

Gerrards Cross Neighbourhood Plan

Habitats Regulations Assessment

Gerrards Cross Town Council

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Quality information

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1. Introduction

Background to the Project

- 1.1 AECOM has been appointed by Gerrards Cross Town Council to assist in producing a report to inform the Local Planning Authority's (Buckinghamshire Council) Habitats Regulations Assessment (HRA) of the potential effects of the Neighbourhood Plan for Gerrards Cross Parish on internationally designated wildlife sites. The objectives of the assessment are to:
 - Identify any aspects of the Neighbourhood Plan that would cause an adverse effect on the integrity of international sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs)) including, as a matter of Government policy, Ramsar sites, either in isolation or in combination with other plans and projects, and
 - To advise on appropriate policy mechanisms for delivering mitigation where such effects were identified.
- 1.2 The HRA of the Gerrards Cross Neighbourhood Plan (GCNP) is required to determine if there are any realistic linking pathways present between an international site and the Neighbourhood Plan and where Likely Significant Effects (LSEs) cannot be screened out, an analysis to inform Appropriate Assessment (AA) to be undertaken to determine if adverse effects on the integrity of the international sites will occur as a result of the Neighbourhood Plan alone or in combination.
- *1.3* In February 2022, a Habitats Regulations Assessment Screening was undertaken of the GCNP¹. This identified that:
 - 'The draft Gerrards Cross neighbourhood plan, which allocates one housing site for 7 homes, in the town centre boundary adjacent the railway station, could have a significant effect on a European Site, in this case the Burnham Beeches Special Area of Conservation (SAC). The net increase in residential development will need to mitigate recreational impacts on Burnham Beeches by providing financial contributions to the Strategic Access Management and Monitoring Plan (SAMM) as detailed in the Burnham Beeches SPD (see document at https://www.chiltern.gov.uk/burnhambeeches).
 - Vulnerabilities of the SAC could be exacerbated by an increase in population from the 7 homes allocated (e.g. air quality, visitor disturbance, recreation), there are anticipated likely significant effects of the draft Neighbourhood Plan policies or areas for development on the Burnham Beeches SAC or the Chilterns Beechwoods SAC. The Neighbourhood Plan is likely to lead to adverse effects on any European sites alone or incombination. There is a requirement to prepare an appropriate assessment so that the neighbourhood plan can mitigate recreational impacts on Burnham Beeches by ensuring development proposals on the

¹ Buckinghamshire Council, Gerrards Cross Draft Neighbourhood Plan – Strategic Environmental Assessment and Habitats Regulations Assessment Screening. Final Screening Outcome. February 2022

allocated site are required to provide financial contributions to the Strategic Access Management and Monitoring Plan (SAMM) as detailed in the Burnham Beeches SPD.'

1.4 Building upon the Gerrards Cross draft Neighbourhood Plan Screening Assessment, this document undertakes full HRA including the screening for LSEs and AA.

Legislation

- 1.5 The need for HRA is set out within the Conservation of Habitats & Species Regulations 2017 (as amended; see Figure 1 below) which relates to the protection of European sites. These can be defined as actual or proposed / candidate Special Areas of Conservation (SAC) or Special Protection Areas (SPA). It is also Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to European sites.
- 1.6 The HRA process applies the precautionary principle² to protected areas. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

² The Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: "When human activities may lead to morally unacceptable harm [to the environment] that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis". People Over Wind and Sweetman v Coillte Teoranta (C-323/17)

Figure 1: The legislative basis for Appropriate Assessment

Conservation of Habitats and Species Regulations 2017 (as amended)

The Regulations state that:

"A competent authority, before deciding to ... give any consent for a plan or project which is likely to have a significant effect on a European site ... shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives... The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site".

With specific reference to Neighbourhood Plans, Regulation 106(1) states that:

"A qualifying body which submits a proposal for a neighbourhood development plan must provide such information as the competent authority [the Local Planning Authority] may reasonably require for the purpose of the assessment under regulation 105... [which sets out the formal process for determination of 'likely significant effects' and the appropriate assessment']."

- 1.7 It is therefore important to note that this report has two purposes:
 - To assist the Qualifying Body (Gerrards Cross Parish Council) in preparing their plan by recommending (where necessary) any adjustments required to protect international sites, thus making it more likely their plan will be deemed compliant with the Conservation of Habitats and Species Regulations 2017 (as amended); and
 - On behalf of the Qualifying Body, to assist the Local Planning Authority (Buckinghamshire Council) to discharge their duty under Regulation 105 (in their role as 'plan-making authority' within the meaning of that regulation) and Regulation 106 (in their role as 'competent authority').
- 1.8 As 'competent authority', the legal responsibility for ensuring that a decision of LSEs is made, for ensuring an AA (where required) is undertaken, and for ensuring Natural England are consulted, falls on the Local Planning Authority and the Neighbourhood Plan examiner. However, they are entitled to request from the Qualifying Body the necessary information on which to base their judgment and that is a key purpose of this report.
- 1.9 In 2018, the 'People Over Wind' European Court of Justice (ECJ) ruling³ determined that 'mitigation' (i.e. measures that are specifically introduced to avoid or reduce the harmful effects of a plan or project on international sites) should not be taken into account when forming a view on LSEs. Mitigation should instead only be considered at the AA stage. AA is not a technical term: it simply means 'an assessment that is appropriate' for the plan or project in question. As such, the law purposely does not prescribe what it should consist of or how it should be presented; these are decisions to be made on a case by case basis

³ Case C-323/17

by the Competent Authority. An amendment was made to the Neighbourhood Planning Regulations in late 2018 which permitted Neighbourhood Plans to be made if they required appropriate assessment.

1.10 Over the years the phrase 'Habitats Regulations Assessment' has come into wide currency to describe the overall process set out in the Conservation of Habitats and Species Regulations from screening through to Imperative Reasons of Overriding Public Interest (IROPI). This has arisen in order to distinguish the process from the individual stage described in the law as an 'Appropriate Assessment'. Throughout this report we use the term Habitats Regulations Assessment for the overall process.

Report Layout

1.11 Chapter 2 of this report explains the process by which the HRA has been carried out. Chapter 3 explores the impact pathways relevant to the GCNP. Chapter 4 summarises the LSEs test of the policies and site allocations of the Plan considered 'alone' and 'in-combination (all policies in the GCNP are screened for LSEs in Appendix B). Chapter 5 contains the AA of impact pathways for which LSEs could not be excluded. Chapter 6 contains the main conclusions and recommendations made in the AA.

2. Methodology

Introduction

2.1 This section sets out the approach and methodology for undertaking the HRA. HRAs itself operate independently from the Planning Policy system, being a legal requirement of a discrete Statutory Instrument. Therefore, there is no direct relationship to the National Planning Policy Framework (NPPF) and the 'Tests of Soundness'.

A Proportionate Assessment

- 2.2 Project-related HRA often requires bespoke survey work and novel data generation in order to accurately determine the significance of effects. In other words, to look beyond the risk of an effect to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures.
- 2.3 However, the draft Department of Levelling Up Housing and Communities (DLUHC) guidance⁴ (described in greater detail later in this chapter) makes it clear that when implementing HRA of land-use plans, the AA should be undertaken at a level of detail that is appropriate and proportional to the level of detail provided within the plan itself:
 - "The comprehensiveness of the [Appropriate] assessment work undertaken should be proportionate to the geographical scope of the option and the nature and extent of any effects identified. An AA need not be done in any more detail, or using more resources, than is useful for its purpose. It would be inappropriate and impracticable to assess the effects [of a strategic land use plan] in the degree of detail that would normally be required for the Environmental Impact Assessment (EIA) of a project."
- 2.4 More recently, the Court of Appeal⁵ ruled that providing the Council (in their role as Competent Authority) was duly satisfied that proposed mitigation could be "achieved in practice" then this would suffice to meet the requirements of the Habitat Regulations. This ruling has since been applied to a planning permission (rather than a Plan document)⁶. In this case the High Court ruled that for "a multistage process, so long as there is sufficient information at any particular stage to enable the authority to be satisfied that the proposed mitigation can be achieved in practice it is not necessary for all matters concerning mitigation to be fully resolved before a decision maker is able to conclude that a development will satisfy the requirements of reg 61 of the Habitats Regulations".
- 2.5 In other words, there is a tacit acceptance that AA can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers (see Figure 2 below).

⁴ Department of Levelling Up Housing and Communities (DLUHC), was CLG (2006) Planning for the Protection of European Sites, Consultation Paper

⁵ No Adastral New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17th February 2015

⁶ High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015

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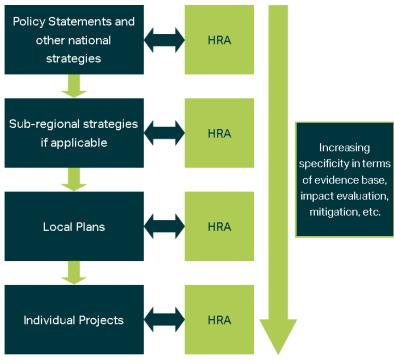


Figure 2: Tiering in HRA of Land Use Plans

- 2.6 For a plan the level of detail concerning the allocated developments is usually insufficient to make a highly detailed assessment of significance of effects. For example, precise and full determination of the impacts of a new settlement will require extensive details relating to the design of the development, including layout of greenspace and type of development to be delivered in particular locations, yet these data will not be decided until subsequent stages.
- 2.7 The most robust and defensible approach given that few details are available at this stage is to make use of the precautionary principle. In other words, the plan is never given the benefit of the doubt (within reasonable limits); it must be assumed that a policy is likely to have an impact upon a European site unless it can be clearly established otherwise.

The Process of HRA

- 2.8 The HRA is being carried out in the continuing absence of formal central Government guidance. The former DCLG (now DLUHC) released a consultation paper on AA of Plans in 2006⁷. No further formal guidance has emerged from the DLUHC since. Natural England have produced their own informal internal guidance and Natural Resources Wales have produced guidance for Welsh authorities on *"the appraisal of plans under the Habitats Regulations"* as a separate guidance document aimed at complementing and supplementing the guidance / advice provided within Technical Advice Note 5: Nature Conservation and Planning⁸.
- 2.9 Figure 3 outlines the stages of HRA according to the draft DLUHC guidance (which, as Government guidance applicable to English authorities is considered to take precedence over other sources of guidance). The stages are essentially

 ⁷ DLUHC was CLG (2006) Planning for the Protection of European Sites, Consultation Paper
 ⁸ Welsh Government. Technical Advice Note 5, Nature Conservation and Planning (2009) <u>http://gov.wales/topics/planning/policy/tans/tan5/?lang=en</u> [accessed 01/12/2016]

iterative, being revisited as necessary in response to more detailed information, recommendations and relevant changes to the plan until no LSEs remain.

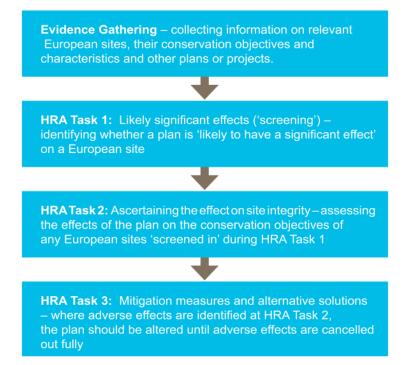


Figure 3: Four-Stage Approach to Habitats Regulations Assessment

HRA Task 1: Test of Likely Significant Effect (LSEs)

2.10 Following evidence gathering, the first stage of any HRA is a LSEs test - essentially a risk assessment to decide whether the full subsequent stage known as AA is required. The essential question is:

"Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"

- 2.11 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant impacts upon European sites, usually because there is no mechanism for an interaction with European sites. This task is undertaken in Chapter 4 of this report.
- 2.12 In evaluating significance, AECOM have relied on professional judgment and experience of working with other local authorities on similar issues. The level of detail concerning developments that will be permitted under land use plans is rarely sufficient to allow for a detailed quantification of effects. Therefore, a precautionary approach has been taken (in the absence of more precise information) assuming as the default position that if a LSE cannot be confidently ruled out, then the AA is triggered. This is in line with the April 2018 court ruling relating to 'People Over Wind' where mitigation and avoidance measures are to be included at the next stage of assessment.

