FOOTPRINT ECOLOGY

Habitats Regulations Assessment of the Stroud Local Plan at Emerging Strategy Stage

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Summary

This report is the Habitats Regulations Assessment (HRA) of the Stroud District Local Plan at Emerging Strategy stage. A plan level HRA considers the implications of a plan or project for European wildlife sites, in terms of any possible harm to the habitats and species that form an interest feature of the European sites in close proximity to the proposed plan. This HRA report is in the early stages of preparation alongside the Emerging Strategy. It will continue to be developed as the Local Plan is refined, and will draw on a range of background evidence, understanding of the European sites, and the mitigation strategies currently in place for the Severn Estuary and Rodborough Common European sites.

The emerging plan site allocations are checked through this screening and scoping stage for risks to European sites. Risks need to be identified in order to inform the screening for likely significant effects, which is to establish whether there is any possibility of the implementation of the plan causing significant effects on any European site. Where the potential for significant effects is identified, or there are uncertainties, a more detailed appropriate assessment is made. This report recommends further work at the appropriate assessment, which will be undertaken in due course. This report has regard for relevant case law, including a European Court of Justice Judgment that highlights the need for appropriate use of avoidance and mitigation measures at the correct stage of HRA. This case has prompted proposed changes to the NPPF to reflect this requirement.

The initial screening of emerging policy topics and allocations has identified a number of key themes and development site allocations for more detailed assessment at the appropriate assessment stage. The appropriate assessment will be undertaken after the Regulation 18 consultations and will consider the following; recreation pressure from new residential development and from tourism as applicable, urbanisation effects in close proximity (fire risk, lighting, noise etc), air quality from increased road traffic, water quality and resources.

The appropriate assessment will also check in more detail the potential risks arising from the development site allocations and will review existing mitigation approaches in place. These considerations at appropriate assessment are to ensure that the HRA provides a robust assessment of all potential impacts and identifies clear mitigation needs. The appropriate assessment will be undertaken after the Regulation 18 consultations.

Questions to help inform consultation responses are provided at the end of this report.

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Cover image of Rodborough Common kindly provided by Deborah Roberts (Copyright), Stroud Valleys Project.

1. Introduction and Background Information

Context

1.1 This report is the Habitats Regulations Assessment (HRA) of the Stroud District Local Plan at the Emerging Strategy stage. This HRA report has been prepared by Footprint Ecology, on behalf of Stroud District Council. It has been written with the benefit of ongoing discussions with planning officers within the District Council, and forms part of the evidence base for the new Local Plan at 'Regulation 18' consultation stage, and will be the subject of public consultation, in accordance with the Town and Country Planning (Local Planning) (England) Regulations 2012.

1.2 This section provides the background context for this HRA. This report is a HRA of the emerging Stroud District Local Plan, and is a report that will be further updated as the preparation of the Local Plan progresses, A HRA considers the implications of a plan or project for European wildlife sites, in terms of any possible harm to the habitats and species that form an interest feature of the European sites in close proximity to the proposed plan or project, which could occur as a result of the plan or project being put in place. In this instance, the HRA is undertaken at plan level. HRA will also be required for development projects coming forward in the future in accordance with the Local Plan. An explanation of the HRA assessment process is summarised in this section below, and also described in greater detail in Appendix 1.

1.3 The HRA is part of the Local Plan evidence base, and its recommendations will support Stroud District Council throughout the plan making process., The HRA work includes evidence gathering and screening of preferred options for inclusion within the plan, which are provided for in this early iteration of the HRA. The work will then progress to undertaking more detailed appropriate assessment as required, making recommendations for strengthening the plan and removing risks to European sites alongside the refinement of the Local Plan in preparation for its submission for Examination in Public by the Planning Inspectorate.

1.4 The Stroud District is a predominantly rural District, located on the south-western edge of the Cotswolds Area of Outstanding Natural Beauty, and the eastern shore of the Severn Estuary. The District is steeped in industrial history particularly associated with the estuary and mills, and has thriving market towns, and a rich historic and natural environment. To the immediate north the District borders Gloucester city, a dense urban area that contrasts with much of the Stroud District. The northern edge of the District is therefore a potential focus for growth associated with the neighbouring city, recognising that there is

a close relationship between housing on this boundary and the provision of jobs and services to serve these houses within the Gloucester City administrative area.

1.5 European wildlife sites are an important feature of the District's natural heritage, with the three main sites being the Severn Estuary, Rodborough Common and the Cotswold Beechwoods. The latter site extends into both the neighbouring Cotswold District and Tewkesbury Borough.

1.6 Neighbouring local planning authorities of Tewkesbury, Cheltenham and Gloucester have produced a Joint Core Strategy (JCS), which has very recently been adopted, but is to be the subject of early review due to housing needs. The three authorities are therefore continuing to work collaboratively on a new JCS. Close working with both the Stroud District and other Gloucestershire local planning authorities is required to ensure sustainable provision of sites for growth for the area within the emerging local plans, whether joint or singular. Each emerging Local Plan is taking account of up to date evidence, current local circumstances and needs, and current planning legislation and national policy, guidance and good practice.

1.7 The neighbouring Cotswold District Local Plan has recently been adopted in August 2018. The HRA supporting the preparation of the local plan highlighted the potential risk from recreation pressure on the Cotswold Beechwoods SAC, and supporting text for Policy INF7 (Green Infrastructure) within the adopted plan states that the District Council is committed to working with key stakeholders to develop appropriate mitigation measures, which could require developer contributions.

1.8 A summary of the key aspects of the emerging Stroud District Local Plan in terms of growth objectives over the plan period is provided in the section below. The current Stroud Local Plan, which was adopted in November 2015, is also reviewed in terms of its supporting HRA work, particularly in relation to the measures recommended to protect the European sites from the impacts of growth proposed within the current Stroud Local Plan.

1.9 When embarking on new HRA work, it is important to take stock and consider how well the measures recommended or put in place to protect European site interest in previous plan iterations have progressed, and what evidence there is available to support the continuation of such measures, or to indicate that they may need modification. This HRA therefore looks at the measures that were recommended by the previous HRA for the Stroud Local Plan, and how those have progressed since plan adoption. Any changes in circumstances, evidence, statutory advice or local understanding of the issues needs to be considered. A

summary of previous HRA work and mitigation approaches is also provided in this section below.

Habitats Regulations Assessment process

1.10 A 'Habitats Regulations Assessment,' normally abbreviated to HRA, 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 exception 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.

1.11 The relevant European legislation is the Habitats Directive 1992[1] and the Wild Birds Directive 2009[2], which are transposed into domestic legislation through the Conservation of Habitats and Species Regulations 2017. These Regulations are normally referred to as the 'Habitats Regulations' and the most recent update consolidates previous versions and corrects some minor errors in transposition. The 2017 Regulations have not changed any of the requirements in relation to European sites.

1.12 The 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, i.e. sites proposed for European designation and going through the designation process, and those providing formal compensation for losses to European sites, are also given the same protection. This report refers to all the above sites as 'European sites' for assessment purposes, as the legislation is applied to all such sites, either directly or as a result of policy.

1.13 It should be noted that the European Directives operate on the basis that sites are in place to serve as an ecologically functioning network, and ultimately it is the preservation of that network as a whole that is the overall aim of the European Directives. The network is often referred to as the Natura 2000 Network or 'N2K.'

[1] Council Directive 92/43/EEC
[2] Council Directive 2009/147/EC

1.14 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 HRA is provided in this report at Appendix 1.

1.15 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. These objectives are set by Natural England and published for each European site in high level generic form and then with supplementary advice that relates to the interpretation of these at each individual site. Preparation of supplementary advice is not yet complete for all European sites. It is available for Cotswold Beechwoods but not yet finalised for Rodborough Common. The Severn Estuary has additional Marine Conservation Advice to support its generic conservation objectives because it is a marine European site.

1.16 The site conservation objectives are relevant to any HRA, because they identify what should be achieved for the site, and a HRA may therefore consider whether any plan or project may compromise the achievement of those objectives. A summary of relevant European sites is provided within this section below. Further information on European site interest and links to the conservation objectives can be found at Appendix 2 of this report. The European sites of relevance to this HRA are discussed below and Appendix 3.

The emerging Stroud District Local Plan

1.17 A Local Plan is produced by a local planning authority to set the quantum and direction of sustainable development for the forthcoming plan period. The National Planning Policy Framework (NPPF) 2012[3] states that sustainable

[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

development is the achievement of social, economic and environmental aspirations, and these three dimensions of sustainable development are mutually dependant.

1.18 The existing Stroud Local Plan, adopted in 2015, provides for the sustainable development of the Stroud District up to 2031. The review of the Stroud Local Plan has commenced with publication of an Issues and Options document in 2017, which set out the key issues and potential growth options for the District. The key issues described within the Issues and Options document are the economy, delivery of affordable housing, the environment, the health and wellbeing of the Stroud population, and Local Plan delivery. The environment chapter highlights the need to avoid, reduce and mitigate for the indirect impacts arising from new development.

1.19 For the natural environment, the NPPF advises that sustainable development should include protecting, enhancing and improving biodiversity, and moving from a net loss of biodiversity to achieving net gains. The recently published Defra 25 year plan[4] sets out an ambitious programme for improving the natural environment, including the achievement of environmental net gains through development, of which biodiversity is an important part.

