

ENVIRONMENTAL PLANNING POLICY | DESIGN | PRACTICE

HABITATS REGULATIONS ASSESSMENT FOR THE MID SUSSEX DISTRICT PLAN

Regulation 25 Stage

October 2011





Habitats Regulations Assessment for the Mid Sussex District Plan

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Abbreviations

AA Appropriate Assessment

AADT Annual Average Daily Traffic

FCT Favourable Condition Table

HDV Heavy Duty Vehicle

HRA Habitats Regulations Assessment

IROPI Imperative Reasons of Overriding Public Interest

keq/ha/yr Kilograms equivalent per hectare per year

Kg/ha/yr Kilograms per hectare per year

LDD Local Development Document

LNR Local Nature Reserve

NGR National Grid Reference

NO_X Oxides of nitrogen

RSS Regional Spatial Strategy

SAC Special Area of Conservation

SANG Suitable Alternative Natural Greenspace

SNCI Site of Nature Conservation Importance

SPA Special Protection Area

SSSI Site of Special Scientific Interest

μgm⁻³ Micrograms per cubic metre

Executive Summary

E1 Introduction

- E1.1 This report presents the findings and recommendations of the Habitats Regulations Assessment (HRA) for the Consultation Draft District Plan for Mid Sussex. The report has been prepared at an early stage in the development of the Plan in order that any potential effects of the Plan on the integrity of Ashdown Forest Special Area of Conservation (SAC) and Special Protection Area (SPA) are known at the start of the process. Further work can then be progressed to provide more detail and explore potential options for avoiding any adverse effects. This further work will be finalised before the Submission District Plan is published, which is the next stage in the development plan process.
- E1.2 A considerable amount of work on the HRA of the Mid Sussex draft Core Strategy (the District Plan's predecessor) was carried out. Much of this work is still relevant and forms the background to this report. However the preparation of the new District Plan provides the opportunity to review and update this work. A new screening exercise has been carried out to identify more precisely which elements of the plan are likely to lead to significant effects, and then to determine whether there will be adverse effects on site integrity.

E2 Purpose and Requirement for Habitats Regulations Assessment

- E2.1 The application of Habitats Regulations Assessment to land use plans is a requirement of the Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations), the UK's transposition of European Union Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). HRA must be applied to all Local Development Documents in England and Wales and aims to assess the potential effects of the plan against the conservation objectives of any sites designated for their nature conservation importance as part of the Natura 2000 network of European sites.
- E2.2 Under regulation 102 of the Habitats Regulations, the assessment must determine whether or not a plan will adversely affect the integrity of the European site(s) concerned. Where negative effects are identified, the process should consider alternatives to the proposed actions and explore mitigation opportunities, whilst adhering to the precautionary principle. A glossary of technical terms used in this summary is given towards the end.

E3 Scope of the Assessment

E3.1 The Consultation Draft District Plan's forerunner, the draft Core Strategy, underwent an HRA screening and scoping exercise in 2007. This revealed five designated areas potentially at risk of effects from within Mid Sussex:

- UE-0097_MSDC_HRA_6_051011NP
 - Ashdown Forest Special Area of Conservation (SAC);
 - Ashdown Forest Special Protection Area (SPA);
 - Castle Hill SAC;
 - Lewes Downs SAC; and
 - Mole Gap to Reigate Escarpment SAC.
- E3.2 Castle Hill, Lewes Downs and Mole Gap to Reigate Escarpment were screened out of the assessment, largely due to their distance from the district and the low likelihood of residents travelling along roads close to the sites. Natural England concurred with these findings in its screening opinion on the plan. The screening exercise found likely significant effects on Ashdown Forest SAC/SPA as a result of disturbance and atmospheric pollution.
- E3.3 Having identified likely significant disturbance and pollution effects, further work was undertaken by the Council to establish what evidence would be required to undertake the HRA. As a result, three studies were commissioned to provide information necessary to undertake the assessment and guide the planning of the area:
 - Ashdown Forest Visitor Survey Data Analysis (Natural England Commissioned Reports, Number 048: Clarke RT, Sharp J & Liley D 2010);
 - Visitor Access Patterns on the Ashdown Forest: Recreational use and nature conservation (UE Associates and University of Brighton, 2009); and
 - ▶ Habitats Regulations Assessment for the Mid Sussex District Council Core Strategy: Mid Sussex Air Quality Baseline Study (UE Associates, 2008).

E4 Assessment of Effects

Atmospheric pollution

- E4.1 Atmospheric pollution is a widespread issue, with background air quality heavily influenced by large point-source emitters including transboundary sources. Local pollutant sources are expected to affect Ashdown Forest, particularly in relation to habitats of the SAC, and especially from road traffic emissions. The Consultation Draft District Plan cannot feasibly influence causes of background pollution such as large point sources but, through its distribution of development and sustainable transport measures, will affect the way in which locally emitted pollutants reach the site.
- E4.2 The habitats qualifying for protection within Ashdown Forest SAC, and which are sensitive to air pollution, are European dry heaths and North Atlantic wet heaths. The main pollutant effects of interest are acid deposition and eutrophication by nitrogen deposition. The critical load or level (the level below which harm to habitats and species is not thought to occur) for each of these pollutant classes is already exceeded in parts of Ashdown Forest.

- E4.3 Additional sources of these pollutants generated as a result of proposals in the District Plan should be avoided or mitigated to prevent additional adverse effects on ecological integrity, while it would be beneficial to explore opportunities to improve baseline conditions.
- E4.4 The Design Manual for Roads and Bridges (DMRB; Highways Agency, 2007) provides guidance on assessment of the impact that road projects may have on local air quality. Specific provision is made in relation to sites designated under the Habitats Directive. In this instance the assessment is in relation to existing, as opposed to new roads, however the guidance clarifies that 'where appropriate, the advice may be applied to existing roads'. In accordance with this guidance, and with agreement from Natural England, the HRA examines whether there is a likely significant effect using the DMRB guidance. The criteria for defining such an effect include where:
 - Daily traffic flows will change by 1,000 or more movements a day; or
 - ▶ Heavy Duty Vehicle flows will change by 200 or more movements a day.
- E4.5 The number of homes to be included in the assessment is derived from the plan's housing strategy, but does not include dwellings that have already been built because these will already be included in baseline traffic flow data. Mid Sussex District Council is working with West Sussex County Council to estimate the increase in traffic flow along key roads within 200m of Ashdown Forest as a result of proposals within the Consultation Draft District Plan.
- E4.6 The Consultation Draft District Plan contains measures to promote sustainable transport over the plan period, including measures relating to existing development, and additional actions to assess and manage air pollution. These are intended to improve the overall sustainability of the district and will also reduce the traffic emissions from proposed development, including along roads passing through or close to Ashdown Forest. The measures include:

Summary of District Plan measures relating to atmospheric pollution

DP17 Transport: To have a policy that sets out that:

- development must support the objectives of the West Sussex Local Transport Plan, which are:
 - a high quality transport network that promotes a competitive and prosperous economy
 - a resilient transport network that complements the built and natural environment whilst reducing carbon emissions over time
 - access to services, employment and housing
 - a transport network that feels, and is, safer and healthier to use
- To meet these objectives at a local level, development proposals should:
 - be sustainably located to minimise the need for travel;
 - facilitate and promote the use of alternative modes of transport to the private car, such as walking, cycling and public transport;
 - not cause an unacceptable impact in terms of road safety and increased traffic congestion
 - be designed to adoptable standards, or other standards as agreed by the Local Planning Authority, as regards road widths and size of car parking spaces / garages
 - provide adequate car parking for the proposed development.

Car parking provision in new developments will be assessed against Mid Sussex Parking Standards

unless there is local evidence that indicates that these standards should be varied.

Where practical developments should be located and designed to incorporate facilities for charging plug-in and other ultra-low emission vehicles.

All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment.

DP24 Noise, air and light pollution:

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To have a policy that protects the environment and the quality of people's life from unacceptable levels of [noise, light and] air pollution by:

- Only permitting development which does not cause unacceptable levels of air pollution;
- Only permitting development on land adjacent to an existing use which generates air pollution
 where this can be mitigated to reduce exposure to poor air quality and/or would not cause any
 adverse effects on the proposed development;
- Assessing the potential impacts of new development and increased traffic levels on internationally designated conservation sites and adopting necessary avoidance or mitigation measures to address these impacts (see policy DP12 Ashdown Forest Special Area of Conservation and Special Protection Area');
- Ensure that development proposals (where appropriate) are consistent with Air Quality Management Plans.

DP12 Ashdown Forest SAC/SPA:

To have a policy which outlines the intention to develop a strategic approach to protect the Ashdown Forest Special Area of Conservation and Special Protection Area from recreational pressure and air pollution through the use of:

- Buffer zones that:
 - Prevent development within 400 metres of the Ashdown Forest
 - Allow development within 7 kilometres of the Ashdown Forest provided mitigation methods are employed (for instance Suitable Alternative Natural Green Spaces)
- An Access Management Strategy that reduces the impact of visitors on special interest features of the designated site.
- E4.7 Until more is known about the likely growth in traffic on roads within or close to Ashdown Forest it is not possible to assess the effectiveness of these policy proposals in avoiding adverse effects on the SAC/SPA. Recommendations for further measures to influence travel behaviour, modal split and traffic management are included within the main draft report.

Disturbance

E4.8 The bird species afforded protection by Ashdown Forest SPA are Dartford warbler and nightjar. The Forest supports approximately 2.1% and 1.1% of the UK's breeding population of these species, respectively; disturbance is expected to affect the SPA more than the SAC. Woodlark is also present in qualifying numbers but is not listed as a qualifying feature of the SPA. Many visitors to the Forest originate from the surrounding area, and increases in the number of homes around the Forest may compound the effects of disturbance from recreation of these birds of European importance.

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- E4.9 The findings of a visitor survey in 2008 found that Ashdown Forest attracts upwards of 1.3 million visitors each year. It also found that 60% of people interviewed during the survey visited for the primary purpose of walking the dog, while a further 30% visited to go for a walk. The potential effects of disturbance to ground and near-ground nesting breeding birds are described in the main draft report by reference to numerous studies in a range of locations. Summarising this literature review, potential impacts can be described as follows:
 - Increased nest predation by natural predators when adults are flushed from the nest or deterred from returning to it by the presence of people or dogs;
 - ▶ Chicks or eggs dying of exposure because adult birds are kept away from the nest;
 - Accidental trampling of eggs by people, given that (nightjar and woodlark) nests are on the ground and may be close to paths;
 - Predation of chicks or eggs by domestic dogs; and
 - Increasing stress levels in adult birds in response to perceived predation risk.
- E4.10 A statistical model of visiting rates of pedestrian and car visitors was developed, taking into account observed visitor rates from the 2008 field survey, the residential density of nearby areas, and car park size. The model can be used to predict the number of additional visitors to each access point, and therefore the whole Forest, arising from the proposed development of a specific number of dwellings in defined areas. The model provides a means to directly compare the consequences of development (in terms of increased SPA visitor numbers) at a potential development location. Accordingly, 100 new dwellings at Crowborough, in close proximity to parts of the SPA, is predicted to lead to 12.2 extra visitors per 16 hours, in contrast to 5.1 extra visitors for an equivalent number of dwellings at East Grinstead, further away from the Forest.
- E4.11 Following consultations with Natural England, a 7km zone of influence around Ashdown Forest was established. This is the area within which the majority (83%) of regular visitors to the Forest originate, and therefore where measures targeted at reducing pressure on the Forest would be most effective. Suitable Alternative Natural Greenspaces (SANG) are an example of such a measure. SANGs are sites that cater for the recreational needs of communities in order to reduce the likelihood of increasing visitor pressure and disturbance on important nature conservation areas, and should be supported by access management measures within Ashdown Forest itself. Natural England has stated that 8ha of SANG should be provided for every 1,000 increase in population (or part thereof) within this zone, in line with the Thames Basin Heaths approach to avoiding adverse effects on the site.
- E4.12 SANGs are characterised by a number of factors, as defined by Natural England:
 - For SANGs larger than 4ha there must be adequate parking for visitors, unless the site is intended for local use, i.e. within easy walking distance (400m) of the developments linked to it. The amount of car parking space should be determined by the anticipated use of the site and reflect the visitor catchment of both the SANG and the SPA.
 - It should be possible to complete a circular walk of 2.3-2.5km around the SANG.

- Car parks must be easily and safely accessible by car and should be clearly sign posted.
- ▶ The accessibility of the site must include access points appropriate for the particular visitor use the SANG is intended to cater for.
- ▶ The SANG must have a safe route of access on foot from the nearest car park and/or footpath/s.
- All SANGs with car parks must have a circular walk which starts and finishes at the car park.
- SANGs must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes.
- Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel.
- SANGs must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually-sensitive way-markers and some benches are acceptable.
- All SANGs larger than 12ha must aim to provide a variety of habitats for users to experience. Access within the SANG must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead.
- > SANGs must be free from unpleasant intrusions (e.g. sewage treatment works smells).
- > SANGs should be clearly sign-posted or advertised in some way.
- ▶ SANGs should have leaflets and/or websites advertising their location to potential users. It would be desirable for leaflets to be distributed to new homes in the area and be made available at entrance points and car parks.
- It would be desirable for an owner to be able to take dogs from the car park to the SANG safely off the lead.
- Where possible it is desirable to choose sites with a gently undulating topography for SANG.
- It is desirable for access points to have signage outlining the layout of the SANG and the routes available to visitors.
- It is desirable that SANGs provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water on part, but not the majority of sites is desirable.
- Where possible it is desirable to have a focal point such as a view point or monument within the SANG.
- E4.13 At the present stage it is not yet known precisely how many dwellings will come forward within the zone of influence, and therefore the amount of SANG that would be required to offset their adverse effects. However, it is possible to begin planning for the delivery of SANG as an important aspect of the district's infrastructure requirements.

