle Study and Strategic Flood Risk Assessment are both currently in preparation, to support the new Local Plan. At this time of producing this Habitats Regulations Assessment of the draft Preferred Directions document, the Water Cycle Study and Strategic Flood Risk Assessment were not yet finalised. This section of the

Habitats Regulations Assessment will therefore be updated at the Submission stage of plan making, when these key pieces of evidence become available.

- 8.7 It is understood that the Water Cycle Study will cover the potential implications of increased discharge of treated water from waste water treatment works, in terms of impacts on flow and water quality. It is further understood that the study will cover the implications of additional supply demand from the proposed quantum of housing over the plan period. These matters will require liaison with Anglian Water to secure the necessary information to support any conclusions drawn.

Risks from proposed housing allocations

- 8.8 The Norfolk Valley Fens SAC is a European site made up of a number of isolated fen fragments. As shown on Map 2 earlier in this report, there are a number of SAC fragments in close proximity to potential housing allocations (as previously described, these are the reasonable and un-reasonable alternatives). Of particular note is potential housing allocations at Attleborough and Dereham. Some of these sites have also been discussed in earlier sections of the appropriate assessment in relation to urban effects.
- 8.9 Natural England has advised Footprint Ecology that there are potential concerns with regard to isolation, run-off and water abstraction in relation to the Norfolk Valley Fens SAC, and run off in particular is a focus of Natural England's programme of site improvements. These issues therefore need to be included within this appropriate assessment section when the key evidence documents currently being progressed are available. It will be important to consider hydrological connections within the catchment of each fen, as part of the Water Cycle Study. Later iterations of this assessment will ensure join up and read across to the study.
- 8.10 As described in previous appropriate assessment sections of this report, the proposed sustainable urban extension at Attleborough has recently been the subject of an Environmental Impact Assessment Scoping report in March 2015, which sets out the in-depth assessment that will be undertaken to assess the environmental impacts of the proposed large urban extension at this location. The scoping report identifies the need to consider both ecological and hydrological impacts of the proposal. The full Environmental Statement is likely to be progressing alongside the Local Plan. It is therefore imperative that the Environment Statement includes consideration of potential effects on European sites in order to inform future iterations of this Habitats Regulations Assessment.

9. Summary and Next Steps

- 9.1 As explained in the introduction to this report, this Habitats Regulations Assessment remains incomplete until the Local Plan is finalised. The current assessment is supported by a background and review of evidence document, and has now progressed to the Preferred Directions stage of the emerging Local Plan, which is now the subject of public consultation.
- 9.2 The screening for likely significant effects, explained in Section 3 and recorded in the screening table at Appendix 4, will be revisited as the plan is further refined, to check that recommendations to avoid impacts on European sites have been incorporated into the plan. Sections 4 onwards provide the more detailed appropriate assessment where issues raised at the screening stage required further consideration and reference to available evidence. This part of the Habitats Regulations Assessment begins to identify key mitigation measures that will need to be embedded in the delivery of the plan and development management processes. However, at this point in time there are remaining information gaps, and these key pieces of evidence will be reviewed at the next iteration of this assessment. At this stage, the assessment cannot therefore provide a full set of mitigation measures to give certainty that adverse effects arising from the Local Plan can be ruled out. Rather the appropriate assessment should be considered to be still in progression.
- 9.3 Key information gaps include the Water Cycle Study and Strategic Flood Risk Assessment and stone curlew data from 2011 to 2015. Natural England and RSPB have advised that the assessment should be informed by more up to date stone curlew data.
- 9.4 It is therefore not possible to decisively state whether the emerging Local Plan will be compliant with the Habitats Regulations in its final form, and this is to be expected. However, current information and analysis has allowed positive progression towards being able to draw a legislation compliant conclusion, and the assessment will continue to seek solutions to achieve this as the information gaps are filled and the plan develops towards its Submission for Examination.

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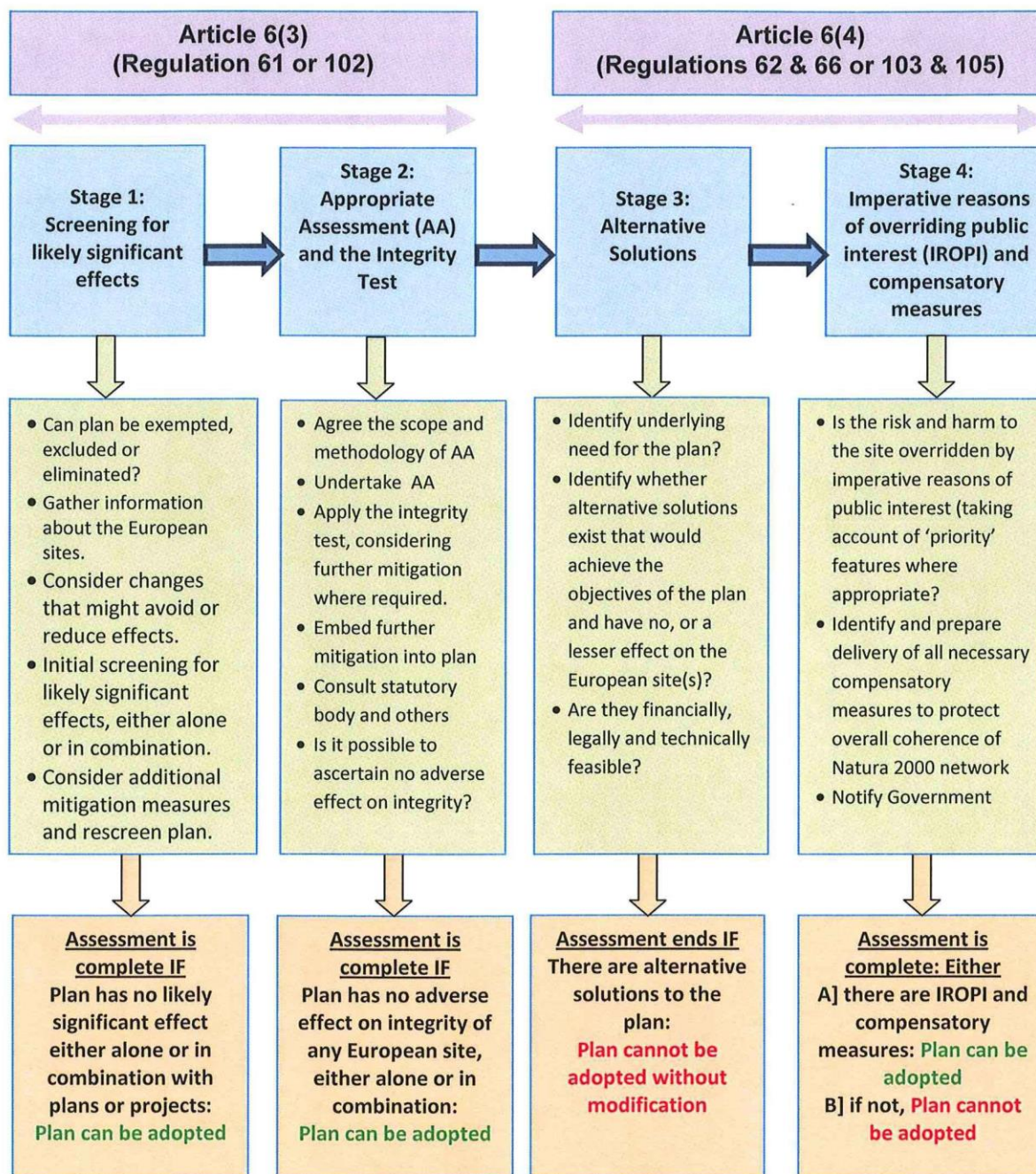
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11. Appendix 1 - The Habitats Regulations Assessment Process