HRA Task 2: Appropriate Assessment (AA)

2.13 Where it is determined that a conclusion of 'no LSE' cannot be drawn, the analysis must proceed to the next stage of HRA known as AA. Case law has clarified that 'AA' is <u>not</u> a technical term. In other words, there are no particular

technical analyses, or level of technical analysis, that are classified by law as belonging to AA rather than determination of LSEs.

- 2.14 During July 2019 the Ministry of Housing, Communities and Local Government published guidance for AA⁹. Paragraph: 001 Reference ID: 65-001-20190722m explains: 'Where the potential for likely significant effects cannot be excluded, a competent authority must make an appropriate assessment of the implications of the plan or project for that site, in view of the site's conservation objectives. The competent authority may agree to the plan or project only after having ruled out adverse effects on the integrity of the habitats site. Where an adverse effect on the site's integrity cannot be ruled out, and where there are no alternative solutions, the plan or project can only proceed if there are imperative reasons of over-riding public interest and if the necessary compensatory measures can be secured.'
- 2.15 As this analysis follows on from the LSEs screening, there is a clear implication that the analysis will be more detailed than undertaken at the previous stage and one of the key considerations during AA is whether there is available mitigation that would entirely address the potential effect. In practice, the AA takes any policies or allocations that could not be dismissed following the high-level screening analysis and analyses the potential for an effect in more detail, with a view to concluding whether there would be an adverse effect on integrity (in other words, disruption of the coherent structure and function of the European site(s)).
- 2.16 A decision by the European Court of Justice¹⁰ concluded that measures intended to avoid or reduce the harmful effects of a proposed project on a European site may no longer be taken into account by competent authorities at the LSEs screening stage of HRA. The UK is no longer part of the European Union. However, as a precaution, it is assumed that EU case law regarding HRA will still be considered informative jurisprudence by the UK courts. That ruling has therefore been considered in producing this HRA.
- 2.17 Also, in 2018 the Holohan ruling¹¹ was handed down by the European Court of Justice. Among other provisions paragraph 39 of the ruling states that 'As regards other habitat types or species, which are present on the site, but for which that site has not been listed, and with respect to habitat types and species located outside that site, ... typical habitats or species must be included in the appropriate assessment, if they are necessary to the conservation of the habitat types and species listed for the protected area' [emphasis added]. This has been taken into account in the HRA process.

HRA Task 3: Avoidance and Mitigation

2.18 Where necessary, measures are recommended for incorporation into the GCNP in order to avoid or mitigate adverse effects on European sites. There is considerable precedent concerning the level of detail that a Neighbourhood Plan (NP) document needs to contain regarding mitigation for recreational impacts on European sites. The implication of this precedent is that it is not necessary for all measures that will be deployed to be fully developed prior to adoption of the NP,

⁹Available at: <u>https://www.gov.uk/guidance/appropriate-assessment#what-are-the-implications-of-the-people-over-wind-judgment-for-habitats-regulations-assessments</u> [Accessed: 020/01/2022].

¹⁰ People Over Wind and Sweetman v Coillte Teoranta (C-323/17)

¹¹ Case C-461/17

but it must provide an adequate policy framework within which these measures can be delivered.

2.19 When discussing 'mitigation' for a NP document, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the details of the mitigation measures themselves since the NP is a relatively high-level policy document.

The Scope

- 2.20 There is no guidance that dictates the physical scope of an HRA of a plan. Therefore, in considering the physical scope of the assessment we were guided primarily by the identified impact pathways rather than by arbitrary "zones", i.e. a source-pathway-receptor approach. Current guidance suggests that the following international sites should be included in the scope of assessment:
 - All sites within the GCNP area; and
 - Other sites shown to be linked to development within the Gerrards Cross Parish through a known pathway (discussed below).
- 2.21 Briefly defined, pathways are routes by which development can lead to an effect upon an international site. In terms of the second category of international site listed above, DLUHC guidance states that the AA should be "proportionate to the geographical scope of the [plan policy]" and that "an AA need not be done in any more detail, or using more resources, than is useful for its purpose" (DLUHC was CLG, 2006, p.6).
- 2.22 The full details of all European sites discussed in this document, including their qualifying features, Conservation Objectives and threats / pressures to site integrity can be found in Appendix A, whilst their locations are illustrated in Appendix A, Figure A1. The European sites considered in this HRA are summarised in Table 1. It is to be noted that the inclusion of a European site or pathway below does not indicate that an effect will necessarily occur, but rather that these sites / pathways are investigated because there is a potential for interaction.

Table 1: Physical Scope of the HRA

International Site	Designated	Location		pact pathways potentially king to the GCNP		ther vulnerabilities listed in atural England's SIP
Burnham Beeches SAC		At its closest 2km south-west of Gerrards Cross Parish	-	 Public access / disturbance Atmospheric pollution: risk of atmospheric nitrogen deposition 		Habitat fragmentation Deer Species decline
Childerne	Baashwaada	At its closest energy 10 Flow	-	Water quantity, level and flow Public access / disturbance	-	Invasive species Forestry and woodland
Chilterns SAC	Beechwoods	At its closest approx. 10.5km west of Gerrards Cross Parish	-	rublic access / disturbance	-	management Deer
					- -	Changes in species distributions Invasive species Disease
					-	Air pollution: Impact of atmospheric nitrogen deposition

The 'in Combination' Scope

- 2.23 It is a requirement of the Regulations that the impacts and effects of any land use plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the internationally designated site(s) in question.
- 2.24 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation i.e. to ensure that those projects or plans which in themselves have minor impacts are not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in combination assessment is therefore of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. The overall approach is to exclude the risk of there being unassessed likely significant effects in accordance with the precautionary principle. This was first established in the seminal Waddenzee¹² case.
- 2.25 For the purposes of this assessment, we have determined that, due to the nature of the identified impacts, the key other plans and projects with potential for in combination effects are those that are associated with the following impact pathways: Disturbance (including recreational pressure), atmospheric pollution and water quantity, level and flow. The following plans have been assessed for their in-combination impact to interact with the Neighbourhood Plan:
 - South Buckinghamshire District Local Plan (2011)
 - Chiltern District Local Plan (2011)
 - Three Rivers District Council Local Plan (Regulation 18 2021)
 - Royal Borough of Windsor and Maidenhead Borough Local Plan 2013 2033
 - Wycombe District Local Plan 2019
 - Buckinghamshire Minerals and Waste Local Plan 2016-2036
 - Buckinghamshire County Council Transport, Economy and Environment Local Transport Plan 4 March 2016 2036

¹² Waddenzee case (Case C-127/02, [2004] ECR-I 7405)

3. Background to Impact Pathways

- 3.1 The HRA of the SBCS has been considered in producing this HRA and identifying the potential pathways of impact. The following pathways of impact are considered relevant to the HRA of the GCNP:
 - Recreational pressure;
 - Atmospheric pollution; and
 - Water quantity, level and flow.

Recreational Pressure

- 3.2 Development near to international sites has the potential to result in increased recreational use of these sites. The types of recreational pressures differ between European sites, dependent on site-specific qualifying features and sensitivities. For sites designated for woodland, impacts of recreational use may encompass:
 - Mechanical / abrasive damage; and
 - Nutrient enrichment.

Mechanical and Abrasive Damage

- 3.3 Most types of terrestrial internationally designated site can be affected by trampling, which causes soil compaction and erosion. Motorcycle scrambling and off-road vehicle use are particularly significant contributors to erosion. There have been several papers published that empirically demonstrate that damage to vegetation in woodlands and other habitats can be caused by vehicles, walkers, horses and cyclists:
 - Wilson and Seney¹³ examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
 - Cole^{14,15} conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow and grassland communities (each tramped between 0–500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks, indicating some vegetation recovery. Differences in plant morphological characteristics were found to explain more variation in response between different

¹³ Wilson, J.P. & Seney, J.P. (1994) Erosional impact of hikers, horses, motorcycles and off road bicycles on mountain trails in Montana. *Mountain Research and Development* 14:77-88.

¹⁴ Cole, D.N. (1995a) Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. *Journal of Applied Ecology* 32: 203-214.

¹⁵ Cole, D.N. (1995b) Experimental trampling of vegetation. II. Predictors of resistance and resilience. *Journal of Applied Ecology* 32: 215-224.

vegetation types than soil and topographic factors. Low-growing, matforming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks but recovered well after one year, indicating that these were most resilient to trampling in the long-term. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling, and it was concluded that these would be the least tolerant of a regular cycle of disturbance.

- Cole¹⁶ conducted a follow-up study (in four vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier tramplers caused a greater reduction in vegetation height than lighter tramplers, but there was no difference in effect on cover.
- Cole and Spildie¹⁷ experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse traffic was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance, but recovered rapidly. Higher trampling intensities caused more disturbance.

Nutrient Enrichment

- 3.4 A major concern for nutrient-poor terrestrial habitats (e.g. ancient woodland, heathland) is nutrient enrichment associated with dog fouling (addressed in various reviews, e.g.¹⁸). It is estimated that dogs will defecate within 10 minutes of starting a walk and therefore most nutrient enrichment arising from dog faeces will occur within 400m of a site entrance. In contrast, dogs will urinate at frequent intervals during a walk, resulting in a more widespread distribution of urine. For example, in Burnham Beeches National Nature Reserve it is estimated that 30,000 litres of urine and 60 tonnes of dog faeces are deposited annually¹⁹. While there is limited information on the chemical constituents of dog faeces, nitrogen is one of its main components²⁰.
- 3.5 A recent study has published further compelling evidence on the relative impact of N and phosphorus (P) deposition arising from dogs. Using 487 direct-count censuses from four peri-urban forests and nature reserves, the modelling data suggested that canine fertilisation rates amount to 11 kg N and 5 kg P per hectare

¹⁶ Cole, D.N. (1995c) Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah.

¹⁷ Cole, D.N. & Spildie, D.R. (1998) Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management* 53: 61-71.

¹⁸ Taylor K., Anderson P., Taylor R.P., Longden K. & Fisher P. (2005). Dogs, access and nature conservation. English Nature Research Report, Peterborough.

¹⁹ Barnard A. (2003). Getting the facts – Dog walking and visitor number surveys at Burnham Beeches and their implications for the management process. *Countryside Recreation* **11**:16-19.

²⁰ Taylor K., Anderson P., Liley D. & Underhill-Day J.C. (2006). Promoting positive access management to sites of nature conservation value: A guide to good practice. English Nature / Countryside Agency, Peterborough and Cheltenham.

per year respectively²¹. These amounts are significant when compared to atmospheric nitrogen deposition rates and the offsetting achievable through traditional habitat management techniques (e.g. cutting and removal of hay). The nitrogen deposition by dogs is particularly significant given the nitrogen Critical Load of 10-20 kg N/ha/yr provided for Atlantic beech forests (qualifying feature of the Burnham Beeches SAC) on the Air Pollution Information System (APIS). This implies that the minimum CL of a site may be exceeded by N nitrogen deposition from dogs alone, before atmospheric sources are considered. Nutrient availability is the major determinant of plant community composition and the effect of dog defecation in sensitive habitats is comparable to a high-level application of fertiliser, potentially resulting in a shift towards plant communities that are more typical of improved grasslands.