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- E4.14 Within Mid Sussex, the options for creating SANG could include existing open space of SANG quality currently without public access, open space which is already accessible but which could be improved to perform better as SANG, or land in other uses which could be converted to SANG. In order to facilitate the delivery of SANG, a tariff will need to be agreed through which developer contributions can be collected within the 7km zone of influence. The tariff for SANG within Mid Sussex will firstly be determined by the preferred option for delivering SANG. The evidence base for establishing and justifying the tariff needs to be robust and informed by (i) estimations of the likely increase in population within the zone of influence, (ii) a detailed and costed programme of works to establish the SANG, and (iii) costs for long term management and maintenance of the site as SANG.
- E4.15 The District Plan contains measures to establish an avoidance and mitigation strategy, while the Council is also carrying out work on a preliminary draft Community Infrastructure Levy Charging Schedule and Infrastructure Delivery Plan. The measures include:

Summary of District Plan measures relating to disturbance

DP12 Ashdown Forest SAC/SPA:

To have a policy which outlines the intention to develop a strategic approach to protect the Ashdown Forest Special Area of Conservation and Special Protection Area from recreational pressure and air pollution through the use of:

- Buffer zones that:
 - Prevent development within 400 metres of the Ashdown Forest
 - Allow development within 7 kilometres of the Ashdown Forest provided mitigation methods are employed (for instance Suitable Alternative Natural Green Spaces)
- An Access Management Strategy that reduces the impact of visitors on special interest features
 of the designated site.
- E4.16 Recommendations for further work to identify SANG and access management and monitoring measures, and a mechanism to collect funds for delivery, are included within the draft report.

E5 Conclusions

E5.1 The HRA Report establishes the nature and severity of effects on the ecological integrity of Ashdown Forest and assesses the avoidance and mitigation measures put forward within the Consultation Draft District Plan. It is an interim assessment that informs the development of the District Plan, drawing on the information that is currently available. It provides recommendations for additional avoidance and mitigation measures to help ensure that adverse effects on the European sites can be avoided. However, it cannot currently be concluded that Consultation Draft District Plan will not adversely affect either the SAC or SPA.

- UE-0097_MSDC_HRA_6_051011NP
- E5.2 In relation to the SAC, it is not currently possible to determine the likelihood or scale of atmospheric pollution because there is insufficient data regarding the traffic growth effects of the plan. The Council is carrying out additional studies to provide a better understanding of the likely traffic implications of its development proposals, the outputs of which will be assessed in a future iteration of the report.
- E5.3 In relation to the SPA, good principles for avoiding and mitigating disturbance impacts within the SPA are included within the plan. But it is not currently possible to determine the scale of impacts because the spatial distribution of residential development has not been set, while possible sites for use as SANG have not yet been identified. However, once the spatial strategy for residential development is finalised, and if it can be demonstrated that sufficient good quality potential SANGs exist to provide an alternative recreational resource for the number of dwellings proposed within the zone of influence, it may be possible to conclude that adverse effects are avoidable. Further work on the District Plan following the current consultation stage will explore these items in greater detail with the aim of demonstrating the adverse effects are avoidable.



Glossary of terms

Acid deposition: caused by oxides of nitrogen (NO_X) (or sulphur dioxide) reacting with rain/cloudwater to form nitric (or sulphuric) acid, and is caused primarily by energy generation, as well as road traffic and industrial combustion.

Avoidance and mitigation measures: Avoidance measures which aim to avoid the occurrence of adverse effects on protected sites. Mitigation measures aim to reduce the severity of adverse effects and/or manage adverse effects in a way that lessens their impact.

Background air quality: A baseline measure of air quality conditions, within which existing local pollutant sources and transboundary sources are already represented.

Integrity: Ecological integrity can be defined as (ODPM, 2005): "The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified."

Local pollutant sources: Locally sources of pollution emissions, for example linear sources such as roads or point sources such as chimneys, but which directly affect local air quality.

Modal split: The percentage share of total journeys made that each mode of transport experiences. Modes include car, taxi, bus, train, cycling and walking. Sustainable transport policies aim to encourage modal shift whereby more sustainable forms of transport become more popular, and less sustainable modes become less popular.

Nitrogen deposition: consists of the input of nitrogen from NO_X (and sometimes ammonia) emissions by deposition, and is caused primarily by road traffic, as well as energy generation, industrial combustion and agricultural practices. Nitrogen deposition leads to nutrient enrichment (eutrophication) and toxic damage to vegetation.

Point source emitters: Can be either large or small sources of pollution from a fixed point such as a chimney, as opposed to linear source such as a road. Emissions from large point sources, such as a power station, can travel long distances and affect background air quality over wide areas, and can include transboundary effects (i.e. crossing intra- or international administrative boundaries).

Precautionary Principle: The European Commission (2000a) describes the principle as: "If a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment... decision-makers then have to determine ... the potential consequences of taking no action, the uncertainties inherent in the scientific evaluation, and ... possible ways of managing the risk. " (See also section 1.2 of the main report.)

Process contribution: The contribution of a proposed process to air pollution. A process may be an industrial or combustive process, or a proposal which effects a change in traffic flow for example.

SAC: Special Areas of Conservation are strictly protected sites designated under European Union Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). SACs make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).

SPA: Special Protection Areas are strictly protected sites classified in accordance with Article 4 of European Union Directive 2009/147/EC on the conservation of wild birds (the Birds Directive). They are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species.

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1 Introduction

1.1 Background

- 1.1.1 This report presents the findings and recommendations of the Habitats Regulations Assessment (HRA) for the Consultation Draft District Plan for Mid Sussex. The report has been prepared at an early stage in the development of the Plan in order that any potential effects of the Plan on the integrity of Ashdown Forest Special Area of Conservation (SAC) and Special Protection Area (SPA) are known at the start of the process. Further work can then be progressed to provide more detail and explore potential options for avoiding any adverse effects. This further work will be finalised before the Submission District Plan is published, which is the next stage in the development plan process.
- 1.1.2 A considerable amount of work on the HRA of the Mid Sussex draft Core Strategy (the District Plan's predecessor) was carried out. Much of this work is still relevant and forms the background to this report. However the preparation of the new District Plan provides the opportunity to review and update this work. A new screening exercise has been carried out to identify more precisely which elements of the plan are likely to lead to significant effects, and then to determine whether there will be adverse effects on site integrity.

1.2 Habitats Regulations Assessment

- 1.2.1 The application of Habitats Regulations Assessment to land use plans is a requirement of the Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations), the UK's transposition of European Union Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). HRA must be applied to all Local Development Documents (LDD) in England and Wales and aims to assess the potential effects of the plan against the conservation objectives of any sites designated for their nature conservation importance as part of a system known collectively as the Natura 2000 network of European sites.
- 1.2.2 European sites provide ecological infrastructure for the protection of rare, endangered or vulnerable natural habitats and species of exceptional importance within the European Union. These sites consist of Special Areas of Conservation (SACs, designated under the Habitats Directive) and Special Protection Areas (SPAs, designated under European Union Directive 2009/147/EC on the conservation of wild birds (the Birds Directive)). Meanwhile, Government policy and Circular 06/05 (ODPM, 2005)) recommends that Ramsar sites (UNESCO, 1971) are treated as if they are fully designated European sites for the purposes of considering development proposals that may affect them.

1.2.3 Under regulation 102 of the Habitats Regulations, the assessment must determine whether or not a plan will adversely affect the integrity of the European site(s) concerned. Where negative effects are identified, the process should consider alternatives to the proposed actions and explore mitigation opportunities, whilst adhering to the precautionary principle. The European Commission (2000a) describes the principle as follows:

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

Decision-makers then have to determine what action to take. They should take account of the potential consequences of taking no action, the uncertainties inherent in the scientific evaluation, and they should consult interested parties on the possible ways of managing the risk. Measures should be proportionate to the level of risk, and to the desired level of protection. They should be provisional in nature pending the availability of more reliable scientific data.

Action is then undertaken to obtain further information enabling a more objective assessment of the risk. The measures taken to manage the risk should be maintained so long as the scientific information remains inconclusive and the risk unacceptable.

1.2.4 The hierarchy of intervention is important: where significant effects are likely or uncertain, plan makers must firstly seek to avoid the effect, for example, through a change of policy. If this is not possible, mitigation measures should be explored to remove or reduce the effect. If neither avoidance, nor subsequent mitigation is possible, alternatives to the plan should be considered. Such alternatives should explore ways of achieving the plan's objectives that avoid significant effects entirely. If there are no alternatives suitable for removing an adverse effect, plan-makers must demonstrate, under the conditions of Regulation 103 of the Habitats Regulations, that there are Imperative Reasons of Overriding Public Interest (IROPI) to continue with the proposal. This is widely perceived as an undesirable position and should be avoided if at all possible.

1.3 Guidance and Best Practice

- 1.3.1 Guidance on Habitats Regulations Assessment has been published in draft form by the Government (Department for Communities and Local Government (DCLG), 2006). This draws on advice from a range of experts as well as European Union guidance regarding methodology for Appropriate Assessment of plans (European Commission, 2001).
- 1.3.2 The guidance recognises that there is no statutory method for undertaking Habitats Regulations Assessment and that the adopted method must be *appropriate* to its purpose under the Habitats Directive and Regulations; this concept is one of the reasons why HRA is also often referred to as Appropriate Assessment (AA).

- 1.3.3 The guidance identifies three stages to the HRA process:
 - ▶ AA1: Likely Significant Effects (Screening)
 - AA2: Appropriate Assessment and Ascertaining the Effect on Integrity
 - ▶ AA3: Mitigation Measures and Alternative Solutions
- 1.3.4 Where stage AA3 cannot produce alternative solutions or mitigation to remove or reduce adverse effects to insignificant levels, there may be a need to explore Imperative Reasons of Overriding Public Interest. This is discouraged by DCLG and will only apply in exceptional circumstances. The three stages collectively make up Habitats Regulations Assessment, while Stage AA2 is the point at which Appropriate Assessment of the plan is carried out if the evidence points to a need for such an assessment.
- 1.3.5 Natural England has produced more prescriptive draft guidance on the assessment of Local Development Documents under the provisions of the Habitats Regulations (Tyldesley, 2009). This introduces the concept of a stepped approach to the assessment process and fits within the framework of the three stages identified by DCLG. Whilst the guidance is draft it nevertheless provides a helpful approach to HRA and is followed within this report. Table 1.1 illustrates how the two approaches (DCLG and Natural England) can be operated as one integrated methodology to achieve the same outcome from each approach.

1.4 The HRA Process to Date

- 1.4.1 The Consultation Draft District Plan's forerunner, the draft Core Strategy, underwent an HRA screening and scoping exercise in late 2007 and early 2008 (Tesserae Environmental, 2008) using a previous version of the Natural England guidance. This revealed five designated areas potentially at risk of effects from the Plan:
 - Ashdown Forest SAC;
 - Ashdown Forest SPA;
 - Castle Hill SAC;
 - Lewes Downs SAC; and
 - Mole Gap to Reigate Escarpment SAC.
- 1.4.2 Castle Hill, Lewes Downs and Mole Gap to Reigate Escarpment were screened out of the assessment, largely due to their distance from the district and the low likelihood of residents travelling along roads close to the sites. Natural England (2008) concurred with these findings in its screening opinion on the Core Strategy. Acknowledging that the plan is not necessary to the management of any European site, the screening exercise found likely significant effects on Ashdown Forest SAC/SPA as a result of disturbance and atmospheric pollution.

Table 1.1: Stages in the HRA process drawing on guidance from DCLG and Natural England

DCLG Stage	Natural England (Tyldesley) Ste	ps	
AA1: Likely	1. Gather the evidence base about international sites.		
significant effects	2. Consult Natural England and other stakeholders on the method for HRA and sites to be included.		
	3. Screen elements of the plans for likelihood of significant effects.		
	4. Eliminate likely significant effects by amending the plan / option.		
	5. Consult Natural England and other stakeholders on the findings of the screening stage, and scope of the Appropriate Assessment if required.		
AA2: Appropriate Assessment and ascertaining the effect on integrity		8. Assess additions and changes to the plan and prepare draft HRA record. 9. Complete the draft	
AA3: Mitigation measures and alternative solutions	7. Amend the plan / option or take other action to avoid any adverse effect on integrity of European site(s).	Appropriate Assessment and	
Reporting and	10. Submit draft HRA and supporting documents to Natural England.		
recording	11. Consult Natural England, other stakeholders and the public (if suitable).		
	12. Publish final HRA record and submit with Natural England letter to Inspector for Examination.		
	13. Respond to any representations relating to the HRA and to Inspector's questions.		
	14. Check changes to the plan monitoring required.	n, complete HRA record and establish any	

- 1.4.3 Disturbance is expected to result from increasing recreational activity on the Forest as a consequence of the District Plan's residential allocations and related population growth. Atmospheric pollution is a potential result of residential, employment and retail allocations and their associated traffic movements. Residential development is expected to be the greatest contributor, particularly at locations such as East Grinstead where increased traffic movements on roads across, or within 200m of the Forest are likely.
- 1.4.4 Substantial work in relation to HRA has already been undertaken in support of the District's draft Core Strategy. UE Associates previously produced baseline studies for the extent of atmospheric pollution and visitor activity within Ashdown Forest (November 2008 and September 2009) and technical notes (most recently in December 2009) to inform strategic spatial planning decisions as the District Plan's predecessor evolved.