- 11.1 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2010, as amended, which are commonly referred to as the 'Habitats Regulations.' Recent amendments to the Habitats Regulations were made in 2012. The recent amendments do not substantially affect the principles of European site assessment as defined by the 2010 Regulations, the focus of this report or the previous Habitats Regulations Assessment work undertaken for Breckland, upon which some of this Habitats Regulations Assessment relies.
- 11.2 The Habitats Regulations are in place to transpose European legislation set out within the Habitats Directive (Council Directive 92/43/EEC), which affords protection to plants, animals and habitats that are rare or vulnerable in a European context, and the Birds Directive (Council Directive 2009/147/EC), which originally came into force in 1979, and which protects rare and vulnerable birds and their habitats. These key pieces of European legislation seek to protect, conserve and restore habitats and species that are of utmost conservation importance and concern across Europe. Although the Habitats Regulations transpose the European legislation into domestic legislation, the European legislation still directly applies, and in some instances it is better to look to the parent Directives to clarify particular duties and re-affirm the overarching purpose of the legislation.
- 11.3 European sites include Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) classified under the Birds Directive. The suite of European sites includes those in the marine environment as well as terrestrial, freshwater and coastal sites. European sites have the benefit of the highest level of legislative protection for biodiversity. Member states have specific duties in terms of avoiding deterioration of habitats and species for which sites are designated or classified, and stringent tests have to be met before plans and projects can be permitted, with a precautionary approach embedded in the legislation, i.e. it is necessary to demonstrate that impacts will not occur, rather than they will. The overarching objective is to maintain sites and their interest features in an ecologically robust and viable state, able to sustain and thrive into the long term, with adequate resilience against natural influences. Where sites are not achieving their potential, the focus should be on restoration.
- 11.4 The UK is also a contracting party to the Ramsar Convention, which is a global convention to protect wetlands of international importance, especially those wetlands utilised as waterfowl habitat. In order to ensure compliance with the requirements of the Convention, the UK Government expects all competent authorities to treat listed Ramsar sites as if they are part of the suite of designated European sites, as a matter of government policy, as set out in Section 118 of the National Planning Policy Framework. Most Ramsar sites are also a SPA or SAC, but the Ramsar features and boundary lines may vary from those for which the site is designated as a SPA or SAC.

- 11.5 It should be noted that in addition to Ramsar sites, the National Planning Policy Framework also requires the legislation to be applied to potential SPAs and possible SACs, and areas identified or required for compensatory measures where previous plans or projects have not been able to rule out adverse effects on site integrity, yet their implementation needs meet the exceptional tests of Regulation 62 of the Habitats Regulations, as described below.
- 11.6 The step by step process of Habitats Regulations Assessment is summarised in the diagram below. Within the Habitats Regulations, local planning authorities, as public bodies, are given specific duties as ‘competent authorities’ with regard to the protection of sites designated or classified for their species and habitats of European importance. Competent authorities are any public body individual holding public office with a statutory remit and function, and the requirements of the legislation apply where the competent authority is undertaking or implementing a plan or project, or authorising others to do so. Regulation 61 of the Habitats Regulations sets out the Habitats Regulations Assessment process for plans and projects, which includes development proposals for which planning permission is sought. Additionally Regulation 102 specifically sets out the process for assessing emerging land use plans.
- 11.7 The step by step approach to Habitats Regulations Assessment is the process by which a competent authority considers any potential impacts on European sites that may arise from a plan or project that they are either undertaking themselves, or permitting an applicant to undertake. The step by step process of assessment can be broken down into the following stages, which should be undertaken in sequence:
- Check that the plan or project is not directly connected with or necessary for the management of the European site
 - Check whether the plan or project is likely to have a significant effect on any European site, from the plan or project alone
 - Check whether the plan or project is likely to have a significant effect on any European site, from the plan or project in-combination with other plans or projects
 - Carry out an Appropriate Assessment
 - Ascertain whether an adverse effect on site integrity can be ruled out
- 11.8 Throughout all stages, there is a continual consideration of the options available to avoid and mitigate any identified potential impacts. For projects, the project proposer may identify potential issues and incorporate particular avoidance measures to the project, which then enables the competent authority to rule out the likelihood of significant effects. A competent authority may however consider that there is a need to undertake further levels of evidence gathering and assessment in order to have certainty, and this is the Appropriate Assessment stage. At this point the competent authority may identify the need to add to or modify the project in order to adequately protect the European site, and these mitigation measures may be added through the imposition of particular restrictions and conditions.