1.20 The Defra strategy follows on from the review of England's wildlife sites and ecological network, set out in the report to Defra in 2010 entitled 'Making Space for Nature,'[5] which was prepared by a group of national experts chaired by Professor Sir John Lawton. Within this report, it is identified that in order to make our ecological networks and wildlife sites capable of future resilience, there is a need for more wildlife sites, and that existing networks need to be bigger, better and more connected. The future health of designated sites is very much dependant on the future health of wider biodiversity and the ecological networks that sustain them. In planning for the long-term sustainability of designated sites, it is therefore necessary to protect and enhance wider biodiversity through the planning system as well as the designated sites. This HRA recognises this need as an integral part of maintaining designated wildlife sites into the long term, supported ecologically by a healthy and integrated wider biodiversity resource, underpinned by ecosystem services such as clean air and water, and a diversity of pollinators and soil biota.

[4] https://www.gov.uk/government/publications/25-year-environment-plan

[5] https://www.gov.uk/government/news/making-space-for-nature-a-review-of-englands-wildlife-sites-published-today

1.21 Alongside the growth needs for the Stroud District, the emerging District Local Plan also has a significant focus on the natural environment. This in turn adds value to the local economy, local communities and visiting tourists. Protective policies for the natural environment are an important part of a Local Plan, and these are discussed further in the screening and appropriate assessment sections of this HRA report, with recommendations for strengthening policy wording and supporting text.

1.22 The Issues and Options document set out a Local Plan period commencing in 2016. With the preparation of the Emerging Strategy, the plan period has now been modified to enable an up to date Local Plan, which has regard for the development that has come forward since the adoption of the current Local Plan in 2015, and proposes a strategy for new growth from 2020 to 2040, i.e. the period from the intended adoption year for the new Local Plan. The plan will include spatial policies, development management policies and necessary site allocations to deliver the required growth, having regard for all planning permissions given that already contribute towards requirements. The Emerging Strategy currently sets out a range of options for delivering growth within the eight 'Parish Clusters' as already defined in the current Local Plan. Each of the eight clusters generally has a market town and rural hinterland. The clusters each have a vision within the adopted plan, and the newly emerging plan looks at how the growth proposals within these clusters needs to be updated.

Calculating housing need for the Local Plan

1.23 The required housing for the Stroud District is calculated by the District Council on the basis of a range of evidence documents and methodologies. In accordance with the Government's recommended methodologies for assessing housing need, the current requirements are calculated as 638 new dwellings per year for the District, which equates to 12,700 over the plan period.

1.24 The national calculation is based on the average household increase required over ten years, adjusted to take account of the relative cost of housing in each area. The housing figures within the Emerging Strategy are based on the 2014 household projections and the latest local affordability ratio (wages to house prices). This calculation gives a total of 651 new dwellings per annum. However, this is an increase from the currently adopted Stroud Local Plan requirement for 456 new dwellings per annum and is an increase of more than 40%. With this difference between the adopted and new figures, the final figure can be reduced and capped at an increase of 40%, which brings the proposed for the Emerging Strategy to 638 new dwellings per annum, and 12,760 in total over the plan period of 20 years.

1.25 With a considerable level of planning permissions given since the adoption of the existing Stroud Local Plan, the review of the plan and adoption of a new Local Plan from 2020 onwards will provide for a remaining housing growth requirement of approximately 5,700 new dwellings.

1.26 This HRA assesses all parts of the emerging plan at Emerging Strategy stage, particularly the site allocations presented to meet this housing need.

Relevant HRA work and other evidence and assessment

1.27 The adopted Stroud Local Plan is supported by HRA work that provided the foundations for the current mitigation strategies in place for both Rodborough Common and the Severn Estuary. The HRA found that both sites were at risk from increasing recreation pressure, leading to disturbance of European site interest features, particularly in the case of the Severn Estuary, and harm to the sensitive habitats at the Common.

1.28 The following strategy documents are of relevance to this HRA as they provide the current mitigation measures for these two sites, which will require review to inform the appropriate assessment section of this HRA in due course.

Rodborough Common

1.29 For the long term protection of Rodborough Common SAC from the impacts of new residential growth, a partnership of the Council with the National Trust, Natural England and the Stroud Valleys Project is implementing a range of mitigation projects funded by developer contributions collected from within a 3km zone of influence to manage recreational access at the site. The zone has been identified using visitor survey data collected in 2013 by Strategic Marketing (using a survey prepared by URS and agreed by Natural England), utilising 159 separate interviews with visitors. The visitor survey work found that 73% of visits were made by visitors living within 3km of the Common, indicating a relatively localised draw to the site. A good proportion of the visitors surveyed were also regular visitors, visiting at least once per week. This indicates that the Common is predominantly used for local greenspace needs rather than being primarily a visitor destination, although it is promoted to some extent as such by the National Trust.

1.30 Measures include educational projects, working with local land owners and consideration of both grazing management on site and enhancement of other recreation areas off site.

1.31 The strategic approach to protecting Rodborough Common has arisen from advice from Natural England and consideration of potential risks in the HRA

prepared in 2014 to support the currently adopted Stroud Local Plan. This highlighted difficulties in implementing the required grazing regime for the Common, including vehicle collisions with the grazing herd and dogs worrying the cattle, along with habitat damage as a result of trampling and erosion. The currently adopted Stroud Local Plan includes a commitment to the delivery of measures to protect the Common, funded by developed contributions obtained from within a 3km zone around the SAC.

1.32 The appropriate assessment of the emerging new Stroud Local Plan will review the measures in place for Rodborough Common SAC, to ensure that they remain fit for purpose in light of the new growth and site allocations being proposed

Severn Estuary

1.33 The current strategic mitigation strategy has been prepared on the basis of visitor survey information conducted in 2015/16 by EPR, which recommended mitigation measures to ensure that increasing pressure arising from additional recreational use by new housing is adequately managed. The visitor survey work has been used to identify a 7.7km zone of influence and measures within the strategy include education projects, parking review, and codes of conduct. Implementation is to be overseen by a panel and the strategy recommends an annual review. It is recognised that the strategy has recently been developed and it is recommended within the strategy document that the strategy is re-assessed as part of the Local Plan review.

1.34 In particular, recent advice from Natural England in relation to opportunities for updating the evidence base with a better understanding of the functionally linked land for the SPA, high tide roost counts, Environment Agency flood defence work will be factored into the appropriate assessment. Progress made in relation to stakeholder discussions on these matters, which are being organised by Natural England and Stroud District Council, will be looked at as part of the appropriate assessment.

Cotswold Beechwoods

1.35 The HRA for the currently adopted Stroud Local Plan considered the potential impacts of increased growth on the SAC and concluded that whilst there was the potential for increased recreation pressure, this was not considered to be significant, on the basis of currently available information. The HRA acknowledges that the site does not have the benefit of visitor survey data but concludes that from considering housing figures for proposed growth, the contribution towards increased recreation pressure on the site that would be likely to come from the Stroud District is minimal compared with other

surrounding areas. At the time of preparation in 2014, the HRA concluded no adverse effects on the SAC in terms of recreation pressure.

1.36 Since that time, Natural England has highlighted the potential risk to the site from new growth, having regard for the combined quantum of growth coming forward in Local Plans in the vicinity of the SAC. The SIP for Cotswold Beechwoods, as noted in Appendix 3, flags recreation pressure as a key threat. In progressing this HRA, there are ongoing discussions between the relevant local planning authorities to progress visitor survey work at the site, which will then potentially inform any mitigation need that will be assessed in detail within the appropriate assessment of this HRA, and possibly other neighbouring HRAs.

Sustainability Appraisal for the emerging Local Plan

1.37 A sustainability appraisal is undertaken by local planning authorities on local planning documents to assess whether the economic, environmental and social needs of the local area are being met. The appraisal runs alongside the preparation of a local plan, appraising the options being taken forward and whether alternatives might have a greater positive or lesser negative effect on economic, environmental and social objectives. Sustainability appraisal also incorporates the requirements of the European Strategic Environmental Assessment Directive.

1.38 There are some elements of cross over between HRA and the sustainability appraisal. The appraisal will consider environmental sustainability in terms of natural resources such as air and water, and how they may be affected by the plan. These are similarly important supporting aspects of European site ecological integrity. The sustainability appraisal, being prepared by Land Use Consultants, includes biodiversity related objectives and indicators. The appropriate assessment work within this HRA will be discussed with the Sustainability Appraisal consultants to ensure that any emerging mitigation requirements developed as part of the appropriate assessment are referred to. This should ensure that the Sustainability Appraisal has regard for the implications of mitigation measures in terms of meeting sustainability requirements.

Water and flooding evidence documents

1.39 To inform the appropriate assessment stage of the HRA, there will need to be consideration given to the available documents and strategies relating to water resources, water quality and flood management.

1.40 The Stroud District is not considered to be at risk in terms of provision of water supply, and there is no assessment proposed to underpin the emerging Local

Plan in this regard. Water abstraction issues for the Severn Estuary were flagged by the previous HRA work, but not concluded to be significant. As a precautionary measure, the potential for water supply and water quality to be a viable impact pathway will be explored through discussion with Natural England and the Environment Agency. If necessary, contact will also be made with the relevant water utility companies. These are Severn Trent (covering Stroud and north) and Wessex water (covering to the south of Sharpness). Any proposed water infrastructure upgrades over the new plan period will be checked.