Summary

- 3.6 The only European site within 10km of Gerrards Cross Parish is designated for a habitat that is sensitive to recreational pressure. The increase in residential development allocated in the GCNP will lead to an increase in the local population and demand for access to outdoor spaces. Overall, the following European site requires further consideration:
 - Burnham Beeches SAC (the SAC lies approx. 1.9km to the south-west of the parish.

Atmospheric Pollution

3.7 The main pollutants of concern for international sites are oxides of nitrogen (NOx), ammonia (NH₃) and sulphur dioxide (SO₂). Ammonia can be directly toxic to vegetation, and research suggests that this may also be true for NOx at very high concentrations. More significantly, greater NOx or ammonia concentrations within the atmosphere lead to greater rates of nitrogen deposition to vegetation and soils. An increase in the deposition of nitrogen from the atmosphere is generally regarded to increase soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats.

Pollutant	Source	Effects on habitats and species
Acid deposition	SO ₂ , NOx and ammonia all contribute to acid deposition. Although future trends in SO ₂ emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, it is likely that increased NOx emissions may cancel out any gains produced by reduced SO ₂ levels.	Can affect habitats and species through both wet (acid rain) and dry deposition. Some sites will be more at risk than others depending on soil type, bed rock geology, weathering rate and buffering capacity.
Ammonia (NH₃)	Ammonia is released following decomposition and volatilisation of	Adverse effects are as a result of nitrogen deposition leading to eutrophication. As

Table 2: Main sources and effects of air pollutants on habitats and species

²¹ De Frenne P., Cougnon M., Janssens G.P.J. & Vangansbeke P. (2022). Nutrient fertilization by dogs in peri-urban ecosystems. *Ecological Solutions and Evidence* **3**, <u>https://doi.org/10.1002/2688-8319.12128</u>

	animal wastes. It is a naturally occurring trace gas, but levels have increased considerably with the expansion in agricultural livestock numbers. Ammonia reacts with acid pollutants such as the products of SO ₂ and NO _x emissions to produce fine ammonium (NH ₄ +) - containing aerosol which may be transferred much longer distances (and can therefore be a significant trans- boundary issue).	emissions mostly occur at ground level in the rural environment and NH ₃ is deposited rapidly, some of the most acute problems of NH ₃ deposition are for small relict nature reserves located in intensive agricultural landscapes.
Nitrogen oxides (NO _{x)}	Nitrogen oxides are mostly produced in combustion processes. About one quarter of the UK's emissions are from power stations, one half from motor vehicles, and the rest from other industrial and domestic combustion processes.	Deposition of nitrogen compounds (e.g. nitrates (NO ₃), nitrogen dioxide (NO ₂) and nitric acid (HNO ₃)) can lead to soil and freshwater acidification. In addition, NO _x can cause eutrophication of soils and water. This alters the species composition of plant communities and can eliminate sensitive species.
Nitrogen (N) deposition	The pollutants that contribute to nitrogen deposition derive mainly from NO _X and NH ₃ emissions. These pollutants cause acidification (see also acid deposition) as well as eutrophication.	Species-rich plant communities with relatively high proportions of slow-growing perennial species and bryophytes are most at risk from nitrogen eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated nitrogen levels. Nitrogen deposition can also increase the risk of damage from abiotic factors (e.g. drought, frost).
Ozone (O ₃)	A secondary pollutant generated by photochemical reactions from NO _x and volatile organic compounds (VOCs). These are mainly released by the combustion of fossil fuels. The increased combustion of fossil fuels in the UK has led to a large rise in background ozone concentration, increasing the number of days when levels across the region are above 40ppb. Reducing ozone pollution is believed to require action at an international level to reduce levels of the precursors that form ozone.	Concentrations of O ₃ above 40ppb can be toxic to humans and wildlife and can affect buildings. Increased ozone concentrations may lead to a reduction in growth of agricultural crops, decreased forest production and altered species composition in semi-natural plant communities.
Sulphur dioxide (SO ₂₎	Main sources of SO ₂ emissions are electricity generation, industry and domestic fuel combustion. May also arise from shipping and	Wet and dry deposition of SO ₂ acidifies soils and freshwater, and alters the species compositions of plant and associated animal communities. The

	increased concentrations in bus SO ₂ emissions have substantially in the U 1980s.	e decreased	deposition	levels			
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- 3.8 Sulphur dioxide emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil. Ammonia emissions are dominated by agriculture, with some chemical processes also making notable contributions. Emissions of nitrogen oxides are dominated by the output of vehicle exhausts. Within a 'typical' housing development, by far the largest contribution to nitrogen oxides (92%) will be made by the associated road traffic. Other sources, although relevant, are of minor importance in comparison²². Emissions of nitrogen oxides could therefore be reasonably expected to increase as a result of greater vehicle use as an indirect effect of the Plan.
- 3.9 According to the Department of Transport's Transport Analysis Guidance, *"beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant"*²³. This distance has therefore been used in this HRA to determine whether international sites are likely to be significantly affected by development progressing under the GCNP (see Figure 4).

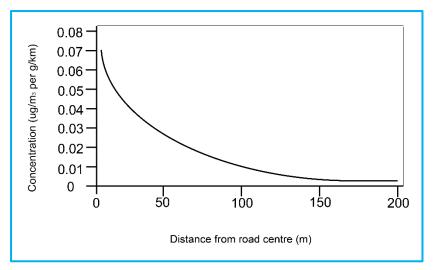


Figure 4: Traffic contribution to pollutant concentrations in relation to the distance from a road (DfT)

- 3.10 According to the World Health Organisation, the critical NOx concentration (critical threshold) for the protection of vegetation is 30 µgm⁻³; the threshold for sulphur dioxide is 20 µgm⁻³. In addition, ecological studies have determined 'critical loads'²⁴ of atmospheric nitrogen deposition (that is, NOx combined with ammonia NH₃).
- 3.11 The Burnham Beeches SAC, the only air-quality sensitive European site within 10km of Gerrards Cross Parish, has a long-standing issue with atmospheric pollution and potential impacts on the resident ecosystem. The increase in

²² Proportions calculated based upon data presented in Dore *et al.* 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. <u>http://www.airquality.co.uk/archive/index.php</u>

²³ www.webtag.org.uk/archive/feb04/pdf/feb04-333/pdf

²⁴ The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur.

residential development allocated in the GCNP will lead to an increase in the local population and, potentially, the number of commuter journeys associated with the parish. Overall, the following European site requires further consideration:

• Burnham Beeches SAC (the SAC lies approx. 1.9km to the south-west of the parish.

Water Quantity, Level and Flow

- 3.12 The water supply rate to and water level within European sites are important determinants of their overall condition and associated qualifying features. Hydrological processes are critical in influencing habitat characteristics and all vegetation is dependent on adequate water supply to varying degrees.
- 3.13 Maintaining a steady water supply is of critical importance for many SPAs, SACs and Ramsars. A constant supply of water (within natural seasonal fluctuations) is fundamental to maintaining the ecological integrity of sites. For example, too little water supply from surface waterbodies and groundwater sources might lead to the drying of terrestrial habitats. Woodland, particularly ancient and veteran trees, depend on water for an adequate supply of nutrients. There are two mechanisms through which urban development might negatively affect the water supply to European sites:
 - The supply of new housing with potable water may require increased abstraction of water from surface waters and groundwater bodies. Depending on the level of water stress in the geographic region, this may reduce the water levels in European sites sharing the same hydrological catchment.
 - The proliferation of impermeable surfaces in urban areas increases the volume and speed of surface water runoff. As traditional drainage systems often cannot cope with the volume of stormwater, sewer overflows are designed to discharge excess water directly into watercourses. Often this pluvial flooding results in downstream inundation of watercourses and the potential flooding of wetland habitats. However, given the relatively long distance between Gerrards Cross Parish and the relatively small development allocated, surface water runoff is not considered further in this HRA.
- 3.14 While the Burnham Beeches SAC is not considered a typical water-dependent site, several studies have shown the site to be at risk from inadequate water supply. The increase in residential development allocated in the GCNP will lead to an increased demand for potable water, which may require an increase to current abstraction consents. Overall, the following European site requires further consideration:
 - Burnham Beeches SAC (the SAC lies approx. 1.9km to the south-west of the parish.

4. Screening for Likely Significant Effects (LSEs)

4.1 This chapter provides a high-level assessment of potential impacts arising from the GCNP and evaluates whether there is a realistic pathway linking to European sites. Where LSEs cannot be excluded using the best available evidence base, the relevant impact pathways need to be taken forward to Appropriate Assessment (AA) for a more detailed analysis.

Recreational Pressure

Burnham Beeches SAC

- 4.2 The Burnham Beeches SAC is designated for Atlantic acidophilous beech forests with *llex* and sometimes *Taxus* in the shrublayer. The site encompasses many old pollards with associated beech *Fagus sylvatica* and oak *Quercus* spp. high forest. Part of the SAC has open public access and has a long history as a popular recreational destination, attracting over 500,000 visitors per year. The SAC harbours a large number of veteran trees which may lead to visitors leaving paths for a closer inspection of trees and / or climbing activities. Root zones of ancient trees are sensitive to the direct and indirect effects of trampling, including physical injury due to abrasion and soil compaction. Plants are affected by the compaction of soil grains as this reduces the space available for air, water and associated nutrients. The Supplementary Advice on Conservation Objectives (SACO) states that a target for the SAC is to '*maintain good soil structure within and around the root zones of the mature and ancient tree cohort.*'
- 4.3 Natural England's Site Improvement Plan (SIP) for the SAC identifies recreational pressure as a significant threat / pressure to the veteran trees. The GCNP allocates seven net new dwellings within approx. 2.4km of the Burnham Beeches SAC, which is well within a typical core recreational catchment for inland terrestrial sites. Overall, LSEs of the GCNP on the Burnham Beeches SAC cannot be excluded. The site is screened in for more detailed AA in relation to this impact pathway.

Chilterns Beechwoods SAC

4.4 The *Asperulo-Fagetum* beech forests are the primary qualifying feature in the Chilterns Beechwoods SAC that is sensitive to recreational pressure. As mentioned in the SACO for the SAC, it is essential to maintain the soil structure within the root zones of mature / ancient trees. Recreational trampling can result in a range of negative impacts to tree roots, including direct physical damage and indirect effects through soil compaction. Compacted soils, where individual chalk or clay particles are pressed together, offer reduced space for air and water (both of which are integral to root and, ultimately, tree health). An additional issue referred to in Natural England's Site Improvement Plan is the removal and / or shifting of deadwood, with potential impacts on saproxylic invertebrates including the stag beetle, a qualifying species of the SAC.

4.5 The Chilterns Beechwoods SAC is a composite site that lies relatively far from Gerrards Cross, with the closest component woodland being the Bisham Woods SSSI approx. 10.5km to the west of the parish. Therefore, Gerrards Cross Parish lies beyond a typical core recreational catchment (between 5 – 7km) of inland terrestrial sites. However, a recent report assessing recreational impacts and visitor data has established a Zone of Influence (ZoI) of 12.6km for the Chilterns Beechwoods SAC. Adopting this ZoI places the parish within the geographic region from visitors may be drawn to the site, although it is noted that the contribution of the parish is likely to be minor compared to the overall recreational burden within the SAC. However, LSEs of the GCNP on the Chilterns Beechwoods SAC regarding recreational pressure cannot be excluded incombination. Therefore, as a precautionary measure, this site has been screened in for Appropriate Assessment in relation to this impact pathway.