- 11.9 For plans, the stages of Habitats Regulations Assessment are often quite fluid, with the plan normally being prepared by the competent authority itself. This gives the competent authority the opportunity to repeatedly explore options to prevent impacts, refine the plan and rescreen it to demonstrate that all potential risks to European sites have been successfully dealt with.
- 11.10 When preparing a plan, a competent authority may therefore go through a continued assessment as the plan develops, enabling the assessment to inform the development of the plan. For example, a competent authority may choose to pursue an amended or different option where impacts can be avoided, rather than continue to assess an option that has the potential to significantly affect European site interest features.
- 11.11 After completing an assessment a competent authority should only approve a project or give effect to a plan where it can be ascertained that there will not be an adverse effect on the integrity of the European site(s) in question. In order to reach this conclusion, the competent authority may have made changes to the plan, or modified the project with restrictions or conditions, in light of their Appropriate Assessment findings.
- 11.12 Where adverse effects cannot be ruled out, there are further exceptional tests set out in Regulation 62 for plans and projects and in Regulation 103 specifically for land use plans. Exceptionally, a plan or project could be taken forward for imperative reasons of overriding public interest where adverse effects cannot be ruled out and there are no alternative solutions. It should be noted that meeting these tests is a rare occurrence and ordinarily, competent authorities seek to ensure that a plan or project is fully mitigated for, or it does not proceed.
- 11.13 In such circumstances where a competent authority considers that a plan or project should proceed under Regulations 62 or 103, they must notify the relevant Secretary of State. Normally, planning decisions and competent authority duties are then transferred, becoming the responsibility of the Secretary of State, unless on considering the information, the planning authority is directed by the Secretary of State to make their own decision on the plan or project at the local level. The decision maker, whether the Secretary of State or the planning authority, should give full consideration to any proposed 'overriding reasons' for which a plan or project should proceed despite being unable to rule out adverse effects on European site interest features, and ensure that those reasons are in the public interest and are such that they override the potential harm. The decision maker will also need to secure any necessary compensatory measures, to ensure the continued overall coherence of the European site network if such a plan or project is allowed to proceed.



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Figure 3: Outline of the assessment of plans under the Habitat Regulations

12. Appendix 2 – European Site Conservation Objectives

- 12.1 As required by the Directives, 'Conservation Objectives' have been established by Natural England, which should define the required ecologically robust state for each European site interest feature. All sites should be meeting their conservation objectives. When being fully met, each site will be adequately contributing to the overall favourable conservation status of the species or habitat interest feature across its natural range. Where conservation objectives are not being met at a site level, and the interest feature is therefore not contributing to overall favourable conservation status of the species or habitat, plans should be in place for adequate restoration.
- 12.2 Natural England has embarked on a project to renew all European site Conservation Objectives, in order to ensure that they are up to date, comprehensive and easier for developers and consultants to use to inform project level Habitats Regulations Assessments in a consistent way. In 2012, Natural England issued now a set of generic European site Conservation Objectives, which should be applied to each interest feature of each European site. These generic objectives are the first stage in the project to renew conservation objectives, and it is anticipated that the second stage, which is to provide more detailed and site specific information for each site to support the generic objectives, will follow shortly.
- 12.3 The new list of generic Conservation Objectives for each European site include an overarching objective, followed by a list of attributes that are essential for the achievement of the overarching objective. Whilst the generic objectives currently issued are standardised, they are to be applied to each interest feature of each European site, and the application and achievement of those objectives will therefore be site specific and dependant on the nature and characteristics of the site. The second stage, provision of the more supplementary information to underpin these generic objectives, will provide much more site specific information, and this detail will play a fundamental role in informing Habitats Regulations Assessments, and importantly will give greater clarity to what might constitute an adverse effect on a site interest feature.
- 12.4 In the interim, Natural England advises that Habitats Regulations Assessments should use the generic objectives and apply them to the site specific situation. This should be supported by comprehensive and up to date background information relating to the site.
- 12.5 For SPAs the overarching objective is to:
- 12.6 'Avoid the deterioration of the habitats of qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.'
- 12.7 This is achieved by, subject to natural change, maintaining and restoring:

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

12.8 For SACs the overarching objective is to:

'Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.'

12.9 This is achieved by, subject to natural change, maintaining and restoring:

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

12.10 Conservation objectives inform any Habitats Regulations Assessment of a plan or project, by identifying what the interest features for the site should be achieving, and what impacts may be significant for the site in terms of undermining the site's ability to meet its conservation objectives.

13. Appendix 3 - Conservation Interest of European Sites

13.1 The following European sites were screened in the original Habitats Regulations Assessment Work for the Breckland Local Development Framework as those within a 20km radius that could potentially be affected by the implementation of policies contained within. These sites remain a potential concern for the emerging Local Plan and should be considered in the Habitats Regulations Assessment.

- The Broads SAC
- Broadland SPA/Ramsar
- Breckland SPA/SAC
- North Norfolk Coast SPA/Ramsar/SAC
- The Wash SPA/Ramsar
- Norfolk Valley Fens SAC
- The Wash & North Norfolk Coast SAC
- Ouse Washes SAC/SPA/Ramsar
- River Wensum SAC
- Waveney and Little Ouse Valley Fens SAC
- Redgrave and South Lopham Fen Ramsar

13.2 The interest features for each European site designation are listed below in Table 6. The overarching Conservation Objectives set out in Appendix 2 should be applied to each of these interest features. As noted in Appendix 2, detailed supplementary information for each interest feature will be developed as part of the Conservation Objectives in due course. Further detailed description of each interest feature in terms of its characteristics within the individual European site is provided on the JNCC website. Four figure reference numbers are the EU reference numbers given to each habitat and species listed within the Annexes of the European Directives.