1.4.5 Throughout this time, several meetings were held with Natural England and other nature conservation bodies (including Environment Agency, RSPB and Conservators of Ashdown Forest) to ensure the studies were fit for purpose, based on appropriate data, and led to the necessary preparation of avoidance and mitigation measures to ensure the Core Strategy could be delivered without adverse effects on the ecological integrity of the Forest's heathlands or Annex 1 birds.

1.5 Related Studies

- 1.5.1 Having identified likely significant air pollution and recreational disturbance effects during the screening stage, further work was undertaken by the Council to establish what evidence would be required to undertake the HRA.
- 1.5.2 Two baseline studies were undertaken during summer and autumn 2008 to provide information necessary to undertake the assessment and guide the planning of the area, with further work carried out by Natural England in 2010. These were:
 - Ashdown Forest Visitor Survey Data Analysis (Natural England Commissioned Reports, Number 048: Clarke RT, Sharp J & Liley D 2010);
 - Visitor Access Patterns on the Ashdown Forest: Recreational use and nature conservation (UE Associates and University of Brighton, 2009); and
 - Habitats Regulations Assessment for the Mid Sussex District Council Core Strategy: Mid Sussex Air Quality Baseline Study (UE Associates, 2008).

1.6 Purpose and Structure of this Document

- 1.6.1 This report documents the process, findings and recommendations of HRA stages AA2 and AA3 as described in the DCLG (2006) guidance. It reviews and updates work carried out for the draft Core Strategy, and identifies, analyses and quantifies (where possible) potential negative impacts on the European sites in question, to determine their effects on site integrity.
- 1.6.2 It presents measures to avoid or reduce these effects to the point at which they are no longer significant, either alone or in combination with other plans and projects. The remaining sections of the report are as follows:
 - ▶ Chapter Two: gives an overview of the district and introduces the District Plan;
 - ▶ Chapter Three: identifies the European sites which are receptors of the plan's likely significant effects, together with ecological information about these sites;
 - ▶ Chapter Four: reviews and updates the screening stage of HRA. It introduces the Appropriate Assessment stage and describes how to interpret it;
 - ▶ Chapters Five and Six: describe the findings of the assessment, in relation to atmospheric pollution and disturbance from recreation respectively, and introduce avoidance and mitigation measures;

- ▶ Chapter Seven: illustrates the outcomes of the HRA process by applying avoidance and mitigation measures to the identified effects on each site to determine whether there will be adverse effects on integrity; and
- ▶ Chapter Eight: presents consultation arrangements and concludes the document.



2 Mid Sussex and the District Plan

2.1 Character and Geography of the District

- 2.1.1 Mid Sussex is located within the County of West Sussex. It lies on the eastern edge of the County and shares boundaries with the Lewes and Wealden Districts in East Sussex to the east, Tandridge District in Surrey to the north, the city of Brighton and Hove to the south, Horsham District to the west and Crawley Borough to the north-west. Mid Sussex covers an area of some 33,152 hectares (approximately 128 square miles) and includes the three main towns of East Grinstead, Burgess Hill and Haywards Heath, set within a predominantly rural area with scattered villages and hamlets. Major road and rail links are features of the district bisecting the different areas and providing excellent accessibility to a variety of destinations, though generally speaking the north-south routes within the district are of better quality than the east-west routes. Gatwick airport lies just to the north-west of Mid Sussex and has an important influence on the district, attracting businesses, residents and visitors to the area.
- 2.1.2 Office for National Statistics data¹ (mid-year population estimate June 2010, and total dwelling stock April 2010) shows that approximately 132,500 people live in 57,070 households giving an average dwelling occupancy of 2.32 persons per household. By comparison, in 1981 the population was 112,941 and the number of homes 40,417 (2.79 persons per household). These changes are the result of decreasing household sizes, the district's popularity as a place to live and its convenient location as a commuting zone for both London and the south coast. Some 60% of the current population live in the three main towns, with the remaining 40% living in the smaller villages and rural areas. The district has a reasonably balanced population in terms of age and gender, although there are fewer young adults and more middle-aged and elderly inhabitants than the national average.
- 2.1.3 The district represents three national landscape character areas (the High Weald, the Low Weald and the South Downs), while the Landscape Character Assessment for Mid Sussex identifies ten distinct character areas, each with specific land management and planning guidelines. Approximately 60% of the district is covered by nationally protected landscape designations, making it one of the most highly designated administrative areas in England; the High Weald Area of Outstanding Natural Beauty (AONB) and South Downs National Park are two higher-profile designations.
- 2.1.4 The district also has 13 Sites of Special Scientific Interest (SSSI), 50 Sites of Nature Conservation Importance (SNCI), and five Local Nature Reserves (LNR), and is the tenth most wooded district in the south east. Two thirds of its woodland is classified as ancient, which covers 16% of the district's area. Ashdown Forest SAC/SPA lies to the east of the north of the District, south and south-east of East Grinstead.

¹ Online at: http://neighbourhood.statistics.gov.uk [Accessed 25/7/11]

2.2 The District Plan

2.2.1 In June 2010, the Council halted work on its draft Core Strategy following the Government's announcement of its intention to make changes to the planning system, including the abolition of the regional spatial strategies. In April 2011, the Council agreed a timetable for the preparation of the District Plan, which will provide the overall planning policy framework for Mid Sussex for the next 20 years. The Council also commenced work on a Local Housing Assessment for Mid Sussex in June 2011, which identifies the potential future housing need in the District up to 2031. The findings of the Local Housing Assessment will be used to inform policy choices made during within the District Plan.

2.2.2 The District Plan will:

- Put in place the overall planning framework for Mid Sussex with a coherent set of policies to protect and enhance the distinctive character of the District and its towns and villages for the next 20 years;
- Encourage local communities to develop 'bottom up' neighbourhood plans; and
- Set out the Council's infrastructure needs and requirements in the Plan and ensure the necessary work on the Community Infrastructure Levy is completed in line with the Council's timetable.
- 2.2.3 The plan is based on the vision for the district set out in the Mid Sussex Sustainable Communities Strategy 2008-18:

A thriving and attractive District, a desirable place to live, work and visit. Our aim is to maintain, and where possible, improve the social, economic and environmental well being of our District and the quality of life for all, now and in the future.

- 2.2.4 The vision is underpinned by four priority themes that promote the development of sustainable communities:
 - Protecting and enhancing the environment;
 - Promoting economic vitality;
 - Ensuring cohesive and safe communities; and
 - Supporting healthy lifestyles.
- 2.2.5 The District Plan is supported by a wide range of evidence studies, one of which is the Local Housing Assessment. On the basis of this assessment of housing needs, the housing strategy identifies an overall target of 10,600 homes to be built over the 20 year period. Of these:
 - Approximately 4,300 dwellings are already committed (i.e. either already allocated through the Mid Sussex Local Plan or the Small Scale Housing Allocations Document, or already granted planning permission but not yet implemented);
 - Around 3,500-4,000 dwellings will come forward through strategic development at the north and east of Burgess Hill; and

- ▶ Approximately 2,300-2,800 dwellings will need to be delivered elsewhere in the district, the distribution of which is to be defined through forthcoming Neighbourhood Plans if possible.
- 2.2.6 If it appears that development will not be delivered through Neighbourhood Plans, then the Council will need to consider producing its own allocations document. The timely provision of necessary infrastructure is essential to the success of sustainable development. The Council intends to introduce a Community Infrastructure Levy to fund this infrastructure, and will be consulting on a preliminary draft Community Infrastructure Levy Charging Schedule and Infrastructure Development Plan shortly after consultation on the District Plan.
- 2.2.7 The District Plan's policy proposals are listed in **Table 2.1**.

Table 2.1: District Plan proposed policies

	Policy	title	
	Quanti	ty and type of development	
	DP1	Economic development	
	DP2	Retail development	
	DP3	Housing	
	DP4	General principles for Strategic Development at Burgess Hill	
	DP5	Strategic allocation to the east of Burgess Hill at Kings Way	
	DP6	Strategic allocation to the north and northwest of Burgess Hill	
	Development in the countryside		
	DP7	Protection and enhancement of countryside	
	DP8	Preventing coalescence	
	DP9	Sustainable rural development and the rural economy	
1	DP10	New homes in the countryside	
1	DP11	High Weald Area of Outstanding Natural Beauty	
	DP12	Ashdown Forest Special Area of Conservation and Special Protection Area	
	DP13	South Downs National Park	
	DP14	Setting of the South Downs National Park	
	DP15	Tourism	
		ry of infrastructure	
	DP16	Securing infrastructure	
	DP17	Transport	
	DP18	Rights of Way and other recreational routes	

DP19	Communication Infrastructure
DP20	Leisure and cultural facilities and activities
DP21	Community facilities and local services
Nature	e and quality of development – design
DP22	Character and design
DP23	Accessibility
DP24	Noise, air and light pollution
Nature	e and quality of development – housing
DP25	Housing mix
DP26	Affordable housing
DP27	Rural exception sites
DP28	Gypsy and travellers
	31 3
	e and quality of development – historic environment
Nature	e and quality of development – historic environment
Nature DP29	e and quality of development – historic environment Listed Buildings and other buildings of merit
DP29	e and quality of development – historic environment Listed Buildings and other buildings of merit Conservation Areas
DP29 DP30 DP31 DP32	Listed Buildings and other buildings of merit Conservation Areas Historic Parks and Gardens
DP29 DP30 DP31 DP32	Listed Buildings and other buildings of merit Conservation Areas Historic Parks and Gardens Archaeological sites
DP29 DP30 DP31 DP32 Nature	E and quality of development – historic environment Listed Buildings and other buildings of merit Conservation Areas Historic Parks and Gardens Archaeological sites and quality of development – natural resources
DP29 DP30 DP31 DP32 Nature	E and quality of development – historic environment Listed Buildings and other buildings of merit Conservation Areas Historic Parks and Gardens Archaeological sites E and quality of development – natural resources Biodiversity / protection of natural habitats
DP29 DP30 DP31 DP32 Nature DP33 DP34	Listed Buildings and other buildings of merit Conservation Areas Historic Parks and Gardens Archaeological sites and quality of development – natural resources Biodiversity / protection of natural habitats Sustainable resources
DP29 DP30 DP31 DP32 Nature DP33 DP34 DP35	Listed Buildings and other buildings of merit Conservation Areas Historic Parks and Gardens Archaeological sites and quality of development – natural resources Biodiversity / protection of natural habitats Sustainable resources Renewable energy in new developments

3 European Site Information

3.1 Introduction

3.1.1 In accordance with Natural England's screening opinion, the assessment focuses on Ashdown Forest SAC/SPA; see **Figure 3.1**. These designations are described in the following sections. **Chapter 4** goes on to re-screen the District Plan on the basis of this information.

3.2 Site Descriptions

3.2.1 An ecological description of Ashdown Forest is shown in **Box 1** below.

Box 1: Site descriptions

Special Area of Conservation interest

Ashdown Forest contains one of the largest single continuous blocks of lowland heath in south-east England, with both European dry heaths and, in a larger proportion, North Atlantic wet heath.

The dry heath in Ashdown Forest is an extensive example of the south-eastern *Calluna vulgaris – Ulex minor* community. This vegetation type is dominated by heather *Calluna vulgaris*, bell heather *Erica cinerea* and dwarf gorse *Ulex minor*, with transitions to other habitats. It supports important lichen assemblages, including species such as *Pycnothelia papillaria*. This site supports the most inland remaining population of hairy greenweed *Genista pilosa* in Britain.

The Erica tetralix – Sphagnum compactum wet heath element provides suitable conditions for several species of bog-mosses Sphagnum spp., bog asphodel Narthecium ossifragum, deergrass Trichophorum cespitosum, common cotton-grass Eriophorum angustifolium, marsh gentian Gentiana pneumonanthe and marsh clubmoss Lycopodiella inundata. The site supports important assemblages of beetles, dragonflies, damselflies and butterflies, including the nationally rare silver-studded blue Plebejus argus

The site also supports a significant presence of great crested newt *Triturus cristatus*, although this is not a primary reason for site selection.

Special Protection Area interest

Ashdown Forest is located in the High Weald of East Sussex in south-east England, where valley mires, heath and damp woodland have developed on soils derived from Hastings Sands (Lower Cretaceous). Once a royal hunting forest, reduced grazing has resulted in the accelerated development of woodland and encroachment of bracken *Pterdium aquilinium* over former heath. Nevertheless, some fine examples of heathland habitats remain, with humid or wet heath predominating (around 45% cover), dominated by heather, bell heather and cross-leaved heath *E. tetralix* in the dampest conditions. Where drier heaths occur (around 15% cover) they are dominated by heather in association with gorse *Ulex europaeus* and dwarf gorse. Streamsides and mires add further variety (around 5% cover), with *Sphagnum* mosses, cottongrass *Eriophorum* sp., bog asphodel and round-leaved sundew *Drosera rotundifolia* all characteristic plants. The woodlands (around 35% cover) are also varied, with birch *Betula* sp. typically establishing first over heath, followed by oak *Quercus robur*, willow *Salix* sp. and pine *Pinus* sp. in places, eventually forming dense and shaded areas with sparse ground flora.