Atmospheric Pollution

Burnham Beeches SAC

- 4.6 According to the Air Pollution Information System (APIS), the Atlantic acidophilous beech forests with *llex* and sometimes also *Taxus* in the shrublayer are sensitive to atmospheric nitrogen deposition with a nitrogen Critical Load (CL) of 10-20 kg N/ha/yr. Exceedances of the CL may lead to changes in ground vegetation and mycorrhiza (fungi that grow in association with plant roots), nutrient imbalance and changes in soil fauna. The current maximum nitrogen deposition amounts to 30.1 kg N/ha/yr, far exceeding the maximum CL for the site. The Burnham Beeches SAC has also been determined to be at high risk of impacts from nitrogen oxides (NOx) emitted from road traffic²⁵, with excess deposition potentially leading to soil / water acidification as well as direct damage to mosses, liverworts and lichens. A NOx annual mean Critical Level of 30 μg/m³ is adopted for all vegetation, but the current reported maximum NOx concentration within the SAC is 18.57 μg/m³.
- 4.7 Furthermore, the ecosystem present within the SAC also harbours lichens and bryophytes which are sensitive to high ammonia (NH₃) levels, for which a Critical Level of 1 μg/m³ is widely adopted. Current maximum NH₃ levels within the SAC are 1.8 μg/m³, thus far exceeding the adopted Critical Level. Natural England's SIP lists atmospheric pollution as the main threat to site integrity, specifying that nutrient deposition is a significant contributing factor to changes in epiphytic lichen communities. The SIP also states that *'nitrogen deposition may also be affecting tree health, resulting in changes in tree canopy structure and other effects.'*
- 4.8 Epiphytic lichens, stable symbiotic relationships between fungi and algae / cyanobacteria, are key features of the SAC beech woodland. Lichens derive their moisture and nutrients directly from the air and are, therefore, widely considered to be excellent indicators of ecological change in response to air pollution. Typically, increased pollution levels result in the loss of certain lichen species and shifts in community composition. Given the sensitivity of lichens to air quality changes, they are often referred to as an early warning system to pollution affecting slower-responding fauna. Lichen survey data for Burnham Beeches

²⁵ Smithers R., Brace S., Brookes D., Tsagatakis L. & Bloomfield M. (2016). Potential risks of impacts of nitrogen oxides from road traffic on designated nature conservation sites. Natural England Commissioned Report NECR200.

indicate an increase of two to 13 species per tree between the early 1990s and 2013, which has been largely attributed to decreased SO₂ emissions across western Europe. However, the lichen report also highlights that in 2013 lichen species favouring a higher pH bark (e.g. *Bacidia neosquamulsosa*) were more frequent and many old tree trunks harboured lichen assemblages similar to those present in roadside environments. Recent botanical surveys have also shown that SAC trees are generally in poor health as indicated by thinning canopies and stunted shoot growth. <u>Generally, the existing concerns over the health of ecological communities within the SAC mean that any further deterioration in air quality should be avoided as this would likely result in adverse effects on site integrity.</u>

- 4.9 At its closest point, the SAC lies approx. 1.9km from the boundary of Gerrards Cross Parish, well within the average commuter distance of 10.1km for a UK resident. The SAC itself also lies within 200m of the A355 (at its closest at approx. 32m distance), which implies that road traffic is likely to contribute significantly to the pollutant load within the site. The A355 connects the M40 (which runs to the south of the parish) with other parts of South Bucks District and adjoining authorities (e.g. Slough). Overall, it is considered likely that the A355 represents a commuter route for current (and future) residents of Gerrards Cross Parish.
- 4.10 Atmospheric pollution is typically treated as a strategic issue with an inherent incombination scope (which also requires strategic mitigation efforts) that lies beyond the remit of Parish Councils. Notwithstanding this, given the significant air quality issues in the SAC, the site is considered further as a precautionary measure.
- 4.11 Road traffic statistics from the Department for Transport at manual count point 80757 provide Annual Average Daily Traffic (AADT) of 9,043 cars, 1,960 Light Goods Vehicles (LGVs) and 492 Heavy Goods Vehicles (HGVs). This count point lies close to the location where the A355 is at its shortest distance from the Burnham Beeches SAC. It is considered that the 7 dwellings allocated in the GCNP will make a negligible contribution to the air quality in the SAC for the following reasons:
 - Even if residents of all 7 dwellings would commute along the A355, this would result in a maximum of an additional 14 two-way journeys past sensitive habitats in the SAC. In light of an AADT of 11,582 comprising all motor vehicles, this increase in traffic flow of approx. 0.001%²⁶ is likely to be well within the normal variation in daily traffic flows on the A355;
 - As highlighted above, atmospheric pollution is an issue across large spatial scales, involving development across multiple Local Planning Authorities (LPAs). The residential development allocated in the GCNP is negligible in comparison to the housing growth that will be allocated in the emerging overarching Chilterns and South Bucks Local Plan (CSBLP). A total quantum of 15,260 dwellings was allocated in the draft CSBLP, although it is noted that the Local Plan has now been withdrawn. Due to the large number of dwellings allocated at the LPA-level, traffic and air quality modelling will need to be undertaken for its supporting HRA. This will also account for the small quanta of growth delivered through

²⁶ Noting that this would be the absolute worst-case scenario if <u>all_new</u> residents were to be commuting on the A355 past the Burnham Beeches SAC. This is unlikely to be the case as some future residents may work in conurbations that wouldn't require travelling past the SAC (e.g. West Drayton, Chorleywood) or not undertake commuter journeys at all.

neighbourhood planning (e.g. GCNP) and ensure this is adequately mitigated (if required).

Water Quantity, Level and Flow

- 4.12 While not classified as a water-dependent site, the SAC beech forests with occasional holly and yew in the shrublayer, especially where veteran trees are present, are nonetheless considered sensitive to changes in water supply. A report summarising the key threats from development within the Burnham Beeches SAC²⁷ identifies both surface water and groundwater supply as potential threats to the qualifying habitat.
- 4.13 Natural England's SACO for the Burnham Beeches SAC specifically refer to hydrology as am important feature for the site, identifying a target for the beech forest to 'maintain natural hydrological processes to provide the conditions necessary to sustain the feature within the site, such as by protecting groundwater supply and groundwater quality and by protecting the site from development which may raise or lower groundwater levels, both within and outside the site boundary.' Hydrological processes may be affected through a range of activities, such as extraction of groundwater and / or surface water. While the hydrology of the SAC is referred to in the SACO, there is no reference to hydrological processes in Natural England's SIP.
- 4.14 Overall, while the Burnham Beeches SAC is not primarily a waterdependent site, there is sufficient technical evidence to identify a potential hydrological concern in the SAC. Therefore, LSEs of the GCNP on the site regarding water quantity, level and flow cannot be excluded and the site is screened in for AA as a precautionary measure.

Policy Screening

- 4.15 All policies included within the GCNP were screened for LSEs (see Table 3). Most policies relate to development and design management, implying that they are not associated with linking impact pathways. Only the following policy provides for a quantum and location of development, and is screened in for AA:
 - Policy 4: Orchehill Rise Car Park and Station Overflow Car Park (this policy allocates seven dwellings within Gerrards Cross town, which may be associated with impacts relating to recreational pressure, atmospheric pollution and water quantity, level and flow)

²⁷ Liley D., Hoskin R., Fearnley H., White J. & Underhill-Day J. (2012). Urban development and Burnham Beeches SAC. Unpublished report by Footprint Ecology for Corporation of London. 58pp.

5. Appropriate Assessment

Recreational Pressure

Burnham Beeches SAC

5.1 LSEs of the GCNP 'in-combination' on the Burnham Beeches SAC could not be excluded at the screening stage. The SAC represents one of the most important areas of acidic beech forest in the UK and is very popular among visitors due to its high-quality visitor facilities, attractive landscape and natural visitor experience. A 2012 report has summarised the key recreation-related impacts that represent current concerns in the SAC, including direct damage of trees due to trampling and / or climbing, soil compaction, dog fouling, littering, vandalism and arson. The delivery of new housing in Gerrards Cross Parish has the potential to increase the total recreational burden within the SAC, thereby exacerbating the existing impacts occurring throughout the site.

Visitor Survey Data

- 5.2 Visitor surveys provide the primary means of establishing current and predicting future site usage, including the types of activities that visitors carry out, how visitor pressure distributes geographically and, most importantly, where visitors travel from. The latter parameter is a prerequisite for identifying the geographic scope of mitigation requirements; i.e. determining the zones in which developers delivering new housing must contribute to mitigation measures.
- 5.3 Footprint Ecology's 2014 visitor survey report²⁸ delineated the recreational catchment of the SAC using 314 geocoded postcodes. Excluding interviewees on holidays, the mean and median distances from home were 6km and 3.1km respectively. Statistical analysis revealed that distance from home differed significantly between survey points, activities undertaken and frequency of visit categories. When considering the settlements from which visitors derive, Chalfont St. Peter / Gerrards Cross were the 8th most important origin, contributing seven interviewees (2% of total interviewees). While some conurbations (e.g. Slough and Farnham Royal), most likely due to their large populations, contribute much higher loads to the recreational burden, Gerrards Cross Parish clearly also has its own recreational footprint within the Burnham Beeches SAC.
- 5.4 The same survey also assessed how future development in the vicinity of the SAC would influence visit rates. Around 5km from the SAC the visit rate per household (expressed as the ratio of number of interviews per number of properties in 500m distance bands) drops to very low levels and the impact of new development would be correspondingly low. Using the equation of the visit rate curve and the total number of visitors expected to originate from within 15km, the number of annual visits from each 500m distance band was also estimated. For the distance bands 4 5.5km from the SAC, which includes the town of Gerrards Cross, a total number of 41,806 annual visits is predicted. Put another way, if 100 additional dwellings were delivered in Gerrards Cross town, this would result in 130 additional visits to the SAC, equating to a 0.02% increase on current

²⁸ Liley D., Floyd L. & Fearnley H. (2014). Burnham Beeches Visitor Survey. Unpublished report by Footprint Ecology for Corporation of London.

visit levels. Given that the GCNP only allocates seven dwellings, the percentage increase would be correspondingly lower.

- 5.5 In 2019, Footprint Ecology updated the evidence base of recreational pressure in the Burnham Beeches SAC and potential mitigation solutions for future housing growth²⁹. In contrast to the original visitor survey report described above, this 'refresh' report defined a core recreational catchment for the SAC based on the 75th percentile of interviewee postcodes. This approach of defining a geographic zone in which housing development has a material effect on visitor numbers has been adopted for various European sites, including the Dorset Heaths SPA, Thames Basin Heaths SPA, Solent, Epping Forest SAC and Cannock Chase SAC. Overall, based on 906 interviewee postcodes (pooled from three separate visitor surveys), the core catchment zone for the Burnham Beeches SAC is 5.6km. Footprint Ecology recommended a range of mitigation interventions applicable to all residential development coming forward within the 5.6km recreational catchment.
- 5.6 Development exclusion zones surrounding European sites have been implemented in many cases (e.g. Thames Basin Heaths SPA, Ashdown Forest SPA / SAC) to account for the significantly higher risk this development represents due to proximity. For example, residents living in the immediate vicinity of a site are likely to use it as their de facto greenspace, considerably increasing visit frequency and risks of waste trampling damage, dumping, fire incidence and other impacts. Moreover, Strategic Access Management and Monitoring (SAMM) measures may not provide effective mitigation for housing close to European sites. For example, it is unlikely that measures such as rangers, interpretation boards, dog bins and other features will be adequately sited to cover desire lines and informal paths from nearby housing.
- 5.7 For the Burnham Beeches SAC, the data from three visitor surveys indicate that residents living within 500m of the site are much more likely to visit the SAC. For example, one dwelling within 500m is expected to generate an equivalent number of visits to 57 dwellings at 4km distance. A 500m zone surrounding the SAC also encompassed most interviewees that were walking to the site and visiting frequently, with interviewees visiting by car not making a significant contribution until the 400m-500m distance band. Overall, based on the available evidence, Footprint Ecology recommended a 500m exclusion zone to be included in the emerging mitigation strategy for the Burnham Beeches SAC.