Table 6: Reasons for designation of European sites where there may be potential impacts arising from the new Local Plan

Site	Reason for designation, * indicate a priority SAC feature
The Broads SAC	3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. 3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition- type vegetation 7140 Transition mires and quaking bogs 7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae * 7230 alkaline fens 91E0 Alluvial Forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) – <i>qualifying feature but not a primary reason for site selection</i> 1016 Desmoulin`s whorl snail Vertigo moulinsiana 1903 Fen orchid Liparis loeselii 4056 Ramshorn snail Anisus vorticulus 1355 Otter Lutra lutra - <i>qualifying feature but not a primary reason for site selection</i>
Broadland SPA	<p>Article 4.1 qualification of breeding populations of: A021 <i>Botaurus stellaris</i> A082 <i>Circus cyaneus</i></p> <p>Article 4.1 qualification of overwintering populations of: A056 <i>Anas Clypeata</i> A050 <i>Anas Penelope</i> A081 <i>Circus aeruginosus</i> A037 <i>Cygnus columianus bewickii</i> A038 <i>Cygnus Cygnus</i> A151 <i>Philomachus pugnax</i></p> <p>Article 4.2 qualification (migratory species): A051 <i>Anas Strepera</i></p>
Broadland Ramsar	<p>Data sheet does not break down into criterion, provides a general description to include: Extensive peatlands, shallow lakes, large range of wetland types, wet grazing marsh, outstanding assemblage of breeding and wintering wetland birds and rare plants and invertebrates</p>
Breckland SAC	2330 Inland dunes with open <i>Corynephorus</i> and <i>Agrostis</i> grasslands 3150 Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> - type vegetation 4030 European dry heaths 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (important orchid sites) 91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) * - <i>qualifying feature but not a primary reason for site selection</i> 1166 Great crested newt <i>Triturus cristatus</i> - <i>qualifying feature but not a primary reason for site selection</i>
Breckland SPA	<p>Article 4.1 qualification of breeding populations of: A133 <i>Burhinus oediconemus</i> A224 <i>Caprimulgus europaeus</i> A246 <i>Lullula arborea</i></p>

Site	Reason for designation, * indicate a priority SAC feature
The Wash and North Norfolk Coast SAC	1110 Sandbanks which are slightly covered by sea water all the time 1140 Mudflats and sandflats not covered by seawater at low tide 1160 Large shallow inlets and bays 1170 Reefs 1310 <i>Salicornia</i> and other annuals colonizing mud and sand 1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 1420 Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) 1150 Coastal lagoons * - qualifying feature but not a primary reason for site selection 1365 Harbour seal <i>Phoca vitulina</i> 1355 Otter <i>Lutra lutra</i> - qualifying feature but not a primary reason for site selection
North Norfolk Coast SPA	<p>Article 4.1 qualification of breeding populations of: A021 Botaurus stellaris A081 Circus aeruginosus A132 Recurvirostra avosetta A195 Sterna albifrons A193 Sterna hirundo A191 Sterna sandvicensis</p> <p>Article 4.1 qualification of overwintering populations of: A132 Recurvirostra avosetta</p> <p>Article 4.2 qualification (migratory species): A050 Anas penelope A040 Anser brachyrhynchus A046a Branta bernicla bernicla A143 Calidris Canutus</p> <p>Article 4.2 qualification (species assemblage): 91536 waterfowl (5 year peak mean in 2008), including A040 <i>Anser brachyrhynchus</i>, A046a <i>Branta bernicla bernicla</i>, A050 <i>Anas penelope</i>, A132 <i>Recurvirostra avosetta</i>, A143 <i>Calidris Canutus</i></p>
North Norfolk Coast SAC	1150 Coastal lagoons * 1220 Perennial vegetation of stony banks 1420 Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) 2110 Embryonic shifting dunes 2120 "Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")" 2130 Fixed coastal dunes with herbaceous vegetation ("grey dunes") * 2190 Humid dune slacks 1355 Otter <i>Lutra lutra</i> - qualifying feature but not a primary reason for site selection 1395 Petalwort <i>Petalophyllum ralfsii</i> - qualifying feature but not a primary reason for site selection
North Norfolk Coast Ramsar	<p>Data sheet does not break down into criterion, provides a general description to include: 40km stretch of coastline including shingle beaches, sand dunes, saltmarsh, intertidal mud and sand flats, brackish lagoons, reedbeds and grazing marshes. Internationally important numbers of breeding and overwintering bird species. Several important botanical sites and breeding localities for natterjack toad <i>Bufo calamita</i>.</p>

Site	Reason for designation, * indicate a priority SAC feature
The Wash SPA	<p>Article 4.1 qualification of breeding populations of: A195 <i>Sterna albifrons</i> A193 <i>Sterna hirundo</i></p> <p>Article 4.1 qualification of overwintering populations of: A037 <i>Cygnus columbianus bewickii</i> A157 <i>Limosa lapponica</i></p> <p>Article 4.2 qualification (migratory species): A054 <i>Anas acuta</i> A050 <i>Anas penelope</i> A051 <i>Anas strepera</i> A040 <i>Anser brachyrhynchus</i> A169 <i>Arenaria interpres</i> A046a <i>Branta bernicla bernicla</i> A067 <i>Bucephala clangula</i> A144 <i>Calidris alba</i> A149 <i>Calidris alpina alpina</i> A143 <i>Calidris canutus</i> A130 <i>Haematopus ostralegus</i> A156 <i>Limosa limosa islandica</i> A065 <i>Melanitta nigra</i> A160 <i>Numenius arquata</i> A141 <i>Pluvialis squatarola</i> A048 <i>Tadorna tadorna</i> A162 <i>Tringa totanus</i></p> <p>Article 4.2 qualification (species assemblage): 400367 waterfowl (5 year peak mean in 1998) including: <i>Cygnus columbianus bewickii</i> , <i>Anser brachyrhynchus</i> , <i>Branta bernicla bernicla</i> , <i>Tadorna tadorna</i> , <i>Anas penelope</i> , <i>Anas strepera</i> , <i>Anas acuta</i> , <i>Melanitta nigra</i> , <i>Bucephala clangula</i> , <i>Haematopus ostralegus</i> , <i>Pluvialis squatarola</i> , <i>Calidris canutus</i> , <i>Calidris alba</i> , <i>Calidris alpina alpina</i> , <i>Limosa limosa islandica</i> , <i>Limosa lapponica</i> , <i>Numenius arquata</i> , <i>Tringa totanus</i> , <i>Arenaria interpres</i></p>
The Wash Ramsar	<p>Data sheet does not break down into criterion, provides a general description to include: Largest estuarine system in Britain, extensive saltmarshes, intertidal banks of sand and mud, shallow waters and deep channels. Overwintering and migratory wildfowl and wading birds, commercial fishery for shellfish, important nursery for flatfish, north sea's largest breeding population of common seal <i>Phoca vitulina</i> and some grey seal <i>Halichoerus grypus</i>. The sublittoral area supports marine communities including colonies of the reef-building polychaete worm <i>Saballaria spinulosa</i>.</p>
River Wensum SAC	<p>3260 Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation 1092 white-clawed (or Atlantic stream) crayfish <i>Austropotamobius pallipes</i> 1016 Desmoulin's whorl snail <i>Vertigo moulinsiana</i> - qualifying feature but not a primary reason for site selection 1096 Brook lamprey <i>Lampetra planeri</i> - qualifying feature but not a primary reason for site selection 1163 Bullhead <i>Cottus gobio</i> - qualifying feature but not a primary reason for site selection</p>
Ouse Washes SAC	<p>1149 Spined loach <i>Cobitis taenia</i></p>