Together with the nearby Wealden Heaths SPA and Thames Basin Heath SPA, Ashdown Forest forms part of a complex of heathlands in southern England that support breeding bird populations of European importance – in particular nightjar *Caprimulgus europaeus* and Dartford warbler *Sylvia undata*. Breeding birds of scrub and woodland (such as woodlark *Lullula arborea* [also an Annex 1 species occurring in qualifying numbers] and Eurasian hobby *Falco subbuteo*) are also associated with the varied mosaic of their respective habitats, distributed over the higher slopes and valleys of the High Weald.

Source: adapted from Joint Nature Conservation Committee (JNCC), 2001 and 2008

3.3 Qualifying Features

3.3.1 The qualifying features of each site (i.e. the reasons for which the SAC and SPA were designated) are listed in **Table 3.1**.

Table 3.1: Qualifying features of the Ashdown Forest SAC and SPA

Site	Qualifying Feature	Listing	
Ashdown	Primary reasons for site selection		
Forest SAC (2,729 ha)	European dry heaths, for which this is considered to be one of the best areas in the United Kingdom.	EC Habitats Directive 1992: Annex I Habitat	
	Northern Atlantic wet heaths with <i>Erica</i> tetralix, for which this is considered to be one of the best areas in the United Kingdom.	EC Habitats Directive 1992: Annex I Habitat	
	Present but not a primary re	eason for site selection	
	Great crested newt <i>Triturus cristatus</i> , for which the area is considered to support a significant presence.	EC Habitats Directive 1992: Annex II Species	
Ashdown	Article 4.1 Qualification		
Forest SPA (3,207 ha)	Dartford warbler, 20 pairs representing 2.1% of the breeding population in Great Britain (Count, as at 1994).	EC Birds Directive 1979: Annex I	
	Nightjar, 35 pairs representing 1.1% of the breeding population in Great Britain (Count, as at 1991 and 1992).	EC Birds Directive 1979: Annex I	

3.4 Vulnerabilities and Opportunities

3.4.1 Every European site has distinctive characteristics that make it vulnerable to a variety of impact-inducing activities. Many sites, due to their location or condition, also offer various opportunities for improvement. Identified vulnerabilities and opportunities of Ashdown Forest are shown in **Table 3.2**.

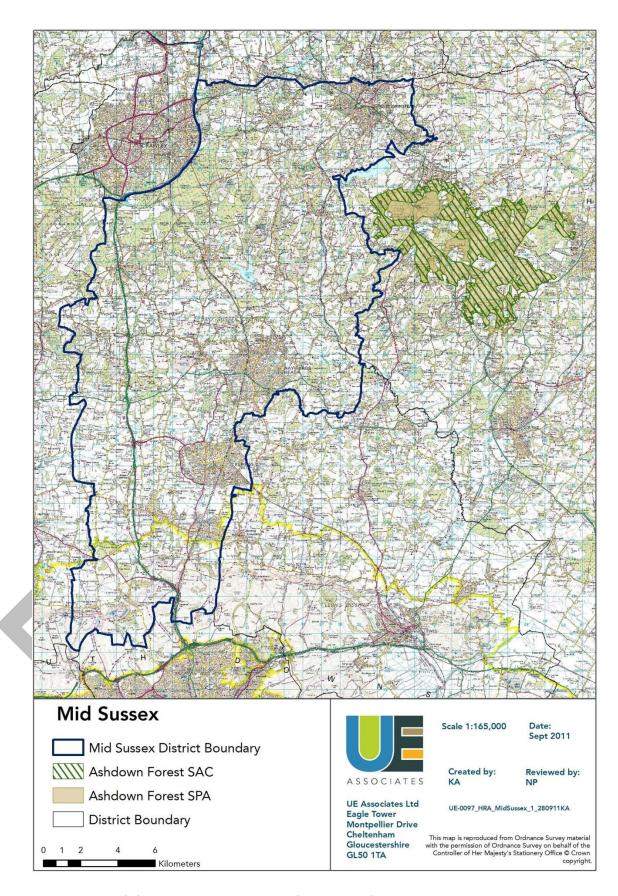


Figure 3.1: Ashdown Forest SAC/SPA in relation to Mid Sussex

Table 3.2: Vulnerabilities and opportunities within Ashdown Forest

Vulnerabilities *

- Lack of management coordination (insofar as the absence of management would result in degradation, but a management plan is in place).
- Rapid succession from open heathland to woodland.
- Lack of grazing the optimum management for this site is grazing; however, only approximately 19% of the Forest is grazed.
- Obstacles to grazing include public opposition to fencing, availability of graziers/suitable livestock, and constraints on dogwalkers.
- The spread of scrub and invasive/non-native species such as bracken, rhododendron Rhododendron sp.
- Lack of resources for scrub clearance, bracken mowing, etc., particularly in the ungrazed area.
- The areas not under the Conservators remit tend not to be grazed and have varying degrees of conservation management.
- Most of the recreation on the site is informal, such as walking and horse riding. However, in places the use is intense resulting in damage to rights of way and disturbance to the Forest and the bird assemblage it supports.
- Public access may also prevent expansion of the grazed area.
- Effects of traffic pollutants (eg, nitrogen deposition) on vegetation and species diversity.
- Possible long-term drying out of the site may take place due to borehole extraction and transpiration from an increase in vegetation cover.

Opportunities *

- The majority of the site (including the grazed area) is managed sympathetically by the Conservators of Ashdown Forest, according to an agreed management plan.
- The lack of grazing is now being addressed through a grazing strategy, including the need for fencing, constraints on dog walkers and other forms of informal recreation, and improved availability of appropriate livestock.
- Where possible, problems of intense recreation are being addressed through the Integrated Management Plan of the Conservators of Ashdown Forest and through a horse riding permit system.
- Recent increased scrub clearance is likely to have a beneficial effect on wet heath.
- Improved awareness through code of conduct for dog-walkers.
- Improved coordination of management; Higher Level
 Stewardship (HLS), close shepherded grazing project, honey-pot approach
- * Sources include Natura 200 Data Forms (available from JNCC: http://jncc.defra.gov.uk/page-0) and the *Strategic Forest Plan* (Conservators of Ashdown Forest, 2008)

3.5 Conservation Objectives

3.5.1 The Habitats Directive requires that Member States maintain or where appropriate restore habitats and species populations of European importance to favourable conservation status. Guidance from the EC (2000b; p.19) states: "The conservation status of natural habitat types and species present on a site is assessed according to a number of criteria established by Article 1 of the Directive. This assessment is done both at site and network level". In the UK, the term favourable condition has been used to differentiate the status of a site as compared to that of the wider network of European sites.

- 3.5.2 Regulation 102 requires that an Appropriate Assessment is made of the implications for each site in view of the site's conservation objectives. To make such an assessment, it is necessary to understand in more detail the features of the sites that contribute to their favourable condition or conservation status. Natural England has published detailed Favourable Condition Tables (FCT) in which various attributes of the habitat and species populations are defined for assessing site condition (Appendix I). These have been developed from the definition of Favourable Conservation Status provided in Article 1 of the Habitats Directive (Box 2 overleaf).
- 3.5.3 For the populations of birds within Ashdown Forest SPA, favourable conservation status can be defined by reference to Article 1(i), and for the habitats within the SAC by reference to Article 1(e). Conservation objectives for the Ashdown Forest SPA would therefore be:
 - Dijective 1: Maintain the population of each of the Annex 1 bird species as a viable component of their natural habitats on a long-term basis;
 - ▶ Objective 2: Maintain the range (geographic extent) of the population of each of the Annex 1 bird species for the foreseeable future; and
 - Dijective 3: Maintain sufficient area of suitable habitat to maintain the populations of each of the Annex 1 bird species on a long term basis.
- 3.5.4 For the SAC habitats, the conservation objectives developed from the definition of favourable conservation status are:
 - Objective 4: The geographical distribution of the habitats and their overall area within the sites should be maintained or increased;
 - Descrive 5: The mix of species (their species structure) and the ecological interrelationships between these and other environmental and management factors (ecological function) which are needed for the long-term maintenance of the habitats should be likely to continue to exist; and
 - Objective 6: The conservation status of the habitats' typical species are maintained in terms of their population size, range and habitat extent.
- 3.5.5 Some of the typical species of each Annex 1 habitat are listed in **Table 3.3**. These are derived from a combination of sources, including the Joint Nature Conservation Committee (JNCC) Annex 1 habitat accounts and the *Interpretation Manual of European Union Habitats* (EC, 2007).

Table 3.3: Typical species of Annex 1 habitat types present within SAC

Annex 1 Habitat Type	Typical Species
European dry heaths	Bell heather <i>Erica cinerea</i> Dwarf gorse <i>Ulex</i> minor, Reptiles (adder, common lizard, sand lizard, smooth snake), Ants, bees and wasps (Hymenoptera), Beetles (Coleoptera), Dragonflies (Odonata)
North Atlantic wet heaths with <i>Erica tetralix</i>	Cross-leaved heath <i>Erica tetralix</i> , <i>Sphagnum compactum</i> , Deer grass <i>Trichophorum cespitosum</i> , Silver studded blue butterfly <i>Plebejus argus</i>

Box 2: Extract from Managing Natura 2000 Sites (EC, 2000)

Conservation status is defined in Article 1 of the Habitats Directive. For a **natural habitat**, Article 1(e) specifies that it is: 'the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species ...'.

For a species, Article 1(i) specifies that it is: 'the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its population ...'

The Member State has therefore to take into account all the influences of the environment (air, water, soil, territory) which act on the habitats and species present on the site.

Favourable conservation status is also defined by Article 1(e) for natural habitats and Article 1(i) for species.

For a natural habitat, it occurs when:

- 'its natural range and areas it covers within that range are stable or increasing;
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable'.

For a species, it occurs when:

- 'the population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis'.

The favourable conservation status of a natural habitat or species has to be considered across its natural range, according to Articles 1(e) and 1(i), i.e. at biogeographical and, hence, Natura 2000 network level. Since, however, the ecological coherence of the network will depend on the contribution of each individual site to it and, hence, on the conservation status of the habitat types and species it hosts, the assessment of the favourable conservation status at site level will always be necessary.

The conservation status of natural habitat types and species present on a site is assessed according to a number of criteria established by Article 1 of the Directive. This assessment is done both at site and network level.



4 Appropriate Assessment

4.1 Introduction

4.1.1 This chapter reviews and updates the findings of the previous HRA screening exercise for the draft Core Strategy, before going on to describe the Appropriate Assessment stage.

4.2 Review and Update of the Screening Stage

- 4.2.1 In accordance with regulation 102(1) of the Habitats Regulations the purpose of the screening exercise was, acknowledging that the plan is not directly connected with or necessary to the management of any European site, to identify which elements of the District Plan are considered likely to lead to significant effects at a European site. The screening process was initially carried out for the draft Core Strategy by planning officers from Mid Sussex District Council, and subsequently updated and expanded by Tesserae Environmental (2008). Its findings were endorsed by Natural England, the statutory agency for nature conservation.
- 4.2.2 Since the original HRA screening exercise was carried out both guidance on the HRA process and the content and structure of the District Plan have changed. This provides a helpful opportunity to revisit the screening exercise to update its findings and more precisely identify which elements of the plan are likely to lead to significant effects.
- 4.2.3 To document potential effects, a classification system derived from the Tyldesley guidance (2009) can be used. Four broad categories are employed as follows:

Category A	Elements of the plan / options that would have no negative effect on a European site at all
Category B	Elements of the plan / options that could have an effect, but the likelihood is there would be no significant negative effect on a European site either alone or in combination with other elements of the same plan, or other plans or projects
Category C	Elements of the plan / options that could or would be likely to have a significant effect alone and will require the plan to be subject to an Appropriate Assessment before it may be adopted
Category D	Elements of the plan / options that would be likely to have a significant effect in combination with other elements of the same plan, or other plans or projects and will require the plan to be subject to an Appropriate Assessment before the plan may be adopted

4.2.4 Categories A, C and D are subdivided so that the specific reason why the assessor has allocated the policy or proposal to that category is more transparent, and more directly related to the ways in which the plan may affect a European site. These subdivisions are detailed in **Appendix II**. These categories, and traffic light colour-coded sub-categories, provide the means of recording the results of the assessment in such a way that important issues are identified whilst policies that have no effect are screened out.

- 4.2.5 The revised screening findings are illustrated in **Appendix II**.
- 4.2.6 Likely or uncertain significant effects are determined for Ashdown Forest SAC in relation to impacts on Annex 1 habitats and their typical species through atmospheric pollution, principally as a consequence of increased traffic movements along roads close to or within the Forest. The cumulative or in combination effects of residential, employment and retail proposals are the drivers of these effects. The mechanisms of atmospheric pollution effects and ways in which the plan seeks to avoid them are explored in **Chapter 5**.
- 4.2.7 Additionally, likely or uncertain significant effects are determined for Ashdown Forest SPA in relation to disturbance impacts on Annex 1 birds through rising recreational use of the Forest. The cumulative or in combination effects of the District Plan's scale and distribution of residential proposals, and associated population growth, are the drivers of these effects. Disturbance effects and the plan's measures for avoiding such impacts are explored in Chapter 6.

4.3 The Appropriate Assessment Stage

4.3.1 The purpose of the Appropriate Assessment (HRA Stage AA2) is to further analyse likely significant effects identified during the screening stage, as well as those effects which were uncertain or not well understood and taken forward for assessment in accordance with the precautionary principle. The assessment should seek to establish whether or not the plan's effects, either alone or in combination with other plans or projects, will lead to adverse effects on site integrity, in view of the site's conservation objectives (see **Chapter 3**). Site integrity can be described as follows (ODPM, 2005):

The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.