Strategic Access Management and Monitoring Strategy

- 5.8 To preserve the integrity of the Burnham Beeches SAC and be compliant with the Conservation of Habitats and Species Regulations 2017 (as amended), Buckinghamshire Council adopted the Strategic Access Management and Monitoring Strategy Supplementary Planning Document (SPD)³⁰ in November 2020. The SPD identifies the two key development zones that will guide the mitigation process:
 - 500m exclusion zone in which there is a presumption against new residential development; and

²⁹ Liley D. (2019). Impacts of urban development at Burnham Beeches SAC: Update of evidence and potential housing growth, 2019. Unpublished report by Footprint Ecology for Chiltern and South Bucks Councils.

³⁰ Buckinghamshire Council. (November 2020). Burnham Beeches Special Area of Conservation – Strategic Access Management and Monitoring Strategy Supplementary Planning Document. 35pp. Available at: <u>https://buckinghamshire-govuk.s3.amazonaws.com/documents/Burnham_Beeches_Adopted_SPD_1_OvzjqIL.pdf</u> [Accessed on the 12/09/2022]

- 5.6km zone of influence in which additional residential development is likely to increase visit rates to the SAC and will require mitigation.
- 5.9 The mitigation for recreational impacts in the Burnham Beeches SAC is to be delivered by a programme of SAMM measures, which are tailored to reduce impacts on-site by directly influencing visitor behaviour during visits. In total, the following six SAMM projects will be delivered within the SAC to mitigate recreational impacts in perpetuity (i.e. over the course of 80 years):
 - Provision of electronic interpretation (bespoke live interpretation linked to visitor location to provide better understanding of recreational impacts);
 - Events to raise public awareness of recreational pressure (e.g. events aimed at dog walkers and understanding of nutrient enrichment);
 - Enhanced ranger presence through additional member of staff (this helps with enforcement of Public Space Protection Orders, encouraging responsible dog ownership, etc.);
 - Periodic visitor surveys (to inform future revisions of the mitigation strategy and provide continued monitoring of recreational impacts);
 - Monitoring of visitor impacts on soils and ecology of SAC features (e.g. lichen surveys, fixed-point photographs to monitor erosion); and
 - Production of access plan and carrying capacity study.
- 5.10 Delivering the SAMM projects will entail an approx. in-perpetuity cost of £4,784,440, which will be divided among the projected number of new homes in the 400m to 6.5km mitigation zone surrounding the SAC. At the time of publishing of the SPD, this amounted to a SAMM tariff of £2,023.87 per net new dwelling (subject to changes due to inflation and / or annual updates on housing deliveries). Developers of all net new homes will be required to pay Buckinghamshire Council through a Section 106 agreement and the contributions will then be forwarded to the City of London Corporation for utilisation in SAMM projects. The SAMM mitigation strategy will be subject to 5-yearly reviews in line with 'refresh' visitor surveys and other emerging evidence.

Policy Mitigation in the South Bucks Core Strategy

- 5.11 Neighbourhood planning is guided by and must be in conformity with planning policy at the overarching LPA level. Due to the withdrawal of the emerging CSBLP, the South Bucks Core Strategy (SBCS) Development Plan Document is the guiding planning document for the GCNP. Policies in the SBCS that address and / or mitigate recreational pressure impacts would also apply to and mitigate effects of the GCNP. It is important to note that the SBCS predates most of the survey data available for the SAC, delineation of the SAC's core recreational catchment and the adoption of the SAMM SPD. Therefore, policy mitigation in the SBCS is somewhat limited.
- 5.12 Reference to the importance and conservation priority of the Burnham Beeches SAC is given in **Core Policy 9 (Natural Environment)** of the Core Strategy. It states that 'the highest priority will be given to the conservation and enhancement of... the integrity of Burnham Beeches Special Area of Conservation.' The policy goes on to specify that 'the conservation and enhancement of Burnham Beeches SAC, and its surrounding supporting biodiversity resources, will be achieved

through restricting the amount of development in close proximity to the site, and ensuring that development causes no adverse effect on the integrity of the SAC.' Effectively, this policy provided broad protection to the SAC, without giving specifics about the geographic zones in which restrictions on residential development would be imposed (likely because this information was not available at the time).

5.13 Core Policy 5 (Open Space, Sport and Recreation) stipulated that 'open space, sport and recreational facilities will be protected and enhanced in line with national guidance in PPG17. The loss of open space, sport and recreational facilities will only be permitted in [exceptional circumstances].' Maintaining an adequate inventory of outdoor spaces for recreation is important in reducing the number of visits to more sensitive sites of nature conservation interest. The SBCS also delivered opportunities for enhanced greenspaces and recreational access within large development sites. For example, Core Policy 15 (Mill Lane Opportunity Site) proposed a comprehensive, conservation-led regeneration of the site to include watercourses and parkland. The redevelopment proposal was required to 'improve public access to the River Thames through a new riverside walk with a new footbridge provided across the Thames to Maidenhead.'

Policy Recommendations for the GCNP

- 5.14 Due to the emerging CSBLP being significantly delayed and the relatively old age of the adopted SBCS, it is recommended that additional policy wording is included in the GCNP to mitigate recreational pressure and safeguard the qualifying interest features in the Burnham Beeches SAC.
- 5.15 It is recommended that additional policy wording is inserted to a new policy (addressing the protection of European sites) to recognise the adopted SAMM strategy and to establish a requirement for relevant residential developments to contribute to established mitigation measures for the Burnham Beeches SAC. This is particularly important due to the delay of the CSBLP and the gap in planning policy currently identified in relation to the SAC. The following wording should be added to the GCNP: '*To protect the Burnham Beeches from an increase in recreational pressure, developers of new housing development will need to be in compliance with the adopted Burnham Beeches Special Area of Conservation Strategic Access Management and Monitoring Strategy (SAMM), which sets out a 500m development exclusion zone and a 500m 6.5km SAMM mitigation zone. Developers of housing in the mitigation zone will be required to make financial contributions towards SAMM projects in line with the tariffs identified in the strategy (subject to yearly adjustments for inflation and changes in housing delivery rates).'*
- 5.16 <u>Provided the above policy wording is added in the next iteration of plan</u> production, it is concluded that the GCNP will not result in adverse effects on the integrity of the Burnham Beeches SAC and be in compliance with the Conservation of Habitats and Species Regulations 2017 (as amended).

Chilterns Beechwoods SAC

5.17 LSEs of the GCNP 'in-combination' on the Chilterns Beechwoods SAC could not be excluded at the screening stage. The Bisham Woods SSSI is the closest component woodland of the SAC to Gerrards Parish and, based on distance, the most likely parcel to be visited by future residents of the parish. Natural England's SSSI condition assessment assigns Favourable Condition to the site, although it is noted that a threat to its condition has been identified due to recreational disturbance. The assessment states that 'recreational use of the woodland throughout the unit was significant, to the point where it could threaten the condition of the site with significant disturbance. Dog walkers, cyclists and families were seen to be using the many footpaths. There were many more paths than the official rights of way and the paths and rides present were used well. Throughout the site there was damage observed in the form of paths and ramps being constructed from soil for the purpose of mountain biking... The constructions were observed away from the main paths and pose a threat to wildlife, ground flora and regeneration.'

5.18 The Outdoor Recreation Valuation (ORVal) Tool³¹, a complex predictive model of site visits based on a range of factors including socio-economic characteristics, transport and data from the Monitoring of Engagement with the Natural Environment (MENE), indicates that there are 43,343 annual visits to the Bisham Woods SSSI, making it a relatively busy destination for recreation.

Recreation Impact Assessment

- 5.19 Given the existing disturbance issues within the SAC, Footprint Ecology was commissioned by Dacorum Borough Council to undertake a recreation impact assessment and visitor survey³² at key locations within and outside the designated site boundary. It should be noted that both the impact assessment and visitor survey focus on component parts of the SAC that lie close to Dacorum Borough, including the Ashridge Commons and Woods SSSI (approx. 19.9km from Gerrards Cross Parish) and Tring Woodlands SSSI (approx. 21km from Gerrards Cross Parish). Due to the long distance, these SSSIs are unlikely to be visited by residents from the parish. However, the results are presented here because similar impacts are likely to be present in the Bisham Woods SSSI (see the Natural England site condition assessment referred to above) and the report provides key evidence regarding the core recreational catchment of the SAC, which typically applies to all its component parts.
- 5.20 Walk-over surveys in sites included in the assessment were undertaken to provide evidence of current recreation impacts. The observations provide a snapshot of recreation impacts, covering periods when the qualifying features are considered to be most sensitive (i.e. May - September 2021). Severe recreation impacts were observed in the Ashridge Commons and Woods SSSI, with just under 500 observations of recreational damage being recorded. Trampling damage was the most widespread impact with most paths being devoid of vegetation and leaf litter. Significant path widening (often up to 5m) and encroachment of vegetation alongside paths was recorded in most areas of the site. Additional widening was noted in wetter areas of the site, where visitors (including cyclists and horse riders) avoided muddy sections of paths. Impacts from trampling damage were frequently evident in narrow desire lines in wooded areas, resulting in the exposure of roots of veteran trees. Significant trampling and compaction of soils surrounding veteran trees, particularly beech trees, was observed. Beech trees tend to be more accessible because their dense canopy prevents the growth of thick, deterrent ground flora (e.g. bramble and bracken). In some areas affected by heavy recreational use, ground vegetation was absent

³¹ Version 2.0. Developed by the Land, Environment, Economics and Policy Institute (LEEP) at the University of Exeter. Available at: <u>https://www.leep.exeter.ac.uk/orval/</u> [Accessed on the 03/10/2022]

³² Panter C., Liley D., Lake S., Saunders P. & Caals Z. (2021). Visitor survey, recreation impact assessment and mitigation requirements for the Chilterns Beechwoods SAC and the Dacorum Local Plan. Report by Footprint Ecology for Dacorum Borough Council. 169pp.

or, where present, is dominated by species that are more resistant to trampling pressure (e.g. perennial ryegrass, broad-leaved plantain).