Site	Reason for designation, * indicate a priority SAC feature
Ouse Washes SPA	<p>Article 4.1 qualification of overwintering populations of:</p> <p>A082 <i>Circus cyaneus</i> A037 <i>Cygnus columbianus bewickii</i> A038 <i>Cygnus Cygnus</i> A151 <i>Philomachus pugnax</i></p> <p>Article 4.2 qualification (migratory species - breeding):</p> <p>A056 <i>Anas clypeata</i> A053 <i>Anas platyrhynchos</i> A055 <i>Anas querquedula</i> A051 <i>Anas strepera</i> A156a <i>Limosa limosa limosa</i></p> <p>Article 4.2 qualification (migratory species - overwintering):</p> <p>A054 <i>Anas acuta</i> A056 <i>Anas clypeata</i> A052 <i>Anas crecca</i> A050 <i>Anas penelope</i> A051 <i>Anas strepera</i> A059 <i>Aythya ferina</i> A061 <i>Aythya fuligula</i> A036 <i>Cygnus olor</i> A125 <i>Fulica atra</i> A017 <i>Phalacrocorax carbo</i></p> <p>Article 4.2 qualification (species assemblage):</p> <p>During the breeding season the area regularly supports: <i>Gallinago gallinago</i> , <i>Gallinula chloropus</i> , <i>Haematopus ostralegus</i> , <i>Tadorna tadorna</i> , <i>Tringa totanus</i> , <i>Vanellus vanellus</i> .</p> <p>Over winter the area regularly supports: <i>Phalacrocorax carbo</i> , <i>Cygnus columbianus bewickii</i>, <i>Cygnus cygnus</i> , <i>Anas penelope</i> , <i>Anas strepera</i> , <i>Anas crecca</i> , <i>Anas acuta</i> , <i>Anas clypeata</i> , <i>Aythya ferina</i> , <i>Aythya fuligula</i> , <i>Fulica atra</i> , <i>Philomachus pugnax</i> .</p> <p>64428 waterfowl (5 year peak mean 01/04/1998)</p> <p>Including:</p> <p><i>Phalacrocorax carbo</i> , <i>Cygnus columbianus bewickii</i> , <i>Cygnus cygnus</i> , <i>Anas penelope</i> , <i>Anas strepera</i> , <i>Anas crecca</i> , <i>Anas acuta</i> , <i>Anas clypeata</i> , <i>Aythya ferina</i> , <i>Aythya fuligula</i> , <i>Fulica atra</i> , <i>Philomachus pugnax</i> .</p>
Ouse Washes Ramsar	<p>Criterion 1a – representative example of a natural or near-natural wetland characteristic of its biogeographic region, one of the most extensive areas of seasonally flooding washland of its type in Britain.</p> <p>Criterion 2a – appreciable numbers of nationally rare plants and animals</p> <p>Criterion 5 - internationally important waterfowl assemblage</p> <p>Criterion 6 – internationally important overwintering bird populations</p>
Waveney and Little Ouse Fens SAC	<p>6410 Molinia meadows on calcareous, peaty or clayet-silt-lade soils <i>Molinion caeruleae</i></p> <p>7210 Calcareous fens with <i>cladium mariscus</i> and species of the <i>caricion davallianae</i> *</p> <p>1016 Desmoulin`s whorl snail <i>Vertigo moulinsiana</i></p>

Site	Reason for designation, * indicate a priority SAC feature
Redgrave and South Lopham Fen Ramsar	<p>Criterion 1 – extensive example of spring-fed lowland base-rich valley, remarkable for its lack of fragmentation</p> <p>Criterion 2 – Rare and scarce invertebrates, including fen raft spider <i>Dolomedes plantarius</i></p> <p>Criterion 3 - Rare and scarce invertebrates, including fen raft spider <i>Dolomedes plantarius</i> and site diversity, due to the lateral and longitudinal zonation of the vegetation types characteristic of valley mires.</p>

14. Appendix 4 - Screening for Likely Significant Effects

The following table documents the screening for likely significant effects undertaken on all parts of the emerging Local Plan at Preferred Options stage, and informs what modifications are required to the plan to avoid significant effects, and what aspects of the plan pose risks to European sites that need further assessment at appropriate assessment stage (AA).