1.41 A Strategic Flood Risk Assessment (SFRA) is currently in preparation as part of the evidence base to inform the new Stroud Local Plan. JBA consulting have recently been commissioned by Stroud District Council to undertake the assessment, and during the appropriate assessment stage of HRA the progressing SFRA will be checked and any risks to European sites assessed accordingly.

Transport Modelling and air quality

1.42 As part of the evidence base for the Stroud Local Plan, transport modelling will be undertaken to consider the changes in traffic that may arise as a result of growth options. Discussions have recently been held between the District council, County Council and Highways England to determine the most suitable approach. This is likely to be the use of a Saturn Base Model, with some additional localised modelling at junctions with pinch points. This will be an update to the transport modelling used for the current Stroud Local Plan, which was primarily focussed on junction modelling.

1.43 Once prepared, the transport modelling will be considered to check for any potential impacts in terms of air quality changes in proximity to European sites, using current good practice advocated by Natural England. This will update the previous air quality considerations within the HRA for the currently adopted Stroud Local Plan. The HRA concluded that air quality was not a concern for the Severn Estuary because the interest features and associated habitats for this coastal site are not considered to be sensitive. Rodborough Common was identified within the previous HRA report as being sensitive to air quality changes, but considered that the positive qualitative measures within the Local Plan in relation to maintaining and improving air quality alongside new growth were such that adverse effects could be ruled out.

1.44 For Cotswold Beechwoods the HRA concluded that whilst the habitats are sensitive to air quality changes, predicted traffic increases would not lead to any significant concerns for the Cotswold Beechwoods SAC. These conclusions used the available traffic modelling data at the time of preparation of the current

Stroud Local Plan. These previous conclusions will be revisited with the new traffic information as part of the appropriate assessment.

1.45 A County Waste Incinerator is currently under construction at Haresfield/M5, which was the subject of project level HRA. This development project HRA will be considered as part of the appropriate assessment, to check for any potential cumulative impacts.

2. European Sites

2.1 In undertaking a HRA it is necessary to gather information on the European sites that could be potentially affected by the plan or project. A 20km buffer from the edge of the District was used to initially identify sites that may be potentially affected. This buffer is used by Footprint Ecology for local plan HRAs as it is deemed precautionary enough to capture most potential impact pathways (i.e. the means by which a European site may be affected) between plan implementation within a local planning authority's administrative area. The list of European sites within 20km was then evaluated in terms of relevant threats, vulnerabilities and current issues.

2.2 European sites within 20km are shown in Map 1 and European sites are listed in Table 1. Full details of the interest features and current pressures/threat for each site are summarised in Appendix 3.

2.3 Risks need to be identified in order to inform the screening for likely significant effects. European sites are at risk if there are possible means by which any aspect of a plan can, when being taken forward for implementation, pose a potential threat to the wildlife interest of the sites. This is often referred to as the 'impact pathway' as it is an identifiable means by which the plan or project could potentially affect the European site.

Table 1: European Sites within a 20km radius

SAC	SPA	Ramsar
Screened in:		
Severn Estuary	Severn Estuary	Severn Estuary
Cotswold Beechwoods		
Rodborough Common		
Screened out:		
North Meadow and Clattinger Farm	Walmore Common	
River Wye		
Wye Valley and Forest of Dean Bat sites		
Wye Valley Woodlands		

2.4 In assessing the implications of any plan or project for European sites, it is essential to fully understand the ecology and sensitivity of the sites, in order to identify how they may be affected. This section and the accompanying detailed site information within Appendices 2 and 3 identifies those sites that could potentially be affected by the policies and proposals within the emerging Stroud District Local Plan. 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.

2.5 Each European site also has a set of 'conservation 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. Also relevant to the HRA is the consideration of how a plan or project may affect the achievement of conservation objectives for each European site. The site conservation objectives are relevant to any HRA, because they identify what should be achieved for the site, and a HRA may therefore consider whether any plan or project may compromise the achievement of those objectives. The background to conservation objectives and key considerations are explained in Appendix 2. Appendix 3 sets out the site interest features for each European site.

2.6 The Habitats Directive requires competent authorities to 'maintain and restore' European sites. Where sites are meeting their conservation objectives, the requirement is to maintain this position and not allow deterioration. Where a site requires restoration, competent authorities should work to bring site interest features back to a status that enables conservation objectives to be met.

2.7 In addition to conservation objectives, Natural England produces Site Improvement Plans (SIPS) for each European site in England as part of a wider programme of work under the 'Improvement Programme for England's Natura 2000 sites.' Each plan includes a set of actions for alleviating issues that are impeding the delivery of conservation objectives, with lead delivery bodies identified and indicative timescales. The SIPs can provide an additional useful reference for HRA work, identifying where there are site sensitivities. These will be reviewed as part of the appropriate assessment, and links are provided in Appendix 3, with key threats highlighted. Those that are connected to development are primarily recreation, air quality, water and for Rodborough Common, management issues in relation to grazing.

2.8 The sites identified in Table 1 as being screened out of the HRA are considered not relevant primarily due to distance, preventing any plausible impact pathways. The River Wye has a strategic approach to mitigation from new

growth bringing increased nutrient enrichment, but this is only applicable within its catchment, for which the Stroud District is outside. Walmore Common is closer to the District boundary and is a regularly flooded damp grassland site that supports overwintering Bewick's Swan *Cygnus columbianus bewickii*. The HRA work for the currently adopted Stroud Local Plan screened Walmore Common out from any likely significant effects due to its location on the opposite side of the River Severn and 5km from any significant settlement in the Stroud District. Since the adoption of the current Local Plan there isn't any information or advice to alter the conclusion that this SPA can be screened out from further consideration.

2.9 In initially screening the European sites within 20km of the Stroud District, it is concluded that the sites for which the Local Plan poses potential risks are Cotswold Beechwoods, Rodborough Common and the Severn Estuary. Table 2 below provides a summary of the initially identified impact pathways that may be relevant. At the screening stage, the identification of impact pathways is on a precautionary basis. These are possible means by which the content of the Stroud Local plan may affect European site interest features. The later HRA stage of appropriate assessment will consider these potential impact pathways in further detail, at which point they may be ruled out from causing adverse effects. Table 2 is therefore a precautionary identification of potential impact pathways at Emerging Strategy stage, for further consideration.

Table 2: Summary of potential impact pathways – i.e. potential mechanisms where by the different European sites could be impacted (? = possible)

Site	Recreation	Air quality	Water quality	Water abstraction	Urban effects
Severn Estuary SPA	✓		✓	✓	
Severn Estuary SAC	✓		✓	✓	
Cotswold Beechwoods SAC	✓	✓	✓	✓	✓
Rodborough Common SAC	✓	✓	✓	✓	✓

Relationship with wider biodiversity assets

2.10 In accordance with the NPPF, a Local Plan sustainable development should include protecting, enhancing and improving biodiversity, and moving from a net loss of biodiversity to achieving net gains. The recently published Defra 25

year plan[6] sets out an ambitious programme for improving the natural environment, including the achievement of environmental net gains through development, of which biodiversity is an important part.

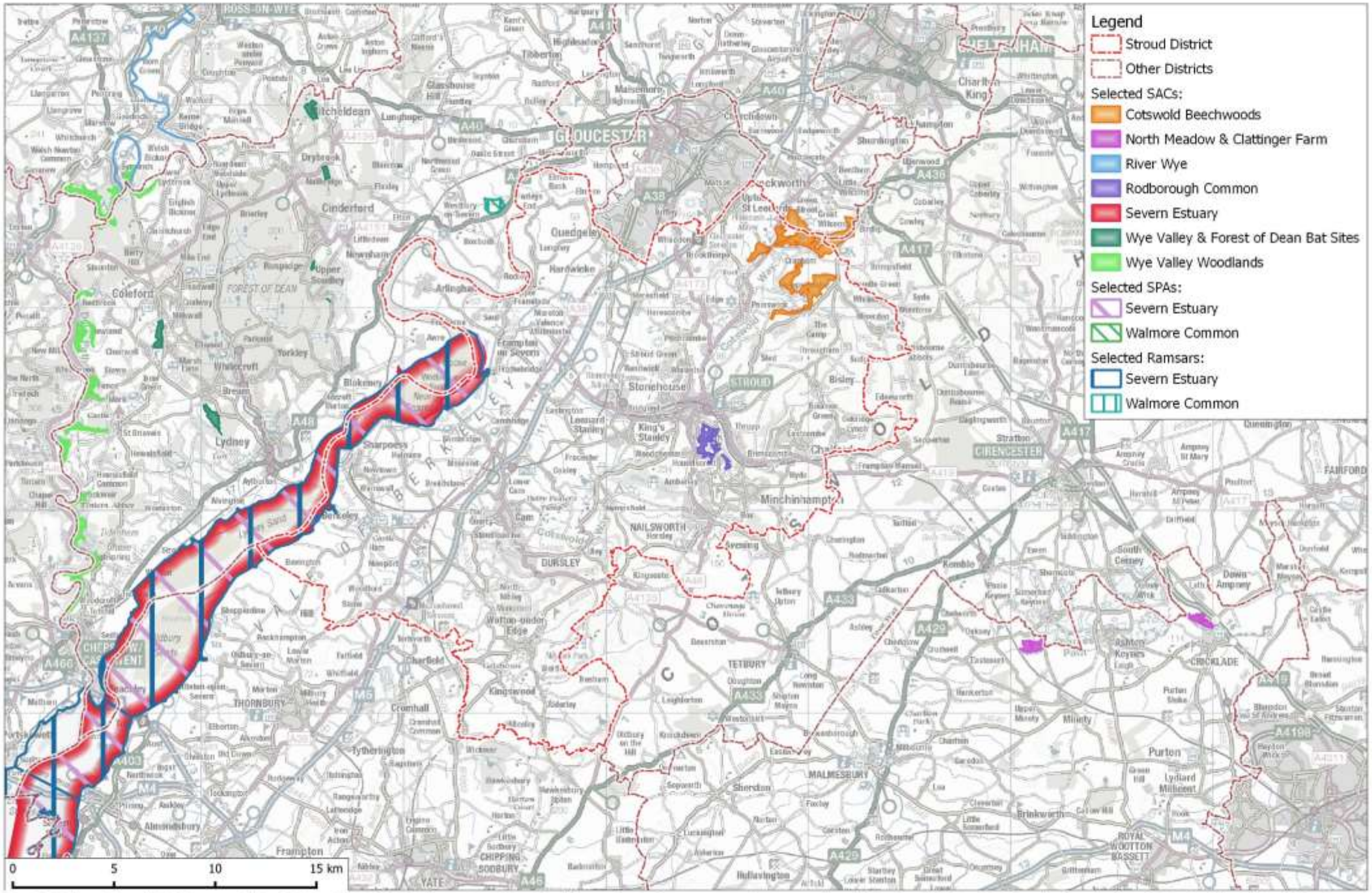
2.11 The Defra strategy follows on from the review of England's wildlife sites and ecological network, set out in the report to Defra in 2010 entitled 'Making Space for Nature,'[7] which was prepared by a group of national experts chaired by Professor Sir John Lawton. Within this report, it is identified that in order to make our ecological networks and wildlife sites capable of future resilience, there is a need for more wildlife sites, and that existing networks need to be bigger, better and more connected.