- 4.3.2 The assessment first focuses on the effects generated by the proposed policies of the District Plan and considers ways in which they can be avoided altogether. Where adverse effects cannot be avoided by changes to the plan, mitigation measures are introduced to remove or reduce the effects to the level of non-significance. Any residual (non-significant) effects can then be taken forward for further analysis to establish whether they might be expected to become significant in combination with the effects of other plans or projects.
- 4.3.3 The assessments presented in the following chapters are comprised of the following main sections:
 - Baseline conditions: existing conditions within the site in relation to the impact being assessed.
 - Impact source: proposals within the plan that cause the effect;
 - Impact pathway: the mechanisms through which the proposed action may adversely affect certain qualifying features;

- Offsetting measures within the plan: proposals that aim to avoid and/or reduce the effect;
- Impact assessment: analysis of the plan's effects on conservation objectives; and
- Assumptions and limitations: any limiting factors to the assessment which should be borne in mind when considering the recommendations, such as any distance variables or specific vulnerabilities that need to be taken into account.
- 4.3.4 Each chapter concludes by proposing further recommendations for avoidance and mitigation measures where required, and consideration of residual and in combination effects. The recommendations provide avoidance measures in the first instance, intended to remove the effects, and these are further supported by mitigation measures where necessary to ensure the effects of the plan can successfully be eliminated.



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5 Atmospheric Pollution

5.1 Baseline Conditions

- 5.1.1 Atmospheric pollution is a widespread issue, with background air quality heavily influenced by large point-source emitters including transboundary sources. Local pollutant sources are expected to affect Ashdown Forest, particularly in relation to habitats of the SAC, and especially from road traffic emissions. The Consultation Draft District Plan cannot feasibly influence causes of background pollution such as large point sources but, through its spatial distribution of development and sustainable transport measures, will affect the way in which locally emitted pollutants reach the site.
- 5.1.2 Qualifying habitats most sensitive to air pollution within Ashdown Forest are European dry heaths and North Atlantic wet heaths. The main pollutant effects of interest are acid deposition and eutrophication by nitrogen deposition. The following brief descriptions draw on information presented through the Air Pollution Information System² (APIS).
- 5.1.3 Acid deposition: caused by oxides of nitrogen (NO_X) (or sulphur dioxide) reacting with rain/cloudwater to form nitric (or sulphuric) acid, and is caused primarily by energy generation, as well as road traffic and industrial combustion. Both wet and dry acid deposition have been implicated in the damage and destruction of vegetation (heather, mosses, liverworts and lichens are particularly susceptible to cell membrane damage due to excessive pollutant levels) and in the degradation of soils and watercourses (including acidification and reduced microbial activity).
- 5.1.4 Eutrophication by nitrogen deposition: consists of the input of nitrogen from NO_X (and sometimes ammonia) emissions by deposition, and is caused primarily by road traffic, as well as energy generation, industrial combustion and agricultural practices. Nitrogen deposition can cause direct damage to heather, mosses, liverworts and lichens, as well as other plant species, because of their sensitivity to additional atmospheric nitrogen inputs, whilst deposition can also lead to long term compositional changes in vegetation and reduced diversity. For example a marked decline in heather and an increased dominance of grasses have been observed throughout the Netherlands and also in the East Anglian Brecklands (see for example Bobbink et al (1993) and Pitcairn et al (1991)).
- 5.1.5 Furthermore, while plants are able to detoxify and assimilate low exposure to atmospheric concentrations of NOx, high levels of uptake can lead to detrimental impacts including:
 - Inhibition of pigment biosynthesis, leading to reduced rates of photosynthesis;
 - Water soaking as NO₂ molecules attach to lipids in membranes, causing plasmolysis (removal of water) and eventually necrosis;

²Online at: http://www.apis.ac.uk/index.html [Accessed 25/7/11]

- Inhibition of lipid biosynthesis, leading to reduced rates of regeneration and growth;
- Injury to mitochondria and plastids, essential to internal processing of energy and proteins;
- Decrease in stomatal conductance of air and water vapour; and
- Inhibition of carbon fixation (at least under low light levels).
- 5.1.6 UE Associates (2008) notes that the critical load or level for each of these pollutant classes is already exceeded in parts of Ashdown Forest; **Table 5.1** presents information on background critical load/level exceedances for these key pollutants on qualifying habitat types at a selection of grid references across the Forest, shown on **Figure 5.1**. Cells shaded in red indication an exceedance. Nilsson and Grennfelt (1988) define critical loads and levels as "a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge". Critical loads concern the quantity of pollutants deposited from the air to the ground (for example nitrogen deposition and acid deposition), whilst critical levels concern the gaseous concentration of a pollutant in the air (for example nitrogen oxides).

Table 5.1: Critical load/level for Ashdown Forest SAC compared to actual load/level where load denotes percentage of lowest value of critical range (Source: APIS, data to 2008)

Receptor	Atmospheric N (µgm ⁻³)		N Deposition (kg/ha/yr)		Acid dep (keq/ha/yr)	
	Crit. load	Actual load	Crit. load	Actual load	Crit. load	Actual load
1. Woodland	30	50%	10	302%	0.14	1570%
2. Dry heath	30	50%	10	157%	0.32	481%
3. Wet heath	30	48%	10	162%	0.32	487%

^{1.} Nearest SAC location to East Grinstead and close to A22; woodland habitat (not designated). NGR542021,133634. APIS Habitat: Oak woodland.

5.1.7 The data in Table 5.1 is historical (2008) and provides an indicative assessment as to which areas are approaching the limits of environmental capacity. In all cases, the critical load for nutrient nitrogen and acid deposition is exceeded. This suggests that additional sources of these pollutants generated as a result of proposals in the District Plan should be avoided or mitigated to prevent additional adverse effects on ecological integrity, while it would be beneficial to explore opportunities to improve baseline conditions.

5.2 Impact Source

5.2.1 The screening exercise identified the residential, employment and retail elements of policies DP1, DP2, DP3, DP5 and DP6 as the drivers of increased air pollution, principally through the generation of associated road traffic.

^{2.} Dry heath habitat location close to A22 at Ashdown Llama Farm. NGR542115,131399. APIS Habitat: Lowland heathland.

 $^{3. \} Wet heath habitat location close to A22 at Millbrook. \ NGR544045,128936. \ APIS \ Habitat: \ Lowland \ heathland.$

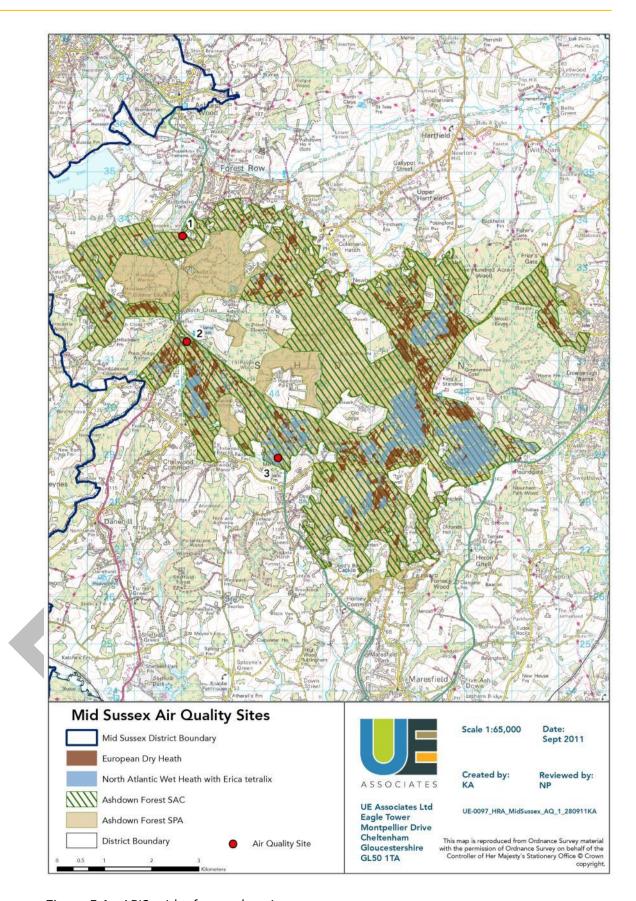


Figure 5.1: APIS grid reference locations

5.3 Impact Pathway

- 5.3.1 The Design Manual for Roads and Bridges (DMRB; Highways Agency, 2007) provides guidance on assessment of the impact that road projects may have on local air quality. Specific provision is made in relation to sites designated under the Habitats Directive. In this instance the assessment is in relation to existing, as opposed to new roads, however the guidance clarifies that 'where appropriate, the advice may be applied to existing roads'. In accordance with this guidance, and with agreement from Natural England (minutes of meeting between Natural England, Mid Sussex District Council and Wealden District Council, 16 September 2010), the HRA examines whether there is a likely significant effect using the DMRB guidance.
- 5.3.2 DMRB provides a scoping assessment for local air quality and initially requires the identification of roads which are likely to be affected by the proposals. The criteria for defining an affected road are:
 - ▶ Road alignment will change by 5 metres or more; or
 - Daily traffic flows will change by 1,000 annual average daily traffic (AADT) or more; or
 - ▶ Heavy Duty Vehicle (HDV) flows will change by 200 AADT or more; or
 - Daily average speed will change by 10km/hr or more; or
 - Peak hour speed will change by 20km/hr or more.
- 5.3.3 The scoping assessment then requires that nature conservation sites (e.g. SACs) within 200m of the road and their characteristics be identified. Beyond 200m effects from this source diminish to the equivalent of background levels (Laxen & Wilson (2002), DfT (2005)).
- 5.3.4 The guidance clarifies that if none of the roads in the network meet the traffic/alignment criteria (that is, they are not affected roads) or there are no relevant designated sites near the affected roads, then the impact of the scheme can be considered neutral in terms of local air quality and no further work is needed. Major roads passing through the Forest along which residents from Mid Sussex could be likely to travel are: A22 and A275, while the B2188, B2026 and other minor roads may also be of concern; see Figure 5.2.
- 5.3.5 Mid Sussex District Council is working with West Sussex County Council to estimate the increase in AADT flow along key roads within 200m of Ashdown Forest as result of proposals within the Consultation Draft District Plan. If growth in traffic along relevant roads is predicted to breach the 1,000 AADT benchmark, then a calculation of the plan's process contribution to atmospheric pollution may need to be calculated. A similar approach is being taken by Wealden District Council in assessing the potential impacts of its Core Strategy, with the support of Natural England.
- 5.3.6 Environment Agency H1 guidance (Environment Agency, 2010) explains that, regardless of the baseline environmental conditions, a process' contribution to atmospheric pollution (i.e. the District Plan's contribution) can be considered insignificant if: the long-term (annual mean) process contribution is <1% of the long-term environmental standard (critical load/level). This criterion is also used in guidance issued by the Agency and JNCC on applying the Habitats Regulations in relation to air quality impacts (Environment Agency, 2005) which states that:

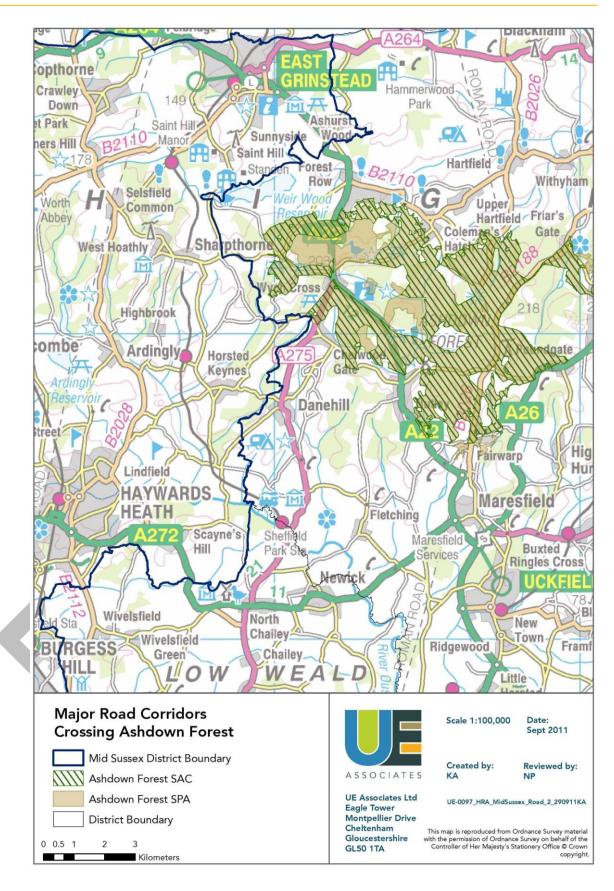


Figure 5.2: Road network crossing Ashdown Forest

Where the concentration within the emission footprint in any part of the European site is less than 1% of the relevant benchmark, the emission is unlikely to have a significant effect irrespective of the background levels.

5.4 Offsetting Measures Provided within the Plan

- 5.4.1 The Consultation Draft District Plan contains measures to promote sustainable transport over the plan period, including measures relating to existing development, and additional actions to assess and manage air pollution. These are intended to improve the overall sustainability of the district as well as reduce the traffic emissions from proposed development, including along roads passing through or close to Ashdown Forest. The measures are summarised in Box 3.
- 5.4.2 Until more is known about the likely growth in traffic on roads within or close to Ashdown Forest it is not possible to assess the effectiveness of these policy proposals in avoiding adverse effects on the SAC/SPA.