Table 7: LSE screening at Preferred Options stage

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
Headline Policy Direction for the Plan - Spatial Portrait, Vision and Objectives for Breckland					
Spatial Portrait and Spatial Vision	Identifies that Thetford and Attleborough are the key areas for future housing growth. Planned road infrastructure improvements include A47 trunk road, and outside the district there is major investment planned for the Northern Distributor Road. Recognition of high level of commuting in the District and consequent CO2 emissions. Highlights the area is characterised by the Brecks, and the wealth of designated areas of wildlife, landscape and geodiversity importance.	LSE The current mitigation measures need to be assessed to determine the additional changes necessary to accommodate the new growth proposed	All	Proceed to AA	Assessment of current mitigation measures and changes necessary to meet additional growth for the new plan. Ensure incorporation of specific elements of this part of the plan within the AA, including NDR, A47
Vision	Aspires to improved quality of life, better visitor experience and attracting investment and jobs. Strategic growth planned for Thetford and Attleborough, Housing land supplied from the	LSE The current mitigation measures need to be assessed to determine the additional changes necessary to	All	Proceed to AA	Assessment of current mitigation measures and changes necessary to meet additional growth for the new plan.

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
	rural area. Employment land associated with the improved A11. Natural and built assets to be protected, and serve to attract investment and visitors.	accommodate the new growth proposed			Ensure incorporation of specific elements of this part of the plan within the AA, including A11 corridor and tourism
Objectives	Meeting housing need through urban extensions to Thetford and Attleborough, with further housing focused at Dereham, Swaffham and Watton. Environmentally sustainable communities, A11 and A47 focus for economic growth, positive management of the natural environment as assets for the future, thriving communities and community level decision making through neighbourhood planning.	LSE The current mitigation measures need to be assessed to determine the additional changes necessary to accommodate the new growth proposed	All	Proceed to AA	Assessment of current mitigation measures and changes necessary to meet additional growth for the new plan. Ensure incorporation of specific elements of this part of the plan within the AA, including growth locations, A11 and A47, neighbourhood planning.
Spatial strategy	Delivery of no less than 14,925 new dwellings and all associated infrastructure over the plan period 2011-2036, directed at the five market towns. NPPF Presumption in favour of sustainable development.	LSE The current mitigation measures need to be assessed to determine the additional changes necessary to accommodate the new growth proposed	All	Proceed to AA	Assessment of current mitigation measures and changes necessary to meet additional growth for the new plan.
Preferred Policy Direction					
Policy 1 PD01 Sustainable Development	A general policy that describes what sustainable development is for the Breckland area, in accordance with principles of social, environmental and economic benefits	No LSE A very high level and general policy without any indication of the direction, quantum or nature of growth.	None	No recommendations required	Screened out

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
Policy 2 PD02 Development Requirements	Overall quantum of housing and employment growth stated for the plan period as No less than 14,925 new homes and 67ha of employment land	LSE The current mitigation measures need to be assessed to determine the additional changes necessary to accommodate the new growth proposed	All	Proceed to AA	Assessment of current mitigation measures and changes necessary to meet additional growth for the new plan.
Policy 3 PD03 Locational Strategy	An analysis of growth distribution is provided, assessing the positive and negative effects of different development patterns. In light of earlier consultation, a recommendation is made for a continuation of focussed growth at Thetford and Attleborough, with balanced growth across the district, including a greater level of development at Dereham, Swaffham and Watton. Further development at named local service centres.	LSE Distribution pattern to be considered in relation to proximity to European sites and available evidence in relation to pressure from recreation, urbanisation, water quality and resources.	All	Proceed to AA	Consideration of distribution of development in relation to proximity of European sites, and evidence available on visitor use.
Policy 4 PD04 Level and Location of Growth	Options for the percentage split of the total housing number allocation between key settlements, market towns and local service centres. Preferred approach is based on Option 2 – KS 68%, MT 18%, LSC 14%	LSE Levels of growth at all locations to be considered in relation to proximity to European sites and available evidence in relation to pressure from recreation, urbanisation, water quality and resources.	All	Proceed to AA	Assessment of current mitigation measures and changes necessary to meet additional growth for the new plan.

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
		Current mitigation measures need to be assessed to determine the additional changes necessary			
Policy 5 PD 05 Rural Areas	Qualitative description of when development may be allowed in Breckland's rural areas, with no specific allocation stated.	No LSE A qualitative policy that does not promote growth in any particular location. Consideration of the need for project level HRA or adherence to strategic mitigation will be required.	All	No recommendations required	Screened out
Policy 6 PD 06 Economic Development	Delivery of 67ha of employment land in at least the following proportions – Attleborough 10ha Dereham 6ha Swaffham 9ha Thetford 22ha Snetterton 20ha	LSE Levels of growth at all locations to be considered in relation to proximity to European sites and available evidence in relation to employment growth issues such as air and water quality and water resources	All	Proceed to AA	Assessment of specific impact of employment growth, and mitigation measures that need to be added.
Policy 7 PD 07 Town Centre and Retail Strategy	Identifies Thetford, Dereham, Attleborough, Swaffham and Watton as the preferred locations for additional retail floorspace to be directed – town centre only	No LSE Preferred policy does not promote growth that poses any risk to European sites – no effect as a result of increased retail provision. Only promotes increased parking where there is a	None	No recommendations required	Screened out

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
		demonstrable need and benefit, otherwise promotes sustainable travel.			
Policy 8 PD 08 Affordable Housing	Criteria to be set for provision of affordable housing as part of new residential development	No LSE The proportion of affordable housing does not affect the potential impact of housing per se. Need for mitigation to protect European sites is based on location and levels of housing, and where required will apply to all housing types.	All	Supporting text should refer to the need for affordable housing to meet all mitigation requirements for European sites, which are applicable to all housing types, even if exempt from paying any other levy.	Screened out, subject to text modifications
Policy 9 PD 09 Gypsies and Travellers	Criteria based policy for allocating gypsy and traveller sites, no specific locations stated for new sites. However, reference is made to regularisation of temporary sites	No LSE A number of the temporary sites identified in the plan are in close proximity to European sites (Breckland and Norfolk Valley Fens). Supporting text refers to ensuring that sites do not compromise European site objectives, and policy refers to environmental protection.	Breckland and Norfolk Valley Fens	No recommendations required	Screened out
Policy 10 PD 10 Healthy Lifestyles	Requirement for development to secure positive benefits for health and wellbeing	No LSE A qualitative policy that does not promote growth that poses any risk to European sites – no effect	None	No recommendations required	Screened out