5.21 Contamination from dog fouling was another widespread recreation impact observed throughout the site. The resulting eutrophication has led to changes in vegetation composition, replacing typical woodland flora with strips of nettle, broad-leaved dock and coarse grasses along path margins. Impacts in acid grassland, another qualifying feature of the SAC, include the replacement of finer grasses (e.g. common bent, sweet vernal-grass) with nitrophiles such as perennial ryegrass. <u>All existing impacts discussed here are likely to become more severe with future additional housing development and a concomitant increase in visitor numbers.</u>

Visitor Survey Results

- 5.22 Footprint Ecology (FE) undertook the visitor survey through 2021, including Easter holidays, summer term time and summer school holidays. Given the existing concerns about impacts within the SAC, the timing of survey effort was chosen to cover periods of peak recreational use. FE uses a dual survey design that encompasses visitor counts and interviews.
- 5.23 Across all survey points included in the study, a total of 3,890 people entered the Chilterns Beechwoods SAC. This equated to an average of approx. 108 visitors entering the site per hour. At the Ashridge Commons and Woods SSSI, an average of 8.2 people were entering the site per hour per survey point. Various temporal parameters were found to influence visitor numbers significantly, including general season (lowest footfall on term-time weekdays and highest footfall on Easter holidays weekday) and time of day (significantly lower footfall in the morning), but not weekday vs. weekend. Some survey locations (e.g. Monument Drive) were significantly more popular than others, as evidenced by considerably more visitors entering / passing per hour.
- 5.24 A total of 1,164 interviews was completed, equating to 76% of the visitor groups approached. 1,128 interviewees (97%) were visiting directly from home, which is an indication that the Chilterns Beechwoods SAC is primarily a recreational resource for locals rather than holiday makers. The most frequent activities undertaken were dog walking (48%), walking (39%), exercising (3%) and cycling (3%). Compared to visitor survey data from other European sites, where dog walkers can make up 80% of visitors, the percentage of dog walkers in the SAC was relatively low. However, it is to be noted that the questionnaire asked people for their main activity, which meant that interviewees visiting with a dog could nonetheless provide another activity (e.g. walking or family outing). The true number of people visiting with a dog is likely to be considerably higher than the 48% reported above.
- 5.25 92% of the 1,164 interviewees gave a full valid postcode. In the Ashridge Commons and Woods SSSI, 66% of interviewees originated from within Dacorum Borough, 20% from Buckinghamshire District (which includes Gerrards Cross Parish), 2% from Barnet London Borough and 2% from Central Bedfordshire. While a relatively large proportion of interviewees derives from Buckinghamshire, it is to be noted that this unitary council covers a large geographic area, including the former authorities of Buckinghamshire County and Aylesbury Vale, Chiltern, South Bucks and Wycombe District. Mapping of visitor postcodes (Map 17 of the visitor survey report) shows that only a single interviewee in the surveyed areas originated from the area around Gerrards

Cross Parish. Furthermore, it should be noted that the survey did not include the component SSSIs closest to the parish (the Bisham Woods SSSI, Hollowhill and Pullingshill Woods SSSI and Bradenham Woods, Park Wood & The Coppice SSSI). The contribution of the wider area surrounding Gerrards Cross Parish to the overall footfall in these component parts may be considerably higher, but there is no data in the visitor survey to assess this.

5.26 The straight-line Euclidean distances between home postcodes and interview locations were also calculated, noting that this method does not account for access practicalities (e.g. road network and potential barriers to access). Across all interviewees visiting from home, the mean and 75th percentile distances to home were 12.8km and 12.6km respectively. The use of the 75th percentile has become a standard way to define a Zone of Influence (ZoI) (also referred to as core recreational catchment) of a European site. FE recommend a ZoI of 12.6km to be applied to the Ashridge Commons and Woods SSSI only. Due to the Tring Woodlands SSSI being associated with a much smaller ZoI of 1.7km and current recreational impacts being much lower, it was concluded that there would be a minimal requirement for mitigation in that part of the woodland. Currently, there is no data on the likely ZoI of the Bisham Woods SSSI, the part of the SAC closest to Gerrards Cross Parish.

Implications for the GCNP

- 5.27 FE recommend that measures are needed to mitigate recreational damage in the Ashridge Commons and Woods SSSI and to prevent the overarching SAC Conservation Objectives from being undermined. Such mitigation needs to be effective, reliable, timely and delivered long-term to achieve its objectives. Individual measures are unlikely to fulfil these requirements and, therefore, a package of mitigation measures in the form of a strategy should be deployed to avoid adverse effects on the integrity of the SAC. There is a wide range of examples of avoidance and mitigation strategies that have been or are being deployed in European sites with similar interest features, such as in the Burnham Beeches SAC, Epping Forest SAC, New Forest SPA / Ramsar / SAC and Cotswolds Beechwoods SAC. Most of the mitigation strategies pursue a dual approach in tackling recreational issues, namely:
 - Suitable Alternative Natural Greenspace (SANG) this involves the provision of additional off-site greenspace according to Natural England guidelines, aiming to provide realistic alternative destinations to and helping reduce footfall in European sites
 - SAMM as highlighted in the previous section, this relates to on-site interventions such as (increased) wardening, access management (e.g. intermittent closure of paths), enhanced signage, education / awareness raising and ongoing impact monitoring
- 5.28 In presently adopted strategies, both deliverables are typically split into separate payments to be made by developers to a governing body (e.g. a specific landowner or a separate governing body where multiple landowners and / or organisations are involved). Where mitigation strategies are developed, these are typically set out in statutory policy documents, such as individual or joint Supplementary Planning Documents (SPDs). Furthermore, it is common practice that adopted strategic development plans (e.g. Local Plans and Core Strategies) make adequate reference to evolving mitigation strategies. This further secures the delivery of strategy objectives at the policy level.

- 5.29 Recreational pressure is a newly emerging issue for the Chilterns Beechwoods SAC and a mitigation strategy for the site has not been adopted. This is important because recreational pressure is typically an impact pathway that is addressed at a broad geographic scale and lies beyond the remit of parish councils. For example, it is impossible for a small residential development to deliver bespoke SANG, both from an economic and management perspective. An alternative solution for small developments is usually to financially contribute to strategic SANGs, which are owned and manged by Local Planning Authorities. Clearly, a strategic solution (both regarding SANG and SAMM) for the Ashridge Woods and Commons SSSI, and indeed the wider Chilterns Beechwoods SAC, has not yet been implemented, such that the GCNP cannot rely on adopting an existing mitigation framework.
- 5.30 It is also uncertain whether the data in the FE report also apply to Gerrards Cross Parish, particularly given that the visitor survey did not cover the Bisham Woods SSSI, the component woodland most likely to be visited by residents from the parish based on distance. The Tring Woodland SSSI, which was surveyed by FE and is similar in size to the Bisham Woods SSSI, had a much smaller ZoI (1.7km) than the Ashridge Woods and Commons SSSI (12.6km). Since the size of a protected greenspace is likely to at least partially determine its ZoI, it would be reasonable to assume that the Bisham Woods SSSI has a similar catchment than the Tring Woodlands SSSI.

Policy Recommendations for the GCNP

- 5.31 In the intervening time until Buckinghamshire Council becomes a signatory of the emerging mitigation strategy for the Chilterns Beechwoods SAC, it is recommended that precautionary wording is inserted to the GCNP to ensure that the plan will abide by whatever mitigation approaches are included in the Buckinghamshire Local Plan. This will ensure that the GCNP will be in accordance with the overarching development regulations set at a higher planning tier.
- 5.32 The following wording should be added to the GCNP: 'Recreational pressure is an emerging theme for the Chilterns Beechwoods SAC, with trampling damage, contamination and deadwood removal identified as key issues in a recent impact assessment. While Gerrards Cross Parish lies at a considerable distance from the closest part of the SAC (approx. 10.5km, an in-combination contribution of the plan to recreational footfall cannot be excluded. Developers will ensure that any residential development coming forward under the Neighbourhood Plan will make financial contributions to any mitigation approaches (e.g. SANG and SAMM) that form part of an emerging mitigation strategy for the SAC developed by Buckinghamshire Council.'

Water Quantity, Level and Flow

Burnham Beeches SAC

5.33 LSEs of the GCNP on the Burnham Beeches SAC regarding water quantity, level and flow could not be excluded. The water supply to the wider SAC area, including its veteran trees, is both via surface water and groundwater recharge. The Nile and the Withy streams and associated catchments supply surface water to a parcel of heathland mire and three ponds within the SAC. A previous study highlights that the volume of water flow in the Withy stream has significantly reduced since the 1960s and there is no sufficient groundwater influence to replace water losses. It has been concluded that there is a considerable risk of drying of the edges of the heathland mire, with potential knock-on effects on the surrounding beech forests. Previous research has recommended that the flows feeding the water features should be adequately conserved to safeguard the hydrological integrity of the SAC. Furthermore, there should also be no reduction in the catchment areas for surface waters feeding the mire and ponds.

- 5.34 The prevailing groundwater levels in underlying geologies also have important effects on the water supply to the SAC. According to borehole logs, the water supply to the site is via slow, deep groundwater recharge. The availability of groundwater for abstraction in the wider area around the SAC is determined in the Maidenhead to Sunbury Catchment Abstraction Management Strategy (CAMS). Within the CAMS there are 89 groundwater abstraction licenses, 53% of which are for the public water supply. The resource availability status for the CAMS is 'provided as 'no water available', implying that applications for additional groundwater abstractions will not be consented until it can be demonstrated that they will have no negative impacts on water flows.
- 5.35 The primary pathway through which the GCNP could affect the water supply in the Burnham Beeches SAC is through an increased demand for potable water and abstraction requirements due to the seven allocated dwellings. Affinity Water is the company that supplies water to households in Gerrards Cross Parish and surrounding parishes. The company's approach to future resource use is outlined in its current Water Resources Management Plan (WRMP), covering the years between 2020 and 2080. Gerrards Cross Parish lies in Affinity Water's Central Region in Water Resource Zone (WRZ) 1 (Misbourne). WRZs are important in HRAs because they delineate the largest possible areas over which water resources can be shared. Therefore, they broadly encompass the areas in which changes to resource usage and impacts on European sites can be expected. Approx 60% of the water supply in the Central Region comes from groundwater sources, with the remaining 40% being abstracted from surface waters or imported from neighbouring water companies.
- 5.36 According to the WRMP, the baseline supply-demand balance for Dry Year Critical Periods for the Central Region is already in a deficit of 26.8 MI/d in 2020/21. Due to the pressure of climate change, this deficit is projected to grow to 100.7 MI/d in 2044/45 and 279.5 MI/d by 2079/80. Given that demand will by far exceed the Water Available for Use (WAFU), Affinity Water needed to consider options to bring the supply-demand balance into surplus. Option selection is a complex process, involving the exploration of unconstrained options (Stage 1), options screening (Stage 2) and development of feasible options (Stage 3). A review of the options included in Affinity Water's 'best value' plan indicates that supply-side options (e.g. leakage reductions, Water Saving Programme) and these will entail the exploitation of the following new water sources:
 - Development of the South East Strategic Reservoir (SESR) with an abstraction on the River Thames of 100 Ml/d – the R. Thames lies to the south of the Burnham Beeches SAC and has no hydrological connectivity with the site; and
 - Three boreholes in the Lower Greensand and development of Brent Reservoir as smaller, cost-effective solutions to the supply-demand deficit

- the SAC is underlain by the Woolwich and Reading Beds and a perched Chalk aquifer; there is no connectivity with the Lower Greensand from which water will be abstracted.

5.37 These conclusions are in line with the WRMP HRA, which was completed by AECOM in March 2020. The HRA determined that none of the options included in the final WRMP would result in LSEs on the Burnham Beeches SAC. Overall, while additional sources will need to be exploited to meet the forecast baseline supply-demand deficit in the Central Region, none of the included water sources have hydrological linkages to the SAC. <u>Therefore, there will be no adverse effects of the GCNP on the integrity of the Burnham Beeches SAC in relation to water quantity, level and flow. No additional policy wording is needed to address this impact pathway.</u>

6. Conclusions & Recommendations

6.1 This HRA appraised the potential impacts of the emerging GCNP on European sites, specifically the Burnham Beeches SAC and Chilterns Beechwoods SAC. Policy 4 allocates seven dwellings, which were assessed in the context of known threats / pressures in the SAC, including recreational pressure, atmospheric pollution and water quantity, level and flow.