2.12 The future health of designated sites is very much dependant on the future health of wider biodiversity and the ecological networks that sustain them. In planning for the long-term sustainability of designated sites, it is therefore necessary to protect and enhance wider biodiversity through the planning system as well as the designated sites. This HRA will recognise this need within the appropriate assessment section in relation to biodiversity protection, maintenance, enhancement and gains through planning. Biodiversity related policy areas will be checked and recommendations made to ensure that a holistic approach to biodiversity is taken, which in turn underpins designated site protection into the long term.

[6] https://www.gov.uk/government/publications/25-year-environment-plan

[7] https://www.gov.uk/government/news/making-space-for-nature-a-review-of-englands-wildlife-sites-published-today

Map 1: SPA, SAC and Ramsar sites in the area.



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3. Consideration of Site Allocations

3.1 All aspects of the emerging plan that influence sustainable development for the Stroud District are checked through this assessment for risks to European sites.

3.2 All policies are checked as part of HRA, but of particular relevance is the quantum and location of proposed growth. At the Emerging Strategy stage, the policies are not yet refined and appear within the Emerging Strategy as headline topics with options to inform the public consultation. GIS data showing proposed development allocations were provided to Footprint Ecology by Stroud District Council. These data showed locations for housing and employment growth being presented as preferred sites within the Emerging Strategy for the Local Plan. This enables a check for relevant potential pathways by looking at the growth that will come forward in close proximity to the European sites.

3.3 Map 2 shows the allocations as currently proposed in the Emerging Strategy. These sites are the development sites currently identified as presenting the most sustainable options to meet the required growth for the Stroud District up to 2040, with the intention of reviewing the current local plan to provide a new Local Plan for Stroud that runs from 2020 to 2040.

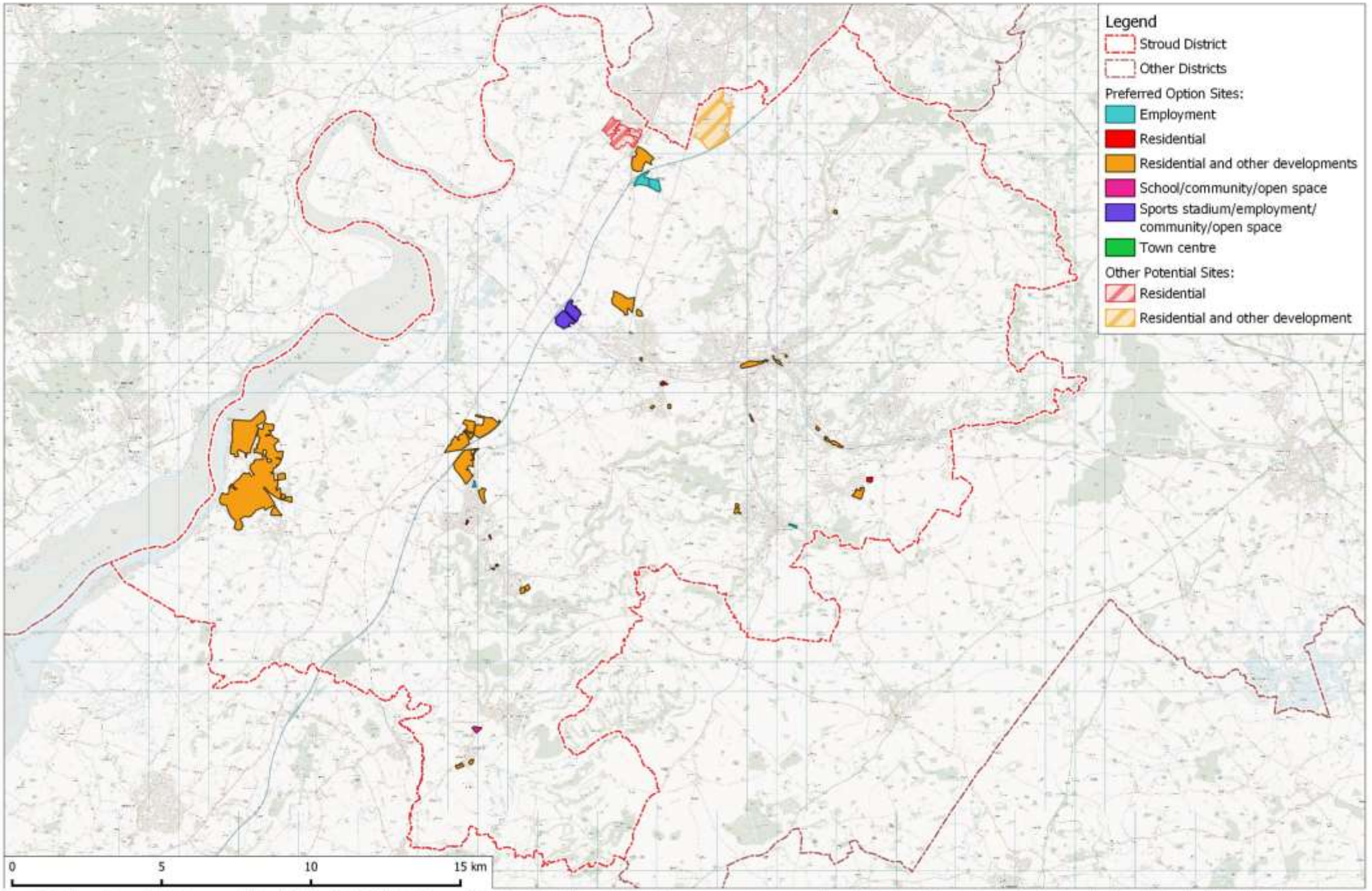
3.4 Map 3 presents zones around the European sites that assist with the identification of potential impacts for further consideration. Any development sites in very close proximity of 400m have the potential for urbanisation and air quality impacts. Within close proximity of 1km there may be a risk relating to water, and closer consideration of watercourses leading into European sites may be required. This then enables an initial consideration of the potential impact pathways that may be of relevance, serves to inform the initial screening of the plan for likely significant effects. These impact pathways are then considered in greater detail within the appropriate assessment. Table 2 in the previous section provides an initial summary of all potentially relevant impact pathways.

3.5 Map 3 also identifies the current interim mitigation strategy zones for both the Severn Estuary and Rodborough Common. A nominal 5km zone has also been illustrated around the Cotswold Beechwoods. This is an indicative line to give an idea of distance between site allocations and the SAC. The mitigation strategies for both the Severn Estuary and Rodborough Common are currently based on visitor survey data, as explained in Section 1 of this report. The visitor surveys for Cotswold Beechwoods are yet to be undertaken, programmed for Spring 2019. The 5km zone does not therefore necessarily reflect a future mitigation zone of influence, which may be established using visitor survey findings in

2019. As described in section 1, the next iteration of this HRA report will be informed by that survey work.

3.6 It should be noted that the consideration of site allocations and Maps 2 and 3 within this HRA report for the Emerging Strategy Local Plan has been undertaken using available GIS data provided by Stroud District Council during the preparation of the Emerging Strategy for consultation. For the exact boundaries of site allocations, the consultation version of the Emerging Strategy should be referred to. The Emerging Strategy provides the preferred sites for development within each of the eight Parish Clusters. The 'other potential sites' identified in Map 2 are sites that are identified at the Emerging Strategy stage as sites that may be required for unmet development needs.