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
Area Specific Policy Direction – Attleborough and Thetford					
Policy 11 PD 11 Development requirements of Attleborough Strategic Urban Extension	Delivery of a Strategic Urban Extension of 296ha of land to the south east of Attleborough for 4,000 new homes. Requirement for a new link road. Includes a vision for the new Attleborough SUE	LSE Potential water resource and water quality impacts on Norfolk Valley fens to the south west of Attleborough	Norfolk Valley Fens SAC	Proceed to AA	Assess potential impacts on water quality and resources via evidence such as the WCS
Policy 12 PD 12 Attleborough Local Employment	Consideration of new employment opportunities, with supporting text referring to the A11 corridor	LSE Proposals not yet detailed, but must have regard for potential hydrological impacts on Norfolk Valley Fens SAC	Norfolk Valley Fens SAC	Additional wording to highlight risk to the SAC, and need for hydrological evidence to inform the emerging proposals for employment development along the A11 corridor.	Further assessment at AA dependant on emerging plans for A11 corridor growth.
Thetford – partial retention of the Thetford Area Action Plan	Retention of 24 policies from the Thetford Area Action Plan	LSE Need to ensure that the policies remain fit for purpose in terms of the mitigation they rely on in order to protect European sites	Breckland SPA/SAC	Proceed to AA	Revisit TAAP HRA and check mitigation remains fit for purpose, including for the continued delivery of the Thetford SUE.
Environmental					
Policy 13 ENV01 Green Infrastructure	Policy to protect and enhance the green infrastructure network across the district. General reference to 'positive action' but no specific commitments given.	LSE Previous HRA work identified that the Thetford Urban Heaths are under significant recreation pressure and strategic action for these heaths was required. The Thetford Area Action Plan contains policy wording	Breckland SPA/SAC	The specific commitment to progressing a developer funded approach to managing recreation on the Thetford urban heaths, including the provision of alternative green spaces where necessary, should be committed to within policy. The Local Plan should provide more specific and	AA to review need for these measures and explore what is currently blocking the delivery of this action, and how any such issues can be resolved.

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
		relating to such mitigation and these measures have not been progressed.		timely action with regard to this commitment, to ensure that it is delivered.	
Policy 14 ENV02 Sites of European, National and Local Nature Conservation Importance	Policy provides a hierarchy of protection for designated sites, from international to local	LSE Policy wording is robust mechanism for plan level protection of European sites, but is a simple repeat of legislation rather than with Breckland specific context	All	It is recommended that European site level policy protection could be amended to add Breckland specific context and requirements. e.g. reference to strategic mitigation requirements outlined at ENV03, or through project level HRA, that adverse effects on European sites have been prevented. HRAs should refer to Breckland's plan level HRA and evidence base, and must provide evidence to support conclusions drawn and any mitigation measures proposed. Additional suggestions here relate to all biodiversity, not just European sites.... Note that the policy wording for national/regional/local biodiversity should have 'and' after point a, not 'or' as both a and b need to be met together. Note also that the policy wording is entirely protective only. The wording should be amended to encompass	As this policy is a suitable location to add mitigation commitments, the AA may recommend further changes. It is noted that NE has recommended exploration of more flexible options for mitigation, and this should therefore form part of the AA.

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
				<p>securing enhancement of designated sites and wider biodiversity. As a public body the LPA has a duty (under international and national legislation and under national planning policy) to restore and enhance as well as protect, and this should be embedded within the plan as an intrinsic part of delivering sustainable development.</p>	
<p>Policy 15 ENV03 The Brecks Protected Habitats and Species</p>	<p>Policy sets out strategic mitigation to be adhered to for development in the vicinity of Brecks SAC/SPA</p>	<p>LSE Policy wording requires strengthening and modification in order to be a robust mechanism for plan level protection of Brecks SAC/SPA</p>	<p>Breckland SPA/SAC</p>	<p>Policy text modifications - A conclusion of no LSE can be met where <i>there is evidence to demonstrate that...</i> Remove text in brackets from 1st part of policy as stone curlews are present on other SSSIs besides Breckland Farmland. Wording in first bullet would be better if reference to 'potential stone curlew nesting sites' is dropped as it is not clear what these might be. Remove reference to landscape screening features as there is no evidence as to what these might entail. Clarity could be added to the</p>	

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
				<p>final text on nightjar and woodlark by establishing a distance (400m) from the SPA (forestry and heathland areas) where LSE would be triggered and appropriate assessment required.</p> <p>This policy is a key location to explain mitigation commitments, the AA may therefore recommend further changes.</p> <p>It is noted that NE has recommended exploration of more flexible options for mitigation, and this should therefore form part of the AA.</p> <p>Consideration of draft Agricultural Buildings Protocol should form part of the AA, and recommendations made for changes necessary before finalisation.</p> <p>Data on stone curlew nests up to 2015 is not currently available and needs to be sourced and reviewed and zones mapped.</p>	
Policy 16 ENV04 Open Space, Sport and	Provision of formal open space in accordance with minimum standards and local needs and	No LSE Mitigation that relates to greenspace is to be	All	Would be beneficial to add supporting text to highlight that any greenspace	Screened out, subject to text modifications

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
Recreation	shortfalls. Now also includes consideration of the new NPPF Local Greenspace designation and its implementation in Breckland	covered in ENV01,02 and 03 Local Greenspace very small scale and covered in policies above		requirements for designated site mitigation will be over and above the open space standards set in this policy.	
Policy 17 ENV05 Protection and Enhancement of Landscape	Protection for landscape and need for adequate assessment	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 18 ENV06 Trees and Hedgerows	Protection of trees and hedges and need for adequate assessment	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 19 ENV07 Designated Heritage	Protection of designated built heritage and need for adequate assessment	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 20 ENV08 Non-statutory Heritage	Protection of non-designated built heritage and need for adequate assessment	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 21 ENV09 Flood Risk and Surface Water Drainage	Measures to minimise flood risk and ensure suitable surface water management	LSE Potential impacts on hydrology sensitive sites	Norfolk Valley Fens SAC River Wensum.	Precautionary flagging of risk at this stage, recommendations for text additions may be made. The SFRA and WCS still in preparation and will be checked at next iteration of HRA	Assessment of evidence such as SFRA and WCS required for AA to have certainty that impacts will not occur.
Policy 22 ENV10 Renewable energy Development	Criteria for any renewable energy development coming forward to adhere to, including assessment of impacts on designated wildlife sites	No LSE Does not support specific development or locations, and protective policy wording is incorporated	All	No recommendations required	Screened out
Economy					