Box 3: Summary of District Plan measures relating to atmospheric pollution

DP17 Transport: To have a policy that sets out that:

- development must support the objectives of the West Sussex Local Transport Plan , which are:
 - a high quality transport network that promotes a competitive and prosperous economy
 - a resilient transport network that complements the built and natural environment whilst reducing carbon emissions over time
 - access to services, employment and housing
 - a transport network that feels, and is, safer and healthier to use
- To meet these objectives at a local level, development proposals should:
 - be sustainably located to minimise the need for travel;
 - facilitate and promote the use of alternative modes of transport to the private car, such as walking, cycling and public transport;
 - not cause an unacceptable impact in terms of road safety and increased traffic congestion
 - be designed to adoptable standards, or other standards as agreed by the Local Planning Authority, as regards road widths and size of car parking spaces / garages
 - provide adequate car parking for the proposed development.

Car parking provision in new developments will be assessed against Mid Sussex Parking Standards unless there is local evidence that indicates that these standards should be varied.

Where practical developments should be located and designed to incorporate facilities for charging plug-in and other ultra-low emission vehicles.

All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment.

DP24 Noise, air and light pollution:

To have a policy that protects the environment and the quality of people's life from unacceptable levels of [noise, light and] air pollution by:

- Only permitting development which does not cause unacceptable levels of air pollution;
- Only permitting development on land adjacent to an existing use which generates air pollution

- where this can be mitigated to reduce exposure to poor air quality and/or would not cause any adverse effects on the proposed development;
- Assessing the potential impacts of new development and increased traffic levels on internationally designated conservation sites and adopting necessary avoidance or mitigation measures to address these impacts (see policy DP12 Ashdown Forest Special Area of Conservation and Special Protection Area');
- Ensure that development proposals (where appropriate) are consistent with Air Quality Management Plans.

DP12 Ashdown Forest SAC/SPA:

To have a policy which outlines the intention to develop a strategic approach to protect the Ashdown Forest Special Area of Conservation and Special Protection Area from recreational pressure and air pollution through the use of:

- Buffer zones that:
 - Prevent development within 400 metres of the Ashdown Forest
 - Allow development within 7 kilometres of the Ashdown Forest provided mitigation methods are employed (for instance Suitable Alternative Natural Green Spaces)

An Access Management Strategy that reduces the impact of visitors on special interest features of the designated site.

5.5 Impact Assessment

- 5.5.1 This section considers the available data in relation to the conservation objectives of the site.
 - Objective 4: The geographical distribution of the habitats and their overall area within the sites should be maintained or increased
- 5.5.2 It is not possible to assess effects on distribution or extent of habitats at the present time.
 - Objective 5: The mix of species (their species structure) and the ecological interrelationships between these and other environmental and management factors (ecological function) which are needed for the long-term maintenance of the habitats should be likely to continue to exist
- 5.5.3 It is not possible to assess effects on species structure or ecological function at present.
 - Objective 6: The conservation status of the habitats' typical species are maintained in terms of their population size, range and habitat extent
- 5.5.4 It is not possible to assess effects on the population, range or extent of typical species at the present time.

5.6 Assumptions and Limitations

5.6.1 This part of the Appropriate Assessment cannot be concluded until further studies to establish the likely growth in traffic along roads within 200m of Ashdown Forest is complete. The work is underway and is due to complete in time to inform the Submission District Plan.

5.7 Conclusions and Recommendations

- 5.7.1 Natural England refers to a best practice guide for reducing contributions to atmospheric pollution from road traffic (Transport & Travel Research, 2005), many principles from which could be employed as part of the development plan. Suggested measures are set out under four themes as follows, and listed in **Table 5.2**:
 - ▶ Behavioural measures and modal shift reducing the amount of traffic overall;
 - ▶ Traffic management modifying traffic behaviour to control where emissions are generated;
 - Emissions reduction at source reducing the emissions level per vehicle; and
 - ▶ Roadside barriers reducing the impact of emissions.
- 5.7.2 The District Plan already states clear intentions (in **DP17**) to: minimise the need to travel by promoting sustainably located development; encourage modal shift and use of cleaner technologies; and avoid unacceptable traffic congestion. However, further measures should also be promoted, particularly requirements to: prepare travel plans as part of development proposals; consider car free developments; deviate from parking standards in areas where this could realistically influence the level of car use; and use absorbent materials in construction.
- 5.7.3 The other types of measures described in Table 5.2 could be explored through development management policies and decision making, and in cooperation with local transport planners.

Table 5.2: Mitigation measures for reducing or removing atmospheric pollution effects from road traffic (Source: Transport & Travel Research, 2005)

Mitigation measures for atmospheric pollution emissions from road traffic Behavioural measures and modal shift Minimising the need to travel Individualised marketing/information School travel plans Car free developments Employment travel plans Promoting sustainable modes Traffic management Environmental traffic management / diversion Parking availability information of flows Environmental and low emission zones around Optimising speed limits sensitive sites Control of access Parking management / reduction Emissions reduction at source Promotion of cleaner/electric vehicles (fleet) Driver training and personal) Ultra-low sulphur diesel for construction Emissions testing and anti-idling regulations vehicles and plant Roadside barriers Barriers and planting to absorb/disperse NOx-absorbent paving pollutants

6 Disturbance

6.1 Baseline Conditions

- 6.1.1 Ashdown Forest has been a popular place for recreation and natural resources since the Common Lands Regulation (Ashdown Forest) Provisional Order Confirmation Act of 1885, and before. It is now the largest free public access open space in the South East. As such it is a vital resource that contributes exceptional value to the quality of life of residents in East and West Sussex and beyond.
- 6.1.2 However, it is also home to approximately 2.1% and 1.1% of the UK's population of breeding Dartford warbler and nightjar, respectively. Woodlark is also present in qualifying numbers but is not listed as a qualifying feature of the SPA. Disturbance is expected to affect the SPA more than the SAC. The findings of a visitor survey in 2008 found that Ashdown Forest attracts upwards of 1.3 million visitors each year (UE Associates and University of Brighton, 2009). It also found that 60% of people interviewed during the survey visited for the primary purpose of walking the dog, while a further 30% visited to go for a walk. Many visitors to the Forest originate from the surrounding area, and increases in the number of homes around the Forest may compound the effects of disturbance from recreation of these birds of European importance.
- 6.1.3 Murison et al. (2007) note that animals often react to human disturbance as a form of predation risk (see also Frid & Dill, 2002). Such a response can include elevated heart rate, heightened defensive behaviour, including evasive measures with associated energy expenditure, and the avoidance of high risk areas (Murison et al. (2007), Liley & Sutherland (2007)). It is possible, therefore, that high levels of human activity in important nature conservation areas changes the behaviour of animals to such a degree that conservation priorities become compromised. This may be elicited through, for example, reduced breeding success, increased predation or exposure of nests, eggs or young to trampling and the elements (Liley & Sutherland, 2007). Meanwhile, it has been observed that the removal of human disturbance effects could result in an increase of between 13% and 48% in the breeding population of woodlark over 16 heathland sites (Mallord (2005), quoted in Underhill-Day & Liley (2007)).
- 6.1.4 Liley and Clarke (2003), following field studies into the population density of nightjar on 36 patches of heathland in Dorset, demonstrated that patches surrounded by higher levels of development supported smaller populations of nightjar. The types of effects associated with urbanisation that they identified as relevant in this respect included human disturbance, light pollution, predation from natural predators and domestic pets (as well as corvids, foxes *Vulpes vulpes*, and hedgehogs *Erinaceus europaeus*), and habitat change. In the face of these challenges, conservation officers and managers of open access land need to consider a number of responses to balance the effects of human disturbance and urbanisation with requirements for access to recreation.

- 6.1.5 These might include both site-level responses, such as restricted access at certain times of year or changes to planting regimes, as well as strategic alternatives, such as the provision of substitute recreational facilities in less sensitive areas (Underhill-Day & Liley, 2007). Langston et al. (2007) suggest that responsible access '... necessitates the provision of information for visitors to heathland to help them understand their... responsibilities and... change their behaviour'.
- 6.1.6 Ashdown Forest is qualitatively different to the Dorset heathlands, which are made up of a series of heathland fragments disconnected from one another, whereas Ashdown Forest is a single large composite site where the patches of heathland are interconnected by semi-natural grassland and woodland.
- 6.1.7 An analysis of visitor access patterns, therefore, is an essential first stage in developing an understanding of how to react to the challenges presented by increasing levels of human disturbance that might be associated with increased development. As Underhill-Day and Liley (2007) put it, the range of site-level and strategic management responses available need to be considered in light of 'a range of questions on where heathland users come from, why they come to the heaths, where they go and what they do once there.'
- 6.1.8 Several studies of the interrelationship between recreational access and heathland biodiversity have been undertaken in recent years (see for example Clarke *et al.* (2006), Liley (1999), Liley & Clarke (2002, 2003), Liley *et al.* (2006), Murison (2002) and Murison *et al.* (2007)). The focus of most of these studies has been on the Dorset Heathlands, and also Thames Basin Heaths. The following sections introduce some of the pertinent issues, which may prove relevant to a study of Ashdown Forest.

Mechanisms and measures of disturbance

- 6.1.9 In a study into the relationship between habitat type and disturbance effects on the breeding Dartford warbler, Murison et al. (2007) noted the following as important measures of disturbance. First, they noted that indirect disturbance was associated with factors such as the distance from the centre of the heathland patch (or nest) to the nearest road, path, building or car park. Second, the proximity of a nest territory to the nearest access point showed a strong, direct negative relationship with the timing of a first brood. Third, disturbance appeared to be associated with increased stress levels, with birds exhibiting an extended period of agitation while searching for cover, leading to increased energy expenditure.
- 6.1.10 They suggest that the mechanisms by which disturbance affects the Dartford warbler's breeding success are associated with its particular susceptibility to disturbance during nest-building activities, with birds often abandoning their work and materials. The effects of this are threefold. The timing of the first brood was delayed for long enough (up to six weeks) to prevent multiple broods in one season. Also, the fledgling success of a first brood delayed until June was limited by the decreased availability of invertebrate prey. And similarly, that continued disturbance events reduced the foraging effectiveness of the birds, and their ability to feed their young, by keeping the adults away from the nest for longer than normal.

- 6.1.11 Analysing the results of their study, Murison et al. (2007) found that breeding pairs with territories in areas experiencing as many as 13 to 16 disturbance events each hour of every day, delayed breeding for sufficiently long enough to prevent multiple broods in one season. Importantly, they also found a significant correlation between the reproductive success of Dartford warbler and the proportion of different gorse types present in the heathland patch. They discovered a strong positive relationship with European gorse Ulex europaeus, where heathland patches containing more of this type produced more successful broods. While the significance of disturbance events in delaying breeding among Dartford warbler pairs nesting in heather-dominated territories was high, often leading to reduced breeding success, the correlation was weaker in territories dominated by Western gorse U. gallii.
- 6.1.12 During their surveys, dogs were observed ranging as far as 45m into heather dominated areas, but never strayed from the path in areas with vegetation dominated by gorse. This could provide a useful tool to heathland managers, whereby tactical positioning of gorse varieties, particularly alongside paths and bridleways, may help to reduce the incidence of disturbance. This may, of course, conflict with other conservation priorities especially in areas where the heathland habitat itself is of international importance, such as Ashdown Forest.

Vulnerabilities of ground-nesting birds

- 6.1.13 As already mentioned, Liley and Clarke (2003) found that nightjar populations appeared particularly vulnerable to the effects of urbanisation, including human disturbance, light pollution, and predation by natural predators, pets and urban scavengers. In a study investigating the relationship between walkers with dogs and the success of breeding nightjar, Langston et al. (2007) observed that the flushing of birds from the nest by a disturbance event during daylight hours led to predation by diurnal predators, particularly of eggs.
- 6.1.14 Moreover, birds tend to flush more readily in response to dogs than to humans, and take longer to return to the nest. Langston et al. (2007) noted that disturbance effects on nightjar were more marked when breeding conditions were less favourable due to incidental factors such as weather conditions. Birds flushing the nest as a result of disturbance events during harsh or wet weather tended to bear smaller, less successful broods. Overall, they found a significant relationship between nest failure and disturbance, with failure being more likely in nests with higher total footpath length within 50, 100 and 500m of the nest clearing.

Summary

- 6.1.15 Impacts to ground and near-ground nesting breeding birds can be described as follows:
 - Increased nest predation by natural predators when adults are flushed from the nest or deterred from returning to it by the presence of people or dogs;
 - ▶ Chicks or eggs dying of exposure because adult birds are kept away from the nest;
 - Accidental trampling of eggs by people, given that (nightjar and woodlark) nests are on the ground and may be close to paths;
 - Predation of chicks or eggs by domestic dogs; and
 - Increasing stress levels in adult birds in response to perceived predation risk.