Burnham Beeches SAC

- 6.2 The Atlantic acidophilous beech forests within the SAC are sensitive to nitrogen deposition (CL of 10-20 kg N/ha/yr), as well as high levels of NOx and NH₃. However, while the SAC adjoins the A355 (which is a reasonable route for commuters from Gerrards Cross Parish), LSEs of the GCNP were excluded and the site was screened out from Appropriate Assessment. This was primarily due to the small contribution of the Neighbourhood Plan to traffic flows along the A355 (approx. 0.001% of the AADT), which is likely to be well within normal daily variations in traffic. Furthermore, mitigating atmospheric pollution is within the remit of LPAs. Traffic and air quality modelling will be undertaken for the emerging CSBLP (which will include the seven dwellings allocated in the GCNP) and mitigated at the overarching Local Plan level.
- Recreational pressure and water quantity, level and flow were screened in for 6.3 Appropriate Assessment. Gerrards Cross Parish lies within the established 5.6km core recreational catchment of the Burnham Beeches SAC and, in the absence of mitigation, the seven allocated dwellings have the potential to affect the integrity in-combination. The AA recommended that the following additional policy wording is inserted in the form of a new policy to recognise the adopted SAMM mitigation strategy, which is particularly important due to the delay of the overarching CSBLP: 'To protect the Burnham Beeches from an increase in recreational pressure, developers of new housing development will need to be in compliance with the adopted Burnham Beeches Special Area of Conservation Strategic Access Management and Monitoring Strategy (SAMM), which sets out a 500m development exclusion zone and a 500m – 6.5km SAMM mitigation zone. Developers of housing in the mitigation zone will be required to make financial contributions towards SAMM projects in line with the tariffs identified in the strategy (subject to yearly adjustments for inflation and changes in housing delivery rates).' Provided this addition to policy wording is made, the GCNP will not result in adverse effects on the integrity of the Burnham Beeches SAC regarding recreational pressure.
- 6.4 While not critically dependent on water supply (in contrast to estuaries or wetlands), there is considerable evidence that the site is being impacted by inadequate water supply (both from surface water and groundwater) and potential drying out of habitats. Affinity Water's WRMP was assessed to determine whether the future demand for potable water within Gerrards Cross' WRZ will be met by exploiting water resources in hydrological connection with the SAC. However, it was shown that none of the additional water sources have hydrological linkages to the SAC. <u>Therefore, there will be no adverse effects of the GCNP on the integrity of the Burnham Beeches SAC in relation to water guantity, level and flow.</u>

Chilterns Beechwoods SAC

- 6.5 The Chilterns Beechwoods SAC was screened in for Appropriate Assessment regarding recreational pressure. Given the relatively long distance between the SAC and Gerrards Cross Parish, and the relatively small quantum of growth allocated (7 dwellings), this impact pathway is only considered relevant incombination with other plans and projects. FE's recent impact assessment has demonstrated that some parts of the SAC (notably the Ashridge Commons and Woods SSSI) are highly impacted by recreation, especially due to trampling damage and dog fouling. While FE's assessment did not cover the Bisham Woods SSSI, the component part closest to Gerrards Cross Parish, Natural England's SSSI condition assessment for this SSSI also mentions existing negative recreation impacts. Postcode data from FE's visitor survey denoted a 12.6km Zol for the Ashridge Commons and Woods SSSI, based on the distance that the closest 75% of interviewees travel to the site. FE concluded that strategic mitigation (in the form of SANG and / or SAMM) will be needed to mitigate recreational impacts within this SAC to avoid adverse effects on site integrity. There is no data on the ZoI of the Bisham Woods SSSI, although it is likely that it will be considerably smaller than 12.6km.
- 6.6 However, at this point in time, there is no agreed mitigation framework in place for the Chilterns Beechwoods SAC for the GCNP to rely on. This is important because overarching mitigation solutions fall within the remit of Local Planning Authorities rather than Parish Councils. In the intervening time until Buckinghamshire Council becomes a signatory of any emerging mitigation strategy for the Chilterns Beechwoods SAC, it is recommended that precautionary wording is inserted to the GCNP to ensure that the plan will abide by whatever mitigation approaches are included in the Buckinghamshire Local Plan. This will ensure that the GCNP will be in accordance with the overarching development regulations set at a higher planning tier.
- 6.7 The following wording should be added to the GCNP: 'Recreational pressure is an emerging theme for the Chilterns Beechwoods SAC, with trampling damage, contamination and deadwood removal identified as key issues in a recent impact assessment. While Gerrards Cross Parish lies at a considerable distance from the closest part of the SAC (approx. 10.5km, an in-combination contribution of the plan to recreational footfall cannot be excluded. Developers will ensure that any residential development coming forward under the Neighbourhood Plan will make financial contributions to any mitigation approaches (e.g. SANG and SAMM) that form part of an emerging mitigation strategy for the SAC developed by Buckinghamshire Council.' Provided this precautionary policy wording is inserted, the GCNP will not result in adverse effects on the integrity of the Chilterns Beechwoods SAC regarding recreational pressure.

Appendix A Background to European sites

A.1 Maps

A.2 Burnham Beeches SAC

Introduction

- 6.8 The Burnham Beeches SAC is a 383.71ha large site that encompasses broadleaved deciduous woodland (95%), heath / scrub (5%) and coniferous woodland (5%). It occupies an extensive area of the Burnham Plateau that supports mature and developing woodland, old coppice, scrub and heath. The site is designated for Atlantic acidophilous beech forests, which is former beech *Fagus sylvatica* wood-pasture with old pollards and oak high forest *Quercus* spp. The SAC is one of the most important sites for deadwood invertebrates and epiphytic communities (e.g. the moss *Zygodon forsteri*).
- 6.9 In terms of management, grazing has been reintroduced to the SAC in the last 20 years, now covering approx. 164ha of the site with the aim to create a more open and diverse habitat mosaic. Part of the site has open public access and a long-standing history as a valued recreational space. Over 500,000 visitors come to the site annually and recreational access is managed by the City of London Corporation.

Qualifying Features³³

6.10 Annex I habitats that are a primary reason for selection of this site:

• Atlantic acidophilous beech forests with *llex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *llici-Fagenion*)

Conservation Objectives³⁴

- 6.11 With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;
- 6.12 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;
 - The extent and distribution of qualifying natural habitats
 - The structure and function (including typical species) of qualifying natural habitats, and
 - The supporting processes on which qualifying natural habitats rely.

Threats / Pressures to Site Integrity³⁵

- 6.13 The following threats and pressures to the integrity of the Burnham Beeches SAC are identified in Natural England's Site Improvement Plan:
 - Air pollution: Risk of atmospheric nitrogen deposition
 - Public access / disturbance

³³ Available at: <u>https://sac.jncc.gov.uk/site/UK0030034</u> [Accessed on the 14/09/2022]

³⁴ Available at: http://publications.naturalengland.org.uk/publication/6014456282742784 [Accessed on the 14/09/2022]

³⁵ Available at: <u>http://publications.naturalengland.org.uk/publication/5689860228644864</u> [Accessed on the 14/09/2022]

- Habitat fragmentation
- Deer
- Species decline
- Invasive species

A.3 Chilterns Beechwoods SAC

Introduction

- 6.14 The Chilterns Beechwoods SAC is a 1,285.86ha large site, comprising broadleaved deciduous woodland (88%), dry grassland / steppes (8%) and heath / scrub (4%). It lies in the Chilterns National Character Area, which is an extensively wooded and farmed landscape, underlain by chalk bedrock. The site comprises several component semi-natural woodlands that share beech as the dominant canopy tree. Owing to the diverse nature of underlying soil types, the component woodlands differ considerably in character, structure and composition.
- 6.15 The most important feature of the SAC is its *Asperulo-Fagetum* beech forest in the centre of the habitat's UK range. Furthermore, the woodland forms an important component of a grassland-scrub-woodland mosaic which supports the rare coralroot *Cardamine bulbifera*. Much of the SAC woodland was formerly an important source of timber for furniture production. However, in recent times the Chilterns woodlands have become a highly valued recreational resource, particularly for walkers and cyclists.

Qualifying Features³⁶

- 6.16 Annex I habitats that are a primary reason for selection of this site:
 - Asperulo-Fagetum beech forests
- 6.17 Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:
 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites)
- 6.18 Annex II species present as a qualifying feature, but not a primary reason for site selection:
 - Stag beetle Lucanus cervus

Conservation Objectives³⁷

6.19 With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

³⁶ Available at: <u>https://sac.jncc.gov.uk/site/UK0012724</u> [Accessed on the 28/09/2022]

³⁷ Available at: http://publications.naturalengland.org.uk/publication/4808896162037760 [Accessed on the 28/09/2022]

- 6.20 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;
 - The extent and distribution of qualifying natural habitats and habitats of qualifying species
 - The structure and function (including typical species) of qualifying natural habitats
 - The structure and function of the habitats of qualifying species
 - The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
 - The populations of qualifying species, and,
 - The distribution of qualifying species within the site.

Threats / Pressures to Site Integrity³⁸

- 6.21 The following threats and pressures to the integrity of the Chilterns Beechwoods SAC have been identified in Natural England's Site Improvement Plan:
 - Forestry and woodland management
 - Deer
 - Changes in species distributions
 - Invasive species
 - Disease
 - Public access / disturbance
 - Air pollution: Impact of atmospheric nitrogen deposition

³⁸ Available at: http://publications.naturalengland.org.uk/publication/6228755680854016 [Accessed on the 28/09/2022]

Appendix B LSEs Screening Table

Table 3: LSEs screening of policies contained in the GCNP. Where the 'screening outcome' column is shaded green, LSEs of the Plan on European sites have been excluded. Orange shading indicates that LSEs could not be excluded and the site is screened in for AA.

Policy Number and Name	Policy Content	LSEs Screening Outcome
Policy 1: Re-use of retail premises	 a. Within the Core Retail Area, Fig P1, the loss of Class E uses (formerly A1, A3, A5), as a result of proposals for change of use or for redevelopment for non-retail use (C3), where prior approval is not given, will not generally be supported. b. Where premises meet the criteria at 'a' above, applications for the conversion of the ground floor existing retails and commercial premises to residential dwellings will be resisted unless it can be demonstrated that the premises are no longer required and/or that there is no other viable use, following the active marketing of the property for a minimum of 6 months. c. Where it is proven that commercial premises are no longer viable, schemes which incorporate the sympathetic reuse of buildings and are informed by the historic character of these buildings will be supported, subject to other policies within this Plan. 	sites can be excluded. This is a development management policy that relates to the re-use of retail premises. It stipulates that the conversion of retail uses to residential dwellings will not be supported, unless such premises are no longer viable. The policy does not allocate a
Policy 2: Small scale business development	 Development proposals will be supported that will enable the expansion and retention of existing local businesses. Support will also be given to development proposals for the establishment of new businesses that diversify and strengthen the local economy without 	sites can be excluded.

	 significantly adversely affecting the distinctive character of the community or creating significant additional traffic. Applications will be particularly encouraged if they offer employment opportunities to local people. In particular, strong support will be given to development proposals that provide space for small start-up businesses. 	management policy that lends support to the retention and expansion of small-scale businesses.
Policy 3: New business and retail support	Planning permission for new business and retail development will be supported within the town centre as defined in F1 provided it can be demonstrated it is in accordance with Policy 17 (<i>Protection of Historic Environment</i>), and that: a. the scheme has satisfactory access and servicing arrangements, b. the design will enhance the visual appearance of the town centre, c. it is supported by an appropriate level of car and cycle parking and d. any harm to local amenity can be mitigated. Outside the defined town centre retail development will be considered if they serve local or specialist needs, and their location is demonstrated to be appropriate in terms of traffic, access, servicing, cycle and car parking and amenity.	sites can be excluded. This is a development management policy that supports planning applications for new business and retail development in the town centre, provided that certain criteria are met. However, despite this general