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
Policy 23 E 01 General Employment Areas	Protection of existing employment areas and parameters for considering additional use in these locations	No LSE Policy does not promote growth in any particular location. Criteria based policy only.	None	No recommendations required	Screened out
Policy 24 E 02 Employment Outside General Employment areas	Criteria for accepting employment development outside specified areas	No LSE Policy does not promote growth in any particular location.	None	Supporting text would benefit from reference to environmental policies, as included in EC03	Screened out, subject to text modifications
Policy 25 E 03 Farm Diversification	Consideration of farm diversification	No LSE Policy does not promote growth in any particular location.	None	Policy should include reference to the natural environment alongside landscape and greenbelt etc at point f.	Screened out, subject to text modifications
Policy 26 E 04 Tourism	Criteria for allowing tourism related development	LSE Whilst the policy offers protection in its text, it is important for the AA to explore the impact of tourism more widely.	All	Some text modifications will be recommended in light of AA. Currently the policy and supporting text is protective but does not have regard for potential impacts and how they can be mitigated for. Point c. to be changed to read 'no adverse effects on European sites.' Supporting text end of 8.28 and 8.29 need to give full title for HRA and edit wording for sentence flow. Again change to no adverse effects here.	Tourism impacts to be considered alongside residential and employment impacts as part of overall growth in the District
Policy 27 E 05 Telecommunications	Siting of telecommunication infrastructure	No LSE Policy does not promote growth in any particular location. Criteria based	None	No recommendations required	Screened out

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
		policy only.			
Policy 28 EC 6 Developer Contributions	Criteria for requiring developer contributions	LSE As developer contributions will be a means by which some European site mitigation will be delivered, the policy and supporting text should refer to this requirement.	Breckland SPA/SAC	Text modifications will be recommended in light of AA, including specific need for reference to urban heaths mitigation, as per recommendations for ENV01	AA to explore the need for developer contributions to deliver mitigation and advise on policy and supporting text changes accordingly
Policy 29 EC 7 Advertising and Signs	Design and location criteria for advertising and signs	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Transport					
Policy 30 TR01 Sustainable Transport Network	Criteria for development to reduce the need for unsustainable travel	LSE Whilst the policy does not promote growth in any particular location, it will be importance for the AA to consider transport implications of proposed growth.	All	Some text modifications may recommended in light of AA	AA to consider implications of growth on transport, and any specific transport improvements linked to new growth.
Community					
Policy 31 COM 01 Design	Setting standards for design quality	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 32 COM 02 Protection of Amenity	Setting standards for protecting amenity in new development proposals	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 33 COM 03 Principles of New Housing	Criteria based policy for housing proposed within settlement boundaries	LSE Policy covers housing within settlement boundaries and supports	All	All new housing will need to adhere to mitigation built into the plan and some settlements will need to adhere to	Screened out, subject to text modifications

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		any such proposals, with Attleborough, Thetford, Dereham, Swaffham and Watton referred to in supporting text.		restrictions in place. Suggest general reference to environmental policies in supporting text.	
Policy 34 COM 04 Community Facilities	Criteria based policy for supporting new facilities for the community	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 35 COM 05 Specialist Housing	Housing to meet needs of aging population	No LSE The type of housing does not affect the potential impact of housing per se. Need for mitigation to protect European sites is based on location and levels of housing, and where required will apply to all housing types.	All	Supporting text should refer to the need for housing to meet all mitigation requirements for European sites, which are applicable to all housing types. Some types of elderly accommodation, such as nursing homes are unlikely to result in recreation impacts, but retirement/non-medical focussed accommodation should be considered as other new housing.	Screened out, subject to text modifications
Policy 36 COM 06 Technical Design Standards for New Homes	Setting standards for design quality	No LSE A qualitative policy that does not promote growth	None	No recommendations required	Screened out
Policy 37 COM 07 Residential Replacement, Extension, Alteration	Criteria for residential replacement, extension and alteration	No LSE Policy does not promote growth in any particular location. Criteria based policy only, Need for mitigation to protect	None	Supporting text would benefit from reference to environmental policies, as included in EC03.	Screened out, subject to text modifications

Preferred policy direction	Description	Initial LSE screening	Relevant European Sites	Recommendations for modifications to plan text	Requirements for AA
		European sites is based on location and levels of housing, and where required will apply to all housing types.			
Policy 38 COM 08 Conversion of Buildings in the Countryside	Criteria for allowing conversion	No LSE Policy does not promote growth in any particular location and policy makes clear the need for European site protection and mitigation as with any other housing type	None	No recommendations required	Screened out
Policy 39 COM 09 Agricultural Worker Exceptions	Criteria for allowing agriculture based dwellings in the countryside	No LSE Policy does not promote growth in any particular location. Criteria based policy only.	None	Supporting text would benefit from reference to environmental policies, as included in EC03	Screened out, subject to text modifications
Policy 40 COM 10 Affordable Housing Exceptions	Criteria for allowing affordable housing in the countryside	No LSE Policy does not promote growth in any particular location. Criteria based policy only.	None	Supporting text would benefit from reference to environmental policies, as included in EC03	Screened out, subject to text modifications
Implementation Strategy and Infrastructure Delivery	A section at the end of the draft Preferred Options that is yet to be developed.	LSE	Potentially All	Re-assess this policy area at future iterations	Currently unknown, make reference in AA for future assessment