Practical measures used elsewhere to manage impacts

- 6.1.16 Policy precedent on the combined issues of development, increasing visitor pressure and internationally important nature conservation areas can be derived from the consideration of the Thames Basin Heaths SPA within the South East Plan (RSS). Approximately 40km to the north west at their easternmost extent, the Thames Basin Heaths share some similarities with Ashdown Forest, and form part of a series of fragmented lowland heathland sites supporting internationally important populations of ground and near-ground nesting birds, functioning at a landscape ecology scale across Berkshire, Surrey, Hampshire and Sussex.
- 6.1.17 RSS policy NRM6³ requires that a minimum of 8ha of Suitable Alternative Natural Greenspace (SANG) should be provided for every 1,000 net increase in population as a result of new residential development within a 5km zone of influence around the Thames Basin Heaths SPA, to offset the impact of increasing visitor pressure. This was based on a simple arithmetical calculation in which it was estimated that there would be an increase in the population within the vicinity of the Thames Basin Heaths SPA of 3,419 people per year over the plan period. From visitor studies it was calculated that each person makes 4.58 visits to the SPA per year and a hectare of the Thames Basin Heaths SPA absorbs 638 visits per year.
- 6.1.18 Using these figures it was possible to calculate that 24.5ha/year of additional open space would be required to absorb this additional population which equates to 490ha to be provided over the 20 year plan period. This gives a mitigation standard of 7.16ha/1,000 head of population. The figure was rounded up to the 8ha per 1,000 SANG standard which was subsequently widely adopted across the Thames Basin. The 5km zone of influence aims to 'capture' around three quarters of all visitors to the heaths, including 70% of drivers and all pedestrians.
- 6.1.19 SANGs are sites that cater for the recreational needs of communities in order to reduce the likelihood of increasing visitor pressure and disturbance on important nature conservation areas, and should be supported by access management measures within the SPA itself. They are characterised by a number of factors, as defined by Natural England (draft 2008):
 - For any SANG larger than 4ha there must be adequate parking for visitors, unless it is intended for local use, i.e. within easy walking distance (400m) of the developments linked to it. The amount of car parking space should be determined by the anticipated use of the site and reflect the visitor catchment of both the SANG and the SPA.
 - It should be possible to complete a circular walk of 2.3-2.5km around the SANG.
 - Car parks must be easily and safely accessible by car and should be clearly sign posted.
 - ▶ The accessibility of the site must include access points appropriate for the particular visitor use the SANG is intended to cater for.
 - ▶ The SANG must have a safe route of access on foot from the nearest car park and/or footpath/s.

³ The RSS is likely to be revoked in due course, but evidence gathered in relation to Thames Basin Heaths SPA is still relevant.

- All SANGs with car parks must have a circular walk which starts and finishes at the car park.
- ▶ SANGs must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes.
- Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel.
- ▶ SANGs must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually-sensitive way-markers and some benches are acceptable.
- All SANGs larger than 12ha must aim to provide a variety of habitats for users to experience. Access within the SANG must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead.
- > SANGs must be free from unpleasant intrusions (e.g. sewage treatment works smells).
- SANGs should be clearly sign-posted or advertised in some way.
- SANGs should have leaflets and/or websites advertising their location to potential users. It would be desirable for leaflets to be distributed to new homes in the area and be made available at entrance points and car parks.
- It would be desirable for an owner to be able to take dogs from the car park to the SANG safely off the lead.
- Where possible it is desirable to choose sites with a gently undulating topography for SANG.
- It is desirable for access points to have signage outlining the layout of the SANG and the routes available to visitors.
- It is desirable that SANGs provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water on part, but not the majority of sites is desirable.
- Where possible it is desirable to have a focal point such as a view point or monument within the SANG.

6.2 Impact Source

6.2.1 The screening exercise identified the residential elements of policy DP3 as the driver of increased disturbance through growing recreational pressure.

6.3 Impact Pathway

- 6.3.1 The survey undertaken by UE Associates and the University of Brighton (2009) during summer and autumn 2008 investigates visitor access patterns at Ashdown Forest in detail. Interviews were carried out at 20 different access points across the Forest and respondents were asked about where they came from that day. By establishing patterns of travel by distance and mode of transport it is possible to estimate additional visitor pressure as a result of new development.
- 6.3.2 The data gathered during the field survey were further analysed on behalf of Natural England (Clarke et al, 2010) in order to extrapolate the findings to derive estimates of visitor numbers at un-surveyed access points, and explore the relationship between visitor intensity and bird territories within the SPA. Their analysis concluded that:

The research undertaken indicates that the current level of visitor pressure is not affecting the distribution of nightjar, woodlark or Dartford warbler within Ashdown Forest SPA. Based upon the analysis undertaken, the birds do not appear to be avoiding areas of greater recreational pressure. Visitor densities at the site appear to be less than on the Thames Basin Heaths as a whole and slightly higher than the whole of the Dorset Heaths... In considering the duty set out within Article 6(2) [of the Habitats Directive] it is concluded that the current level of visitor pressure in Ashdown Forest is not displacing the birds from otherwise suitable habitat, even within areas that the analysis of the visitor data shows to hold greater concentrations of visitors.

Recreational disturbance could still however be having an impact on the Annex I bird species at Ashdown Forest. For example this study has not looked at breeding success. Also it may be that the density of birds is so low (due to other, currently unknown factors) that there is little competition for space and therefore no impacts of disturbance. While the results of the analysis presented in the report are potentially encouraging, in the absence of data on breeding success, and without understanding why bird densities are low, it currently cannot be concluded on the basis of scientific evidence that the ecological integrity of nightjar and Dartford warbler populations is not being adversely affected by a combination of existing pressure and/or habitat management. (Clarke et al, 2010, p.29)

- 6.3.3 In this context, and with bird numbers already being lower than might be expected given the available area of habitat, unmanaged increases in visiting activity could lead to further adverse effects on site integrity.
- 6.3.4 Clarke et al (2010) found that, across all Forest access points, the total number of people predicted to visit over 16 daylight hours in September was 5,198, or 325 per hour. Spreading these visitors out across the Forest's 2,388 visitable hectares, this equates to an average of 2.17 visitors per hectare over 16 daylight hours, which compares to 1.8 at Dorset Heathlands and 3.7 at Thames Basin Heaths.

6.3.5 In addition they developed a statistical model of visiting rates of pedestrian and car visitors, taking into account observed visitor rates from the 2008 field survey, the residential density of nearby areas, and car park size. The model can be used to predict the number of additional visitors to each access point, and therefore the whole Forest, arising from the proposed development of a specific number of dwellings in defined areas. A selection of settlements around Ashdown Forest were chosen to illustrate the model, and for each location the additional number of visits to Ashdown Forest arising from 100 extra dwellings is predicted; see **Table 6.1**.

Table 6.1: Predicted additional visitor rates to Ashdown Forest SPA as a result of new development at a selection of locations (Source: Clarke et al, 2010)

Settlement	Distance from SPA *	Number of added visits per 100 dwellings **		
East Grinstead	5.10	4.1		
Crawley	12.98	0.3		
Haywards Heath	9.48	1.2		
Uckfield	4.99	3.9		
Crowborough	1.50	12.2		
Royal Tunbridge Wells	10.25	0.8		

 $^{^{\}star}$ Shortest distance from settlement boundary to SPA boundary – except Crowborough

- 6.3.6 The model provides a means to directly compare the consequences of development (in terms of increased SPA visitor numbers) at a potential development location. Accordingly, 100 new dwellings at Crowborough, in close proximity to parts of the SPA, is predicted to lead to 12.2 extra visitors per 16 hours, in contrast to 5.1 extra visitors for an equivalent number of dwellings at East Grinstead, or 1.2 extra visitors for the same number at Haywards Heath, further away from the Forest (Clarke et al, 2010). The analysis shows that, although the existing numbers of visitors to Ashdown Forest may not be negatively affecting populations of Dartford warbler and nightjar, the visitors associated with new strategic housing allocations may do, especially in combination with the effects of other plans and projects. Generally speaking, the closer an individual dwelling or residential development is to the Forest, the more likely its inhabitants are to visit on a regular basis.
- 6.3.7 Clarke et al (2010) found that the majority of visitors travelling by car (>85%) originated from within a 15km distance from the Forest (see **Figure 6.1**). In order to establish a zone of influence around Ashdown Forest within which SANG should be provided in a similar way to the Thames Basin, the distances between post code origin and SAC/SPA from field survey data were recalculated for all modes of transport; see **Figure 6.2**. The recalculations excluded invalid post codes, stem post codes, records that gave no response and those within the Forest (n=286 out of 639 interviews conducted).

^{**} Visits per 16 daylight hours in September

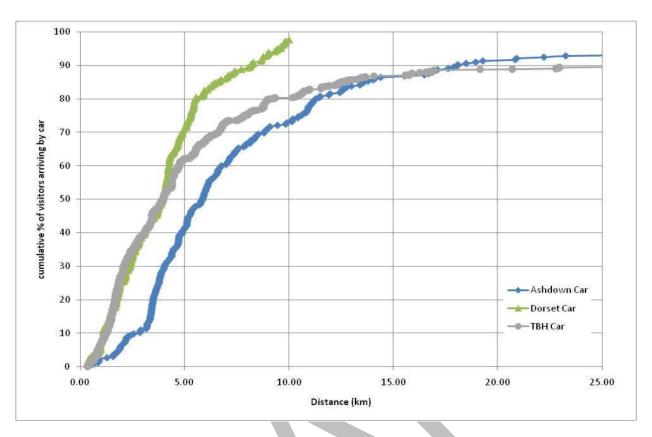


Figure 6.1: Cumulative percentage curve showing the proportion of car visitors to Ashdown Forest travelling from within a range of distances, in comparison to visitors to Thames Basin and Dorset Heaths (Source: Clarke et al, 2010)

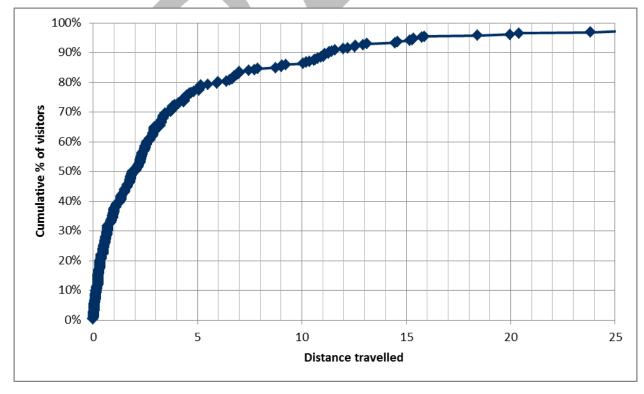


Figure 6.2: Distances travelled to Ashdown Forest in 2008 by all respondents who gave a full post code (n=286)

- 6.3.8 Following consultations with Natural England, a 7km zone of influence around Ashdown Forest was established. This is the area within which the majority (83%) of regular visitors to the Forest originate, and therefore where measures targeted at reducing pressure on the Forest would be most effective. See **Figure 6.3**. Natural England has stated that 8ha of SANG should be provided for every 1,000 increase in population (or part thereof) within this zone, in line with the Thames Basin Heaths approach to avoidance and mitigation.
- 6.3.9 SANGs should be complimented by developer-funded changes to access management within Ashdown Forest to reduce the onsite impacts of the remaining people who will inevitably continue to visit the site.
- 6.3.10 The Consultation Draft District Plan's housing strategy states that 10,600 dwellings should be developed over the 20 year plan period, or around 530 dwellings per year. Of these, around 80% will be delivered through strategic development sites at Burgess Hill (outside the zone of influence) and existing commitments, while the remainder (approximately between 2,300 2,800 dwellings) will be distributed elsewhere across the district. The precise number of dwellings and resulting population growth within Ashdown Forest's zone of influence are unknown at this stage.
- 6.3.11 However, approximately 28.8% of the district falls within the zone of influence. In order to give an estimation of the possible amount of SANG that could be required to support residential development, a theoretical scenario is explored. This scenario takes the mid-point of the range of remaining homes to be distributed (i.e. the mid-point between 2,300 and 2,800 = 2,550) and estimates the amount of SANG that would be required to support residential development if these homes were uniformly distributed across the district, meaning that 28.8% of them would fall within the zone of influence. The resulting population can be calculated using the average dwelling occupancy rate for the district of 2.32 people per dwelling. This is shown in **Table 6.2**.
- 6.3.12 The actual level of population growth within the zone of influence will depend on the amount of residential development likely to come forward through Neighbourhood Plans, which may ultimately be higher or lower than 1,700 people.

Table 6.2: SANG estimate from Mid Sussex population scenario within 7km of the Forest

Theoretical dwellings scenario			Estimated SANG (8ha/1,000 pop.)
2,550	734	1,703	13.6

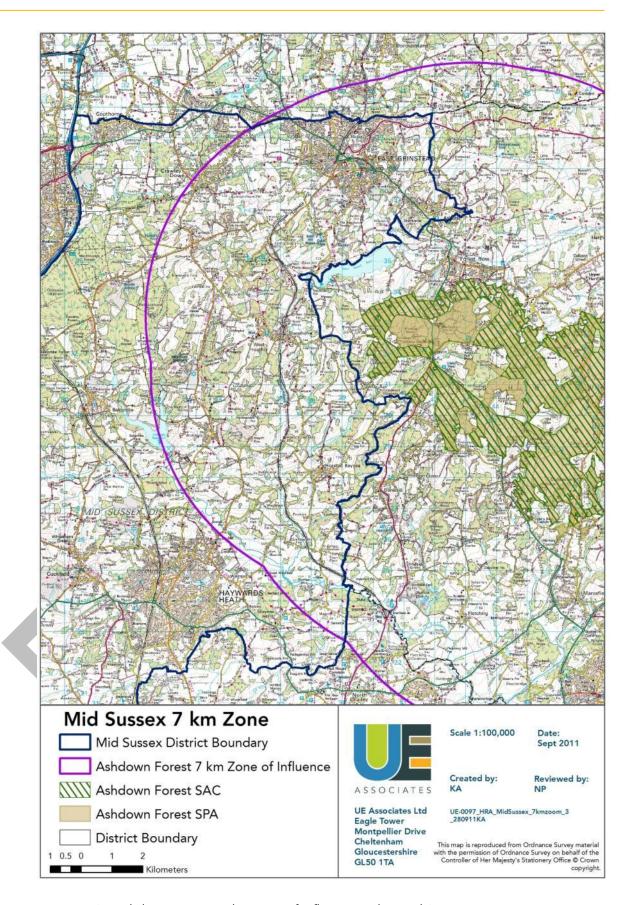


Figure 6.3: Ashdown Forest's 7km zone of influence within Mid Sussex

6.4 Offsetting Measures Provided within the Plan

6.4.1 Within the zone of influence the Council plans to implement an avoidance and mitigation strategy (see **Box 4**).

Box 4: Summary of District Plan measures relating to disturbance

DP12 Ashdown Forest SAC/SPA: To have a policy which outlines the intention to develop a strategic approach to protect the Ashdown Forest Special Area of Conservation and Special Protection Area from recreational pressure and air pollution through the use of:

- Buffer zones that:
 - Prevent development within 400 metres of the Ashdown Forest
 - Allow development within 7 kilometres of the Ashdown Forest provided mitigation methods are employed (for instance Suitable Alternative Natural Green Spaces)
- An Access Management Strategy that reduces the impact of visitors on special interest features
 of the designated site.