Map 2: Potential development sites.



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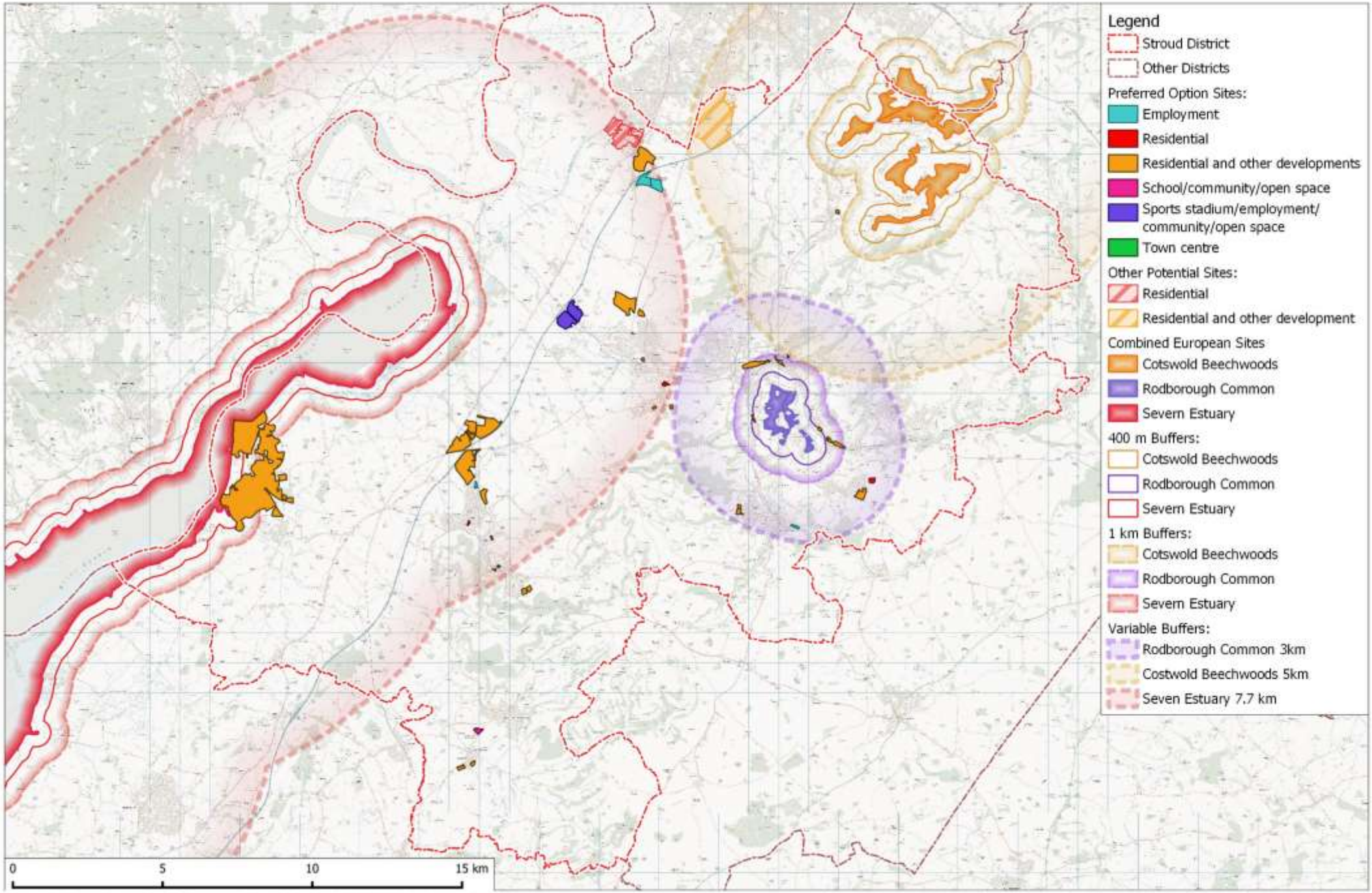
Map 3: Potential development sites in relation to European site buffer zones.



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4. Screening for Likely Significant Effects

4.1 HRA is a step by step process, with the competent authority required to undertake screening for likely significant effects on European sites, after determining that the plan or project in question is not one that is entirely necessary for site management. Once relevant background information and potential impact pathways are understood, the HRA can progress to the screening for likely significant effects stage, fully informed by the background research undertaken. The screening for likely significant effects is undertaken on all policies within the plan. It is an initial check, made on a precautionary basis, to determine whether any part of the plan poses a risk to European sites in terms of its future implementation.

4.2 The Stroud District Local Plan is being prepared to steer sustainable development in the District over a 20 year timeframe, and whilst protection and enhancement of the natural environment is an integral part of sustainable development, the plan is not singularly focussed on European site management. The screening for likely significant effects is therefore undertaken.

4.3 When a HRA is being undertaken on a plan or project that is initiated by the competent authority themselves, there is greater opportunity to identify potential issues arising from the plan or project in the initial stages of design or preparation. Where a competent authority is approving a project being proposed by another party, the application for permission is usually made when the proposal has already been designed and all details finalised, thus the opportunity to identify issues early on is more limited unless an applicant chooses to hold early discussions with the competent authority.

4.4 For the Stroud Local Plan, District Council is both the plan proposer and the competent authority, thus allowing the HRA to influence the plan in its earlier stages, at later refining stages and up to submission for Examination.

What constitutes a likely significant effect?

4.5 At the screening stage of HRA, there is the opportunity to identify changes to the plan that could be made to avoid risks to European sites. Any requirement for assessing the effectiveness of changes should be made at the appropriate assessment stage. The screening for likely significant effects is an initial check to identify risks or uncertainties in policy wording and recommend any obvious changes that can avoid those risks with clarifications, corrections or instructions for development project level HRA. Any recommendations that need to be justified in terms of effectiveness and applicability should be considered within

the appropriate assessment stage of HRA. As described in Appendix 1, screening for likely significant effect is an initial check to identify risks and uncertainties that could potentially be significant for the European sites, and to recommend any obvious changes that can avoid those risks. Where risks cannot be avoided with simple clarifications, corrections or instructions for project level HRA, a more detailed assessment is undertaken to gather more information about the likely significant effects and give the necessary scrutiny to potential mitigation measures. This is the appropriate assessment stage of HRA.

4.6 The screening check of each aspect of the plan is essentially looking for two things to enable a conclusion of no likely significant effect;

- Whether it is possible to say with certainty that there are no possible impacts on European sites, or
- Whether, in light of a potential risk, simple clarifications can be built into the policy and/or its supporting text, which serve to avoid any likely impacts, or
- Whether, in light of a potential risk, further assessment is required at the appropriate assessment stage of HRA to establish the nature, extent or duration of a potential impact, its implications for European site interest features, and the viability of any measures that are proposed.

4.7 If the first or second point can be met, it enables a competent authority to screen out from further stages of assessment. Where there is the potential for European sites to be affected, or mitigation measures need to be checked to ensure they are effective and appropriate, more detailed consideration is required and this then screens those aspects of the plan in to the appropriate assessment.

4.8 A likely significant effect could be concluded on the basis of clear evidence of risk to European site interest, or there could be a scientific and plausible justification for concluding that a risk is present, even in the absence of direct evidence. The latter is a precautionary approach, which is one of the foundations of the high-level of protection pursued by EU policy on the environment, in accordance with the EU Treaty.[8] The precautionary principle should be applied at all stages in the HRA process. follows the principles established in case law relating to the use of such a principle in applying the European Directives and domestic Habitats Regulations. In particular, the European Court in the 'Waddensee' case[9] refers to "*no reasonable scientific doubt*" and the 'Sweetman'

[8] Article 191 of the Treaty on the Functioning of the EU. Previously Article 174 of the Treaty of the EC.

[9] European Court of Justice case C - 127/02

case[10] the Advocate General identified that a positive conclusion on screening for likely significant effects relates to where there "*is a possibility of there being a significant effect*".

4.9 An additional recent European Court of Justice Judgment in 2018 (Case C-323/17) clarified that the need to carefully explain actions taken at each HRA stage, particularly at the screening for likely significant effects stage. The Judgment is a timely reminder of the need for clear distinction between the stages of HRA, and good practice in recognising the function of each. The screening for likely significant effects stage should function as a screening or checking stage, to determine whether further assessment is required. Assessing the nature and extent of potential impacts on European site interest features, and the robustness of mitigation options, should be done at the appropriate assessment stage.

4.10 Tables 3 and 4 below record the conclusions drawn and recommendations made on a check for likely significant effects of the Stroud Local Plan at Emerging Strategy stage. Table 3 considers the emerging policy topics, and Table 4 the preferred site allocations. Screening of site allocations has been undertaken in relation to proximity to European sites, using a 400m zone that would highlight potential air quality and urbanisation effects, a 1km zone that would highlight potential water related impacts and the current mitigation zones for potential recreation impacts. In lieu of pending survey work for Cotswold Beechwoods, a 5km zone is used. This will be revised later.