		Overall, Policy 3 is screened out from AA.
	a. This site shall provide 7 dwellings along with associated open space in the area identified on the Proposals Map 4	LSEs of Policy 4 on European sites cannot be excluded.
	 b. Any development must ensure appropriate landscaping is provided so as to minimise the landscape and visual effects of development c. This site should provide a minimum of 35% - 40% of housing as two or three bed houses unless evidence through a local needs housing survey or an updated Strategic Housing Market Assessment is produced at the time of application that market need is different d. Design of any development should use the Chiltern and South Bucks Character Study 2017 to guide proposals. The maximum building height is not expected to exceed the surrounding buildings e. Site access will be from Orchehill Rise as marked on the proposals map (this is subject to discussions with highways authority and South Bucks) f. Dwellings will be expected to meet the highest possible standards of construction, Code for Sustainable Homes and BREEAM (Building Research Establishment Environmental Assessment Method) standards or equivalent. 	Orchehill Rise Car Park and Station Overflow Car Park for seven dwellings. Delivery of residential development will lead to an increase in the local population and a concomitant increased demand for recreational spaces. Recreational pressure is a well-known issue in the Burnham Beeches SAC, approx. xxkm from Gerrard's Cross Parish.
Policy 5: General design of residential development	Proposals for residential development and conversions within the settlement boundary, will be expected to be in general compliance with the Chiltern and South Bucks Townscape Character Study 2017, unless protections for the Historic Environment set out in other policies of the statutory development	sites can be excluded.

	 plan would be compromised: In particular, proposals will need to comply with the following specific local characteristics, and they must: a. be proportionate to the scale, layout and character of surrounding buildings b. use external materials that complement the existing external materials in the area c. provide adequate storage for bins and recycling 	development to be in accordance with the Chiltern and South Bucks Townscape Character Study 2017, including parameters such as layout, external materials, pedestrian / cycle connections and others.
	d. have a varied appearance e. provide good pedestrian and cycle connections with the town and countryside	However, the policy does not allocate a quantum or location of residential development.
	f. provide high quality boundary treatment	Overall, Policy 5 is screened out from AA.
	g. provide appropriate cycle storage facilities.	
	h. where appropriate and possible, traditional or vernacular style buildings will be encouraged to naturally follow this local distinctiveness through their siting, and the use of local materials and building styles.	
	i. any development seeking to depart from the intentions of this policy must be justified and must be sympathetic to its surroundings.	
Policy 6: Housing Mix	 a) Proposals for ten dwellings or more should demonstrate how they meet the requirement to increase the proportion of modest family homes in the Neighbourhood Area. Unless viability, housing needs or other material considerations show a robust justification for a different mix, at least 40% of dwellings in new developments should have two or three bedrooms. b) The provision of one / two-bedroom dwellings should not normally be provided through flats or apartments unless it can be shown, with credible 	sites can be excluded. This is a development management policy that identifies the housing mix to be delivered within the parish,
	evidence, that the market need is different.	have two or three dwellings.

	c) An alternative dwelling mix will only be permitted where new evidence through local needs housing surveys or updated SHMA evidence is brought forward, which clearly demonstrates the need for a different mix.	
Policy 7: Existing Buildings	The re-use, conversion and adaptation of permanent, structurally sound, buildings of substantial construction to meet the objectively assessed Housing Needs Assessment, which would lead to an enhancement of the character of the area and will be supported subject to: a. the proposed use being appropriate to its location b. the conversion and / or adaptation works proposed respecting the local character of the surrounding buildings and local area c. the local highway network being capable of accommodating the traffic generated by the proposed new use and adequate car parking being provided within the site.	sites can be excluded.
Policy 8: Brownfield Land	a) Priority should be given to the development of previously developed or 'brownfield' over 'greenfield' land unless evidence clearly demonstrates this is not a viable option. Support will be given to the re-use of previously developed or 'brownfield' land within the settlement policy boundary.	sites can be excluded.

	a) The location design and loweut of new bousing development will be	approach over developing greenfield sites. Reducing the conversion of greenfield sites is positive for the environment because it minimises habitat loss. Overall, Policy 8 is screened out from AA.
	 a) The location, design and layout of new housing development will be required to contribute towards the creation of "lifetime neighbourhoods" and show inclusive design, connectivity and permeability. b) In particular, all new dwellings should be safe and secure for everyone in line with the entry requirements of Part Q of the Building Regulations and the design principles of "Secured by Design, New Homes 2014". Gated developments will be discouraged. 	sites can be excluded. This is a development management policy that introduces the concept of
Chapter 9 – Transport & Move	ement	
Policy 10: Highway Improvements	a) Proposals to improve the flow of traffic and pedestrian safety on highways and at key junctions in the Neighbourhood Plan area will be strongly supported, subject to demonstrable, positive engagement with the community at the earliest stage. This is particularly the case in respect of highways and junctions serving Gerrards Cross Town Centre.	

							However, the policy does not allocate development which may increase the volume of traffic within the parish. Overall, Policy 10 is screened out from AA.
Policy 11: Off-street Parking	Proposals for all new homes to be built in Gerrards Cross should provide off- street parking spaces to the following minimum standards:						LSEs of Policy 11 on European sites can be excluded.
		1 bedroom	2 bedrooms	3 bedrooms	4 bedrooms		This is a development management policy that secures off-street parking in
	Below 10 dwellings	1	2	2	3		Gerrards Cross, both for residents and visitors.
	Above 10 dwellings	1.5	2	2	2.5	3	However, parking availability has no impact on traffic flows and, therefore, no bearing on
	Where at all possible, these should be in curtilage or adjacent to the house, not at a separate location away from the dwellings						European sites. Overall, Policy 11 is screened
	parking sho	uld be prov	ided on site	e to an add	itional 20%	ed visitor car of the figure ng standards.	out from AA.

	Developments where parking will be expected to be 'on road' will not be supported.	
Policy 12: Retention of Public Car Parking	 a) With the exception of allocated site at Orchehill Rise and Station Overflow carparks, Change of use of existing public car parking will not be permitted unless equivalent and equally accessible parking can be provided as a replacement. This includes, but is not limited to the following locations: Packhorse Road, Bulstrode Way. Planning applications to increase the amount of public parking in Gerrards Cross will also be supported (subject to other policies within the plan). 	sites can be excluded.
Policy 13: Pedestrian Access and Walkway Routes	 a) To ensure that residents can walk safely to the town centre, public transport facilities, schools and other important facilities serving Gerrards Cross town, all new developments should ensure safe pedestrian access to link up with existing footways that, in turn, directly serve the Walkway Routes shown on the Appendix H or any other Walkway Routes subsequently identified. b) Proposals to enhance the identified Walkway Routes and any other Walkway Routes that are subsequently identified will be strongly supported. c) Developments will be expected to: make financial contributions toward the enhancement of these Walkway Routes; and not have an unacceptable 	sites can be excluded. This is a development management policy that enhances pedestrian access and Walkway Routes within Gerrards Cross town. For example developments are

	impact on Walkway Routes and provide a strategy to mitigate the impact of additional traffic movements on the safety and flow of pedestrian access.	network. This is a positive policy for the Burnham Beeches SAC because ensuring that a well- functioning local footpath network is present will promote local recreational access. In turn, this can help reduce recreational demand on protected nature conservation sites. Overall, Policy 13 is screened out from AA.
Chapter 10 – Environment		
	 a) The settlement boundary of Gerrards Cross Town is shown on the Figures F2. Development or redevelopment will be permitted within the settlement boundary subject to the other policies in this plan and those in the emerging Buckinghamshire Local Plan. b) Outside the settlement boundary within the Safeguarded Land, only development that is not prejudicial to the potential future use of this land to meet Gerrards Cross' longer term development needs will be acceptable. Within the Green Belt, development should comply with Policies 5 (General design of residential development) and 6 (Housing Mix) in this plan, National Policy and South Bucks Core Strategy. 	sites can be excluded. This is a development management policy that specifies where development / redevelopment will be permitted. Special requirements are provided for proposals in the Green Belt

		Overall, Policy 14 is screened out from AA.
	The following areas, as shown on green space maps A/B/C (Appendix D), are recognised as important to the local community and as such are designated as Local Green Spaces:	sites can be excluded. This is a development
	GS1 St Marys School playing/sports fields GS2 Oval Way central island GS3 St James Church Cemetery	management policy that protects eleven local greenspaces from development.
	GS4 Gerrards Cross C of E School playing/sports fields GS5 Gerrards Cross Cricket & Sports Club	Maintaining an adequate network of outdoor spaces is a key pillar in mitigating
	GS6 Gaviots Green GS7 Gaviots Close	recreational pressure. The availability of local greenspaces at their doorstep
	GS8 Memorial Centre Allotments GS9 Memorial Centre Tennis Courts	is likely to help reduce the number of recreational visits to European sites, such as the Burnham Beeches SAC.
	GS10 Memorial Centre Green area GS11 Memorial Centre War Memorial	Overall, Policy 15 is screened out from AA.
	Development on the designated Local Green Spaces will only be permitted in very special circumstances.	
Policy 16: Trees and Landscape	a) Any development that would result in the loss of, or the deterioration in the quality of an important natural feature(s), including protected trees and hedgerows will not normally be permitted. In exceptional circumstances where the benefit of development is considered to outweigh the benefit of	sites can be excluded.

	preserving natural features, development will be permitted subject to adequate compensatory provision being made. The retention of trees, hedgerows and other natural features in situ will always be preferable. Where the loss of such features is unavoidable, replacement provision should be of a commensurate value to that which is lost. b) Appropriate landscaping schemes to mitigate against the landscape impact of and complement the design of new development will be required, where appropriate. Conditions and/or planning obligations will be used to secure landscaping schemes and the replacement of trees, hedgerows or other natural features or their protection during the course of development.	landscape from negative impacts arising from new development. For example, trees, hedgerows and other natural features need to be retained or replacement provision sought.
Policy 17: Protection of Historic Environment	 a) Any designated historic heritage assets in the Parish and their settings, both above and below ground, will be conserved or enhanced for their historic and architectural significance and their importance to local distinctiveness, character and sense of place. In particular, these include, but are not limited to: o Bulstrode Camp Iron Age hillfort o Bulstrode Park o Gerrards Cross Common o Gerrards Cross Memorial Building b) Proposals for development that affect non-designated heritage assets will be considered taking account of the scale of any harm or loss and the significance of the heritage assets. 	sites can be excluded. This is a development management policy that protects Gerrards Cross' historic environment, including designated assets of historic and architectural significance. However, the protection of historic assets has no bearing on European sites.

	c) A full list of historical assets can be found at Appendix F	
Policy 18: Strategic Gaps	a) The Neighbourhood Plan designates a Strategic Gap, as shown on the Maps in Appendix G, at:	LSEs of Policy 18 on European sites can be excluded.
	➤ Gerrards Cross to Beaconsfield (map I)	This is a development
	➤ Gerrards Cross to Chalfont St Peter (map II)	management policy that designates four Strategic Gaps
	➤ Gerrards Cross to Higher Denham (map III)	in the parish to protect the distinctive identity of adjoining
	➤ Gerrards Cross to Tatling End (map IV)	settlements.
	b) Development proposals within the Strategic Gaps that will lead to the visual coalescence or will damage the integrity and distinctive identity of the adjoining settlements will not be supported.	
		Overall, Policy 18 is screened out from AA.

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