4.11 Each aspect of the emerging preferred options are checked and conclusions recorded in the screening table. Potential risks are highlighted. For a number of aspects of the plan, particularly those related to site allocations, the screening has identified a likely significant effect. At the current Emerging Strategy stage, the screening table is considering options for future policy development, and therefore cannot make specific recommendations other than identify what key topic areas will need to be considered at the appropriate assessment. Once the plan is re-screened at the next stage, policies will be much better developed and the screening will make recommendations as follows:

- For policy topics that do not set a quantum of development or specific locations, the potential for significant effects relates to the possibility of development coming forward in a particular location or with particular characteristics, or simply the quantum of growth proposed. In such instances, the risks may be simply avoided with straightforward clarifications, which remove any uncertainty. The recommendations add text to the policy to

[10] European Court of Justice case C - 258/11

explain how the policy should be implemented to prevent adverse effects. This does not exclude the need for project level HRA but enables a conclusion of no likely significant effects at the plan level, because the identified risks to European sites have been removed. Project level HRA provides a means of checking for any further risks unforeseen at the plan level, and for developing project specific mitigation measures in greater detail within a project level appropriate assessment.

- For policy topics that do set a quantum of development or specific locations, the risks are primarily related to recreation pressure, but there are also potential impact pathways relating to urbanisation effects (including increased noise and lighting), water and air quality. The further detailed assessment of these impact pathways is discussed in more detail in the appropriate assessment chapter. These are also impact pathways that would typically be re-considered at the development project level HRA.

- For policy topics that will provide specific protection of European sites or direct mitigation requirements, the risks relate to whether the policy provides robust means of protecting the European sites and delivering the required mitigation. Further scrutiny of this is undertaken within the appropriate assessment.

4.12 The initial screening was undertaken immediately prior to the finalisation of the Emerging Strategy for public consultation at Regulation 18 stage. This HRA report provides the Stroud District Council planning officers with an early indication of the key topics for further in depth assessment at appropriate assessment.

4.13 The screening tables will include additional columns when the Stroud Local Plan is re-screened later at the Final Draft Plan stage, which is anticipated to be in Autumn 2020. There may also be a need to undertake further screening on any proposed modifications after Examination in Public, prior to adoption. This ensures that the final adopted plan has an up to date HRA report.

Table 3: Screening for likely significant effects – Stroud District Local Plan policy topics at Preferred Strategy stage

Policy Topic	Description	Initial LSE screening	Potential risks	Recommendations and actions
Town centres	Emerging approaches for each of the key town centres in terms of retain, pedestrian areas, walking and cycling etc	No LSE	None, town centre focussed, no impact pathways	N/A
Local housing need	638 dwellings per annum for a 20-year period	LSE	Quantum of growth poses risks for European sites in terms of recreation pressure. Also need to assess potential issues in relation to water, air and urbanisation	Appropriate assessment
Greenspaces and community facilities	A positive policy for protection and enhancement of biodiversity	No LSE	None, unless policy does not adequately cover measures to avoid and mitigate impacts	As policy develops it will need to cover any required measures identified at appropriate assessment
Vision	Aspirations for 20 year plan period	No LSE	None, strong wording in relation to the natural environment included	N/A
Objectives	Key strategic objectives to meet the vision	No LSE	None, strong wording in relation to the natural environment included	N/A
Growth options and the emerging growth strategy and settlement hierarchy	Concentration of growth at the main towns, with some additional growth at Sharpness and Wilsloe, plus lower levels at local service centres	LSE	Locations for growth may bring concentration of impact pathways in close proximity to particular sites. Locations need to be tested against evidence such as visitor surveys	Appropriate assessment

Policy Topic	Description	Initial LSE screening	Potential risks	Recommendations and actions
Settlement boundaries	Emerging option for some limited changes	No LSE at this stage	Need to recheck once changes are established, to have certainty that there are no implications	Re-check at next stage
Making places	Each of the parish clusters has a vision and emerging development allocations	LSE	Allocations pose risks in terms of key impact pathways, depending on proximity. See screening table for allocations below.	Appropriate assessment of allocations screened due to proximity, as per screening table for allocations below

Table 4: Screening for likely significant effects – Stroud District Local Plan site allocations at Emerging Strategy stage

Policy topic/allocation	Description	Proposed use	Area (Ha)	400m zone	1km zone	Mitigation zone
Preferred Strategy sites:						
BER006	Northwest of Berkeley	Residential and other	6.5			Severn Estuary
BRI003	Land at Hope Mill	Residential and other	1.2	Rodborough Common	Severn Estuary	Severn Estuary
NAI008	The New Lawn, Nailsworth	Residential and other	2.8			Rodborough Common
NEW001	Sharpness Docks	Residential and other	96	Severn Estuary	Severn Estuary	Severn Estuary
STO002	Magpies site, Oldends Lane	Residential and other	0.1			Severn Estuary
STO004	Land to rear of Regent Street	Residential and other	0.8			Severn Estuary
KIN005/011	South east of Wickwar Road	Residential and other	2.5			
STR004/STR006/STR007	Central River/Canal Corridor	Residential and other	10.8		Rodborough Common	Rodborough Common
STR014	Railway Land/ car parks, Cheapside	Residential and other	1.9		Rodborough Common	Rodborough Common

Policy topic/allocation	Description	Proposed use	Area (Ha)	400m zone	1km zone	Mitigation zone
STR015	Merrywalks Arches, Merrywalks	Residential and other	0.2		Rodborough Common	Rodborough Common
DUR017	The Old Dairy/ Land off Prospect Place	Residential and other	0.4			Severn Estuary
HAR004	Hunts Grove Extension	Residential and other	34.8			Severn Estuary
HFD008	Quedgeley East	Employment	13.8			Severn Estuary
HFD009	South of M5/J12	Employment	12.1			Severn Estuary
KST001	North of Kings Stanley Primary School	Residential and other	1.3			
MIN004	South of Cirencester Road	Residential	2.8			Rodborough Common
MIN005	East of Tobacconist Road	Residential and other	8.6			Rodborough Common
NAI002	North of Avening Road	Employment	1.7			Rodborough Common
NEW002/NEW003a/NEW003b	Land south and east of Sharpness Docks and Newtown	Residential and other	320.1	Severn Estuary	Severn Estuary	Severn Estuary
STR018	Police station/ Magistrates Court, Parliment St	Residential and other	0.4			Rodborough Common
WUE009	North of Katharine Lady Berkeley's School	School/community/open space	3.5			
SLI002/SLI004/SLI005	Land at Wisloe	Residential and other	77			Severn Estuary
LEO007	South of Leonard Stanley Primary School	Residential and other	1			Severn Estuary
NAI012	North of Nympsfield Road/Nortonwood Junction	Residential and other	1.2			Rodborough Common
NWO B	Rooksmoor Mill	Residential and other	1	Rodborough Common	Rodborough Common	Rodborough Common
KST A	Stanley Mills	Residential	1.8			Severn Estuary

Policy topic/allocation	Description	Proposed use	Area (Ha)	400m zone	1km zone	Mitigation zone
EAS007	M5 Junction 13	Sports stadium/employment/community/open space	42			Severn Estuary
BRI008/BRI022	Brimscombe Mill	Residential and other	1.7		Rodborough Common	Rodborough Common
BRI009	Brimscombe Port	Residential and other	3.9		Rodborough Common	Rodborough Common
CAM008	Land adjacent to Tilsdown House	Residential	0.8			Severn Estuary
CAM013/CAM025/CAM026	West of Draycott	Residential and other	45.8			Severn Estuary
CAM014	Coaley Junction	Residential and other	1.8			Severn Estuary
CAM020	Rear of 4-60 Draycott	Employment	1.4			Severn Estuary
DUR002	Land off Acacia Drive/ Oak Drive, Kingshill	Residential	0.5			Severn Estuary
DUR003	1-25 Long Street	Town centre	0.5			Severn Estuary
STO016/STO B1	North/North west of Stonehouse	Residential and other	37.5			Severn Estuary
DUR A	North of Ganzell Lane	Residential and other	5.3			
CAM E	East of River Cam	Residential and other	7			Severn Estuary
PAI A	Washwell Fields	Residential and other	1.1			Cotswold Beechwoods
KIN B	South east of Walkmill Lane	Residential and other	1.8			
NEW006	Land at Focus School-Berkeley Campus, Wanswell	Residential and other	5			Severn Estuary
Other potential option sites:						
BRO002	Whaddon	Residential and other	172.7			Cotswold Beechwoods
HAR001/HAR002	South of Hardwicke	Residential	67.7			Severn Estuary

5. Screening Conclusions and Impact Pathways

5.1 The screening for likely significant effects at Tables 3 and 4 are high level due to the emerging nature of the Local Plan, with policies not yet developed. For this reason, recommended text additions or changes that can strengthen policy or completely avoid risks with the removal of potentially harmful aspects are not yet included. These will be clarifications, corrections or instructions for the development project HRA, that do not require further scrutiny at the appropriate assessment stage, and will be included when the plan is re-screened at the next stage.

5.2 Additionally, at this early stage the consideration of in-combination effects has not yet been progressed as it will be more meaningful and applicable once the plan has progressed and the new visitor survey work is complete.

5.3 The screening table for site allocations at Table 4 has flagged a number of allocations for more in-depth consideration within an appropriate assessment, based on proximity to European sites triggering particular potential impact pathways. These impact pathways are introduced in this section, and then the following appropriate assessment sections will assess these in more detail in relation to the plan policies and allocations at the next plan making stage.

5.4 There is now a strong body of evidence showing how increasing levels of development, even when well outside the boundary of protected wildlife sites, can have negative impacts on the sites and their wildlife interest. Work on grasslands and heathlands (Mallord 2005; Underhill-Day 2005; Liley & Clarke 2006; Clarke, Sharp & Liley 2008; Sharp *et al.* 2008; Clarke & Liley 2013; Clarke *et al.* 2013), woodlands and estuarine and coastal sites (Saunders *et al.* 2000; Randall 2004; Liley & Sutherland 2007; Clarke, Sharp & Liley 2008; Liley 2008; Stillman *et al.* 2009) demonstrates links between housing, development and nature conservation impacts. The following key topics will form the appropriate assessment for the Stroud Local Plan:

Recreation impact concerns

5.5 The impact of recreation on Rodborough Common and the Severn Estuary European sites has already been recognised in previous HRA work and is the reason or the development of the interim strategic mitigation approaches described earlier in this report.

5.6 A number of allocations lie within the strategy zones, and these will be considered in the appropriate assessment, along with any new information such

as discussions currently progressing to establish a better evidence base for the Severn Estuary functionally linked land.

5.7 The nominal 5km zone for Cotswold Beechwoods provides an early indication of allocations that may be of relevance, but this will be revised in light of the pending visitor survey work.

Air quality impact concerns

5.8 Reductions in air quality associated with increased traffic are primarily as a result of increased nitrogen deposition, but are also related to increases in both sulphur and ammonia. Traffic generated air quality reductions can impact on vegetation communities (Bobbink, Hornung & Roelofs 1998; Stevens *et al.* 2011).

5.9 The Design Manual for Roads and Bridges (DMRB) currently advises that the effect of traffic emissions is focussed on the first 200m to the side of a road. There is a declining effect out to 200m and beyond this it is currently agreed that the effects are *de minimis*, i.e. of no consequence against background levels.

5.10 Following a recent case decision from Ashdown Forest (Wealden v SSCLG 2017) it is essential that air quality considerations have appropriate regard for any impacts that may act in-combination in HRA work. An appropriate assessment of air quality should be undertaken with regard for the principles of this recent case.

5.11 The length of roads within 200m of the European sites provides a visual check of how those road sections may relate to allocations within the Stroud Local Plan, in order to flag whether there is a relevant pathway with air quality issues and transport that requires further consideration. At the appropriate assessment stage, consideration of roads within 200m will be made alongside the traffic modelling being undertaken for the Local Plan evidence base.

5.12 Previous plan and some project level HRA work within the District has considered air quality impacts on the European sites and this will also be reviewed as part of the appropriate assessment.

Water issues

5.13 Water issues include water quality and water quantity (i.e. water availability), and flood management. Run-off, outflow from sewage treatments and overflow from septic tanks can result in increased nutrient loads and contamination of water courses. Abstraction and land management can influence water flow and quantity, resulting in reduced water availability at certain periods or changes in the flow. Such impacts particularly relate to aquatic and wetland habitats.

5.14 The appropriate assessment will include advice from Natural England and the Environment Agency in relation to water issues, and will be informed by the SFRA in preparation. It will also consider the sites within 1km of European sites for potential water body connections and run off.

Urban effects

5.15 Urban effects relate to issues where development is close to the European site boundary and is an umbrella term relating to impacts such as cat predation, lighting, fly tipping and vandalism (see Underhill-Day 2005 for review). These impacts are particularly relevant for allocations that are proposed within 400m of European sites, and the site allocations within this close distance will be looked at in more detail within the appropriate assessment.

6. Scope of the Appropriate Assessment

6.1 Once a likely significant effect has been identified, the purpose of the appropriate assessment is to examine evidence and information in more detail to establish the nature and extent of the predicted impacts, in order to answer the question as to whether such impacts could lead to adverse effects on European site integrity.

6.2 An appropriate assessment should be based on evidence, and that can take different forms (direct evidence, comparable evidence, modelling, expert opinion, Natural England's advice etc). In reality however, appropriate assessments are often undertaken with some evidence, but not enough to give absolute or definitive answers. The assessment is therefore often drawing on the knowledge and experience of the assessors, to make scientifically justified decisions about risk.

6.3 The 'precautionary principle' is described in the screening section. It is equally relevant for the appropriate assessment as it is for screening likely significant effects. It is an accepted principle that is embedded within the wording of the legislation, and latterly within case decisions, both European and domestic. Essentially, the appropriate assessment stage is, in accordance with the Habitats Regulations, an assessment that enables a competent authority to only give effect to a plan or authorise/undertake a project after having ascertained that it will not adversely affect the integrity of the European site.

6.4 It is for the competent authority to gather the information and evidence necessary for the appropriate assessment to give them certainty that adverse effects will not occur. Fundamentally that therefore means that in the absence of certainty, the plan or project should not normally proceed (subject to the further exceptional tests explained in Appendix 1). Hence the precaution is in the competent authority's duty to only allow plans or projects to proceed whether there is certainty and to apply a precautionary approach where uncertainties remain. Competent authorities should have enough evidence to satisfy themselves that there are feasible measures to prevent adverse effects. These should be feasible in terms of cost, practical implementation, timeliness and attributing responsibility.

6.5 The following themes will form the appropriate assessment, which will be undertaken when the HRA is updated after Regulation 18 consultation:

- Recreation – residential. Checking that the mitigation strategies in place for Rodborough Common and the Severn Estuary remain fit for purpose for the increased housing from the emerging Stroud

Local Plan, reviewing its progress to date since implementation. Additionally, the appropriate assessment will consider the findings of the Spring 2019 visitor survey work for Cotswold Beechwoods, and make recommendations for any required mitigation measures accordingly.

- Recreation from tourism – checking that the local plan does not give rise to additional recreation impacts as a result of its promotion of tourism growth.
- Other urbanisation effects – checking development site allocations within 400m of any European site for any urbanisation risks other than recreation.
- Water – checking development site allocations within 1km of any European site for any water quality, abstraction or run off risks, potentially including discussion with the water utility company and Environment Agency
- Air Quality – consideration of traffic increases in close proximity to European sites as a result of site allocations
- Biodiversity net gain – ensuring that wider biodiversity is adequately protected and contribution are made through spatial planning to biodiversity restoration. This underpins European site protection and long term maintenance.

6.6 The appropriate assessment sections will be informed by the most up to date information available at the time of preparation, prior to Regulation 19 consultation. The appropriate assessment will be informed by the current site conservation objectives site improvement plans and direct discussion with Natural England officers.

7. Appropriate Assessment

7.1 Section to be completed at future plan making to inform the Regulation 19 consultation stage.

8. Recommendations

8.1 This HRA, undertaken at Emerging Strategy stage of the Stroud Local Plan has recommendations from the screening assessment for key topic areas for consideration at appropriate assessment. These are recreation, air quality, water and urbanisation. Additionally, a holistic approach to biodiversity protection through the plan will be considered.

8.2 The screening stage will be undertaken again for the Regulation 19 stage when the policies are developed and site allocations refined. In the interim, the appropriate assessment themes will be progressed as described in Section 6. Where required, an in-combination assessment will be undertaken, having regard for visitor survey findings, for example.

8.3 Comments from the consultation, particularly from Natural England as statutory consultee on HRA, will be reviewed to inform the next iteration of this HRA report. If necessary additional discussions with Natural England will be undertaken to resolve any issues.

8.4 At the time of preparing this HRA report for the Emerging Strategy, there are active discussions taking place between Stroud District Council, Natural England, surrounding local planning authorities and other key stakeholders in relation to the opportunity to undertake new visitor survey work at Rodborough Common, to undertake a comprehensive visitor survey at Cotswold Beechwoods, and to gather a more robust and up to date evidence base in relation to the Severn Estuary. Each of these will be of fundamental importance to the appropriate assessment stage, and for the Cotswold Beechwoods, may lead to collaborative cross boundary working in developing any required avoidance and mitigation measures for this SAC.

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10. Appendix 1 - The Habitats Regulations Assessment Process

10.1 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2017, which are commonly referred to as the 'Habitats Regulations.' The most recent version of the Habitats Regulations does not affect the principles of European site assessment as defined by the previous Regulations, and which forms the focus of this report. Regulation numbers have changed from the 2010 Regulations.

10.2 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.

10.3 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.

10.4 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.

10.5 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 64 of the Habitats Regulations, as described below.

10.6 The step by step process of HRA 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 63 of the Habitats Regulations sets out the HRA process for plans and projects, which includes development proposals for which planning permission is sought. Additionally, Regulation 105 specifically sets out the process for assessing emerging land use plans.

10.7 The step by step approach to HRA 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

10.8 Throughout all stages, there is a continual consideration of the options available to avoid and mitigate any identified potential impacts. A competent authority may 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.

10.9 For plans, the stages of HRA 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.

10.10 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.

10.11 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.

10.12 Where adverse effects cannot be ruled out, there are further exceptional tests set out in Regulation 64 for plans and projects and in Regulation 107 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.

10.13 In such circumstances where a competent authority considers that a plan or project should proceed under Regulations 64 or 107, 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.

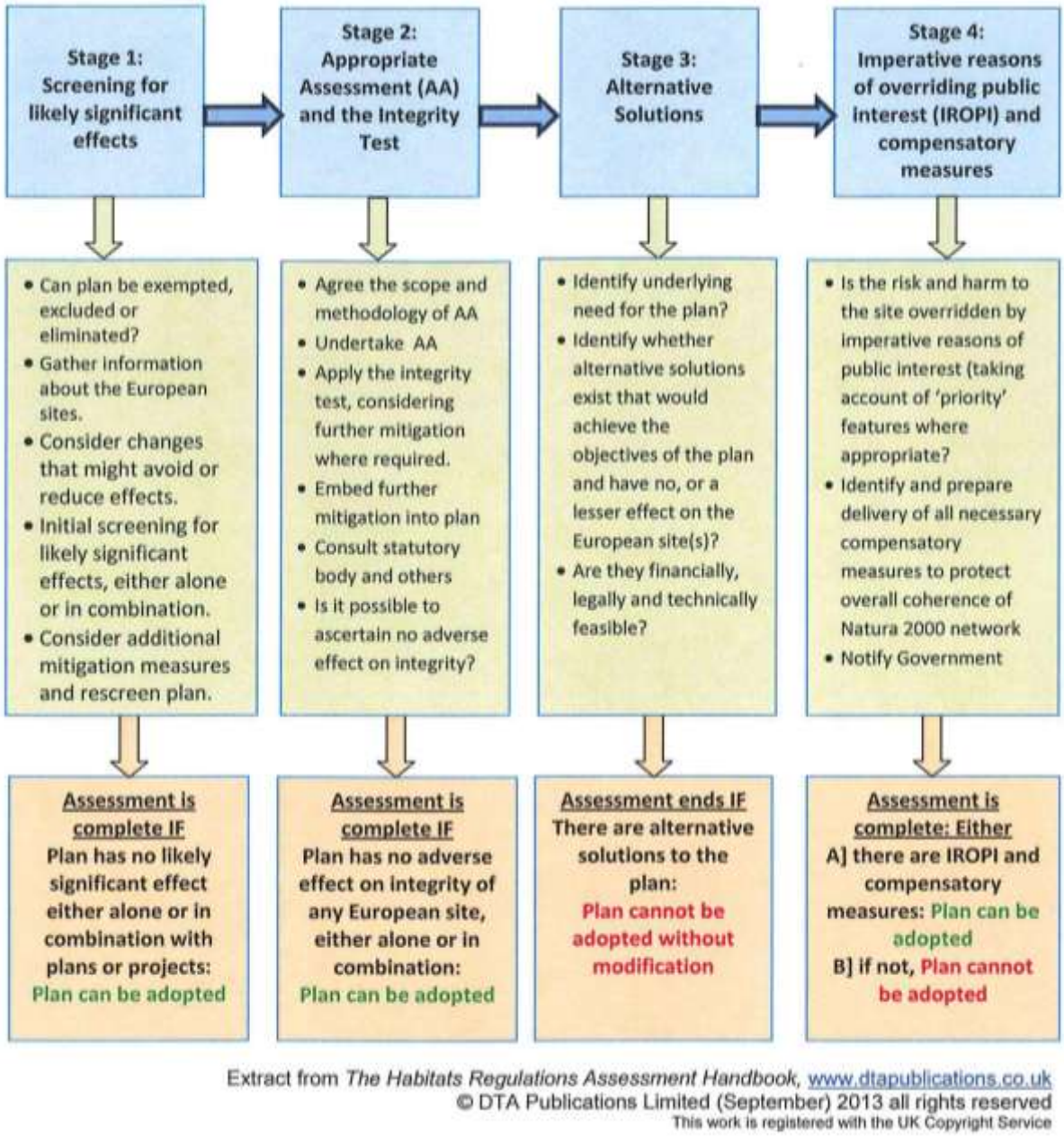

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Figure 1: Outline of the assessment of plans under the Habitat Regulations

11. Appendix 2 –Conservation Objectives

11.1 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.

11.2 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 HRA s 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 the second stage, which is to provide more detailed and site-specific information for each site to support the generic objectives, is now underway. This has been completed for Cotswold Beechwoods, as described below, but not yet finalised for Rodborough Common. Marine site conservation advice provides a similar site specific detail for the Severn Estuary, as described below.

11.3 The new list of generic Conservation Objectives for each European site includes 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 HRAs, and importantly will give greater clarity to what might constitute an adverse effect on a site interest feature.

11.4 In the interim, Natural England advises that HRAs 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.

11.5 For SPAs, the overarching objective is to:

11.6 '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.'

11.7 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.

11.8 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.'

11.9 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.

11.10 Conservation objectives inform any HRA 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.

Cotswold Beechwoods supplementary advice

11.11 The draft supplementary advice for Cotswold Beechwoods SAC has recently been published by Natural England in October 2018. This will be assessed in detail as part of the appropriate assessment, and will inform the required mitigation measures for this site. Key points of relevance for the HRA of the Stroud Local Plan from the draft supplementary advice are:

- A number of veteran trees of importance to the site are outside the site boundary
- Appropriate age structure is affected by a lack of younger trees in some of the underpinning SSSI units
- Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes, leaving little space for air and water which are essential for root growth. Unless carefully managed, activities such as construction, forestry management and trampling by grazing livestock and human feet during recreational activity may all contribute to excessive soil compaction around ancient trees.
- Recreational pressure including walking and mountain biking can be an issue in this SAC.
- The levels of nitrogen and acid deposition are currently exceeding the critical loads for the woodland habitat.
- The calcareous grassland feature is a very small component of this SAC <1% and is fragmented within the woodland, however, extensive areas of calcareous grassland lie adjacent to the SAC.

Severn Estuary marine site conservation advice

11.12 The marine site conservation advice for the Severn Estuary was published in 2009 as a joint publication between Natural England and the Countryside council for Wales (now Natural Resources Wales). The marine site as a whole includes the Severn Estuary SPA and the Severn Estuary Mor Hafren SAC, which is located much further south down the estuary from the Stroud District. Both sites are also listed as Ramsar sites.

11.13 The marine advice includes a detailed description of what is required to maintain the interest features of the site, which will be reviewed as part of the appropriate assessment in terms of whether the targets align with the mitigation strategy in place FOR THE Stroud District.

12. Appendix 3 – The Nature Conservation Interest of the European Sites

12.1 The Stroud District hosts a number of European sites located within and just outside the District. The range of sites, habitats and designations is varied, from estuary to woodland and grassland, with some areas having more than one designation.

12.2 The relevant European sites are summarised in Table 4 below, where the interest features, threats and pressures and links to the relevant conservation objectives are listed.

Table 5: Summary of relevant European sites, their interest features and relevant pressures/threats. NB = non-breeding. Pressures/threats are taken from the site improvement plans (SIP) of relevance to development are listed.

Site	Reason for designation (# denotes UK special responsibility)	Pressures and threats (from relevant SIP)
Severn Estuary SPA and Ramsar site	Waterbird assemblage A394(NB) *Anser albifrons albifrons*: Greater White-fronted Goose A037(NB) *Cygnus columbianus bewickii*: Bewick Swan A048(NB) *Tadorna tadorna*: Common Shelduck A051(NB) *Anas strepera*: Gadwall A149(NB) *Calidris alpina alpina*: Dunlin A162(NB) *Tringa totanus*: Common Redshank The Ramsar listing is for a number of criteria relating to estuarine habitat communities and migratory fish (Salmon *Salmo salar*, Sea Trout *S. trutta*, Sea Lamprey *Petromyzon marinus*, River Lamprey *Lampetra fluviatilis*, Allis Shad *Alosa alosa*, Twaite Shad *A. fallax*, and Eel *Anguilla anguilla*) in addition to the extensive waterfowl assemblage. Full details can be found at: http://jncc.defra.gov.uk/pdf/RIS/UK11081.pdf	The SIP highlights a number of issues and threats, including public access and disturbance, water pollution, air pollution and an additional specific threat listed as being the impact of development, which would cover a range of impact pathways. http://publications.naturalengland.org.uk/publication/4590676519944192
Rodborough Common SAC	H6210# Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)	The SIP highlights public access/disturbance and air pollution as being of relevant to growth, and also under-grazing as an issue, which is in part indirectly related to recreation as grazing management can be affected by recreation. http://publications.naturalengland.org.uk/publication/5525408413908992

Site	Reason for designation (# denotes UK special responsibility)	Pressures and threats (from relevant SIP)
Cotswold Beechwoods SAC	H6210# Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) H9130 *Asperulo-Fagetum* beech forests	The SIP highlights a number of issues and threats, with recreation pressure and air quality being of relevance to growth. http://publications.naturalengland.org.uk/publication/6276086220455936

13. Appendix 4 - Consultation Questions

13.1 The following questions are suggested to enable consultees to respond with comments that will be useful to shape the next iteration of the HRA, and in particular its appropriate assessment section:

1. Does the background information provide a good overview of the current situation in relation to the European sites and previous HRA work?

2. Is there any additional evidence or information that would be useful to inform the HRA?

3. Are there any specific stakeholders that should be contacted in relation to the HRA?

4. Are there any key themes missing from those proposed for the appropriate assessment?

5. Are there any local issues in relation to the European sites that would inform the assessment (e.g. particular access issues)?

6. Are there any measures that you think should be included to help prevent impacts on the European sites in relation to recreation?