6.5 Impact Assessment

6.5.1 This section considers the available data in relation to the conservation objectives of the site.

Objective 1: Maintain the population of each of the Annex 1 bird species as a viable component of their natural habitats on a long-term basis

- 6.5.2 The District Plan embraces current practice on providing for the recreational needs of new developments without placing additional pressure on internationally important nature conservation sites. However, at the current stage the plan is not specific about the level of residential development likely to come forward within Ashdown Forest's zone of influence, nor the quantity, quality, location or delivery mechanism for providing SANGs. It cannot currently be concluded, therefore, that Dartford warbler and nightjar (and woodlark) populations will not decrease as a result of increasing recreational pressure and disturbance.
- 6.5.3 However, once the spatial strategy for residential development is finalised, and if it can be demonstrated that sufficient good quality potential SANGs exist to provide an alternative recreational resource for the number of dwellings proposed within the zone of influence, it may be possible to conclude that adverse effects are avoidable. Further work is currently being carried out to explore the potential for providing SANGs within the 7km zone of influence.
- 6.5.4 The District Plan refers to the need for an Access Management Strategy to be implemented within Ashdown Forest to reduce visitor impacts to Annex 1 birds. It is considered appropriate that the plan should not contain substantial detail on the Access Management Strategy as this should be prepared in association with the Conservators of Ashdown Forest and other relevant planning authorities.

Objective 2: Maintain the range (geographic extent) of the population of each of the Annex 1 bird species for the foreseeable future

6.5.5 It cannot currently be concluded that the ranges of Dartford warbler and nightjar (and woodlark) will not decrease within the site as a result of the District Plan.

Objective 3: Maintain sufficient area of suitable habitat to maintain the populations of each of the Annex 1 bird species on a long term basis

6.5.6 It cannot currently be concluded that the area of suitable habitat for Dartford warbler and nightjar (and woodlark) will not decrease within the site as a result of the District Plan.

6.6 Assumptions and Limitations

6.6.1 The HRA was prepared at an early stage of plan development. Work is continuing to explore arrangements for the provision of SANGs and access management in relation to Ashdown Forest in cooperation with Natural England, the Conservators and other relevant planning authorities.

6.7 Conclusions and Recommendations

6.7.1 At the present stage it is not yet known precisely how many dwellings will come forward within the zone of influence, and therefore the amount of SANG that would be required to offset their adverse effects. However, it is possible to begin planning for the delivery of SANG, as an important aspect of the district's infrastructure requirements, as well as the Access Management Strategy to ensure that any residual impacts are dealt with effectively.

Options for providing Suitable Alternative Natural Greenspace

- 6.7.2 Within Mid Sussex, the options for creating SANG could include:
 - Existing open space of SANG quality with no existing or limited public access, which for the purposes of mitigation could be made fully accessible to the public;
 - Existing open space which is already accessible but which could be changed in character so that it is more attractive to the specific group of visitors who might otherwise visit the SPA; and
 - Land in other uses which could be converted to SANG.
- 6.7.3 Each potential site will need to be assessed for suitability using Natural England's (draft 2008) design guidance criteria, as listed at the end of section 6.1. Additionally, visitor surveys will be required to establish the existing use of the chosen site(s) so that this can be discounted from its capacity to absorb new visits.

6.7.4 In order to facilitate the delivery of SANG, a tariff will need to be agreed through which developer contributions can be collected within the 7km zone of influence. The tariff for SANG within Mid Sussex will firstly be determined by the preferred option for delivering SANG. The evidence base for establishing and justifying the tariff needs to be robust and informed by (i) estimations of the likely increase in population within the zone of influence, (ii) a detailed and costed programme of works to establish the SANG, and (iii) costs for management and maintenance of the site as SANG in perpetuity (i.e. at least 80 years).

Developing a tariff for SANG

- 6.7.5 In order to establish a SANG delivery tariff to be charged to residential development within the zone of influence, the following work needs to be undertaken:
 - Agree the preferred site(s) for delivering SANG;
 - Set out the occupancy rate for 1, 2, 3 and 4+ bedroom dwellings (or rate per square metre of residential floor space);
 - Develop and cost a SANG delivery plan for the agreed site(s);
 - Develop and cost a management plan for the proposed SANG(s), for a period of at least 80 years;
 - Using the above, calculate the total costs for delivering the SANG(s);
 - Agree a likely number of dwellings that will be delivered within the 7km zone;
 - Use the number of dwellings to calculate the number of additional people generated;
 - Use the number of dwellings to calculate the tariff rate per person. This will use the total costs calculated above, divided by the total number of people generated; and
 - Apply the per person cost to the average dwelling occupancy level per dwelling type.
- 6.7.6 A worked example is outlined in **Table 6.3** for a theoretical site of approximately 25ha in size, and needing some habitat management works for conversion to SANG, but not requiring land purchase.

Table 6.3: Worked example for calculating a SANG tariff

Factor	Calculation
Estimated cost for setting out SANG, plus management & maintenance	£4.2M *
Estimated number of dwellings in 7km zone	1,200 dwellings
Calculate number of people from new development	1,200 x 2.3 = 2,760
Calculate contribution per person (£4.2M/2,760)	£1,521 per person
Apply per person rate per dwelling type (e.g. 1 bed flat has 1.3 people)	£1,978 per 1 bed house

^{*} N.B. If the option for securing a SANG requires a payment to be made to a landowner to secure the land, this payment would need to be factored into the tariff calculation.

Options for establishing an Access Management and Monitoring Strategy

- 6.7.7 The approach to developing options for strategic access management and monitoring is well established in the Thames Basin. For each of the SPAs, a plan has been developed which sets out the access management works required on the SPA to mitigate the effect of development, along with a programme for monitoring the impact of visitors on the SPA. Each plan has been written by site managers and approved by Natural England. These plans are also in perpetuity. The plans produced have been priced and the cost is used to calculate a tariff for developer contributions.
- 6.7.8 It is recommended that a similar approach is adopted for Ashdown Forest. In order to take this forward, an access management strategy and associated programme of works will need to be set out for the site. This should be led by the Conservators of Ashdown Forest, in association with Mid Sussex District Council, Natural England and Wealden District Council. The strategy should include a programme of monitoring to check the effectiveness of measures. Both the access works and the monitoring will need to be detailed and have costs associated with them. These costs can then be used to determine a tariff which would be payable from all new residential development within the 7km zone of influence.
- 6.7.9 In the Thames Basin, the tariff approach varies; some authorities charge a set tariff irrespective of dwelling size, whilst others use a ratchet tariff based on dwelling size or number of bedrooms (as applied with the approach to SANG). From assessing these different approaches, it seems logical that the access management and monitoring tariff should be approached in the same way as the SANG tariff, i.e. an increase in the tariff in relation to dwelling size.

Issues to consider in developing an Access Management Strategy

6.7.10 Consultations with the Conservators of Ashdown Forest have revealed a number of issues at which onsite access management measures should be targeted. The Conservators have also provided a preliminary list of measures which could be implemented, and supporting monitoring initiatives. These are listed in **Table 6.4** and should be further explored through the development of the Access Management Strategy.

Developing a tariff for Access Management and Monitoring

- 6.7.11 The methodology for calculating a tariff for access management and monitoring measures follows the same principles as for SANG. The following work needs to be undertaken:
 - Establish a programme of costed access management works for Ashdown Forest;
 - Establish and cost a programme of monitoring for Ashdown Forest; and
 - Take the total cost of this work and calculate the tariff payable (see example above).

Table 6.4: Considerations for access management within Ashdown Forest

Onsite issues which access management could help address

- Vandalism including fire, fly-tipping, off-roading
- Enrichment and pollution plus introduction of alien species e.g. Crocosmia dumped household garden waste
- Public hostility opposition to site management
- Fragmentation within the heath due to new footpaths and wider tracks
- Fragmentation between heathland blocks increased traffic and wider roads
- Enrichment due to dog waste
- Disturbance from visitors and their dogs
- Trampling

Possible access management measures to explore

- Ranger-led, on-Forest campaigns, including weekend volunteers, to encourage/enforce a dogson-leads policy in grazed areas
- Employ additional (seasonal?) Rangers to enforce laws and byelaws regarding dog behaviour
- Dog faeces collection bins in car parks
- Additional education in car parks to explain the ecological benefit of keeping dogs under control
- Dog owner training courses specifically aimed at behaviour towards livestock
- Additional interpretation and education to explain the ecological benefit of keeping dogs under control
- Firebreak / ride re-orientation to lead visitors away from most sensitive sites
- Car park re-location to lead visitors away from most sensitive sites
- Self-guided trails to lead visitors away from most sensitive sites
- Encouraging gorse to grow to act as ride hedges

Monitoring

- Visitor behaviour surveys
- Status of birds
- Impacts on habitat e.g. ride species composition, ride width, erosion

Collecting the tariffs

6.7.12 The avoidance and mitigation strategy for the District Plan will need to establish the mechanism for collecting the tariffs for SANG and access management and monitoring. Several authorities in the Thames Basin use a standard legal agreement template for collecting tariffs from developers, an approach that could also be used in Mid Sussex. Alternatively, the costed programme of works for SANG, access management and monitoring could be funded by Community Infrastructure Levy receipts. In this case SANG, access management and monitoring requirements should be included in the Infrastructure Development Plan.

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7 Determining Effects on Site Integrity

7.1 Introduction

- 7.1.1 Using the information presented in **Chapters 5 and 6**, the following sections consider whether there will be adverse effects on the integrity of Ashdown Forest SAC or SPA.
- 7.1.2 English Nature (2004; now Natural England) has produced guidance on determining site integrity which includes a 'simple, pragmatic checklist' for assessing likely effects on integrity. This requires the assessor to pose a series of five questions to consider whether the Appropriate Assessment has shown:
 - ▶ That the area of Annex 1 habitats (or composite features) will not be reduced?
 - That there will be no direct effect on the population of the species for which the site was designated or classified?
 - ▶ That there will be no indirect effects on the populations of species for which the site was designated due to loss or degradation of their habitat (quantity/quality)?
 - That there will be no changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?
 - ▶ That there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
- 7.1.3 The guidance suggests that if the answer to all of these questions is 'Yes' then it is reasonable to conclude that there is not an adverse effect on integrity. If the answer is 'No' to one or more of the questions then further site-specific factors need to be considered in order to reach a decision. Such factors include:
 - Scale of impact;
 - Long term effects and sustainability;
 - Duration of impact and recovery/reversibility;
 - Dynamic systems;
 - Conflicting feature requirements;
 - Off-site impacts; and
 - Uncertainty in cause and effect relationships and a precautionary approach.
- 7.1.4 This two-step process is applied to determine whether there will be adverse effects on Ashdown Forest SAC or SPA as a result of the Consultation Draft District Plan as it currently stands, acknowledging that the draft plan will continue to evolve between now and adoption.

7.2 Ashdown Forest SAC

Step-one tests

Has the Appropriate Assessment shown:	Y/N
That the area of annex I habitats (or composite features) will not be reduced?	No
That there will be no direct effect on the population of the species for which the site was designated or classified?	N/A*
That there will be no indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	No**
That there will be no changes to the composition of the habitats for which the site was designated (eg reduction in species structure, abundance or diversity that comprises the habitat over time)?	No
That there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?	No

^{*} SAC not designated for any Annex 2 species. Great crested newt is present but not as a primary reason for site selection.

Step-two tests

Site-specific factors:	Comment		
Scale of impact	It is not currently possible to assess the scale of atmospheric pollution effects at the site because estimations of traffic growth are not yet available		
Long term effects and sustainability	Sustainability of habitats is threatened over the plan period		
Duration of impact and recovery/reversibility	If impacts occur they are likely to be long term, although air pollution impacts are potentially reversible		
Dynamic systems	Natural ecological dynamics of site would be affected by pollutant deposition if it occurs		
Conflicting feature requirements	There are no relevant conflicting feature requirements		
Off-site impacts	Offsite impacts are not likely		
Uncertainty in cause and effect relationships and a precautionary approach	The expected mechanisms of impacts are based on sound science, however, the level of traffic growth and consequent emissions has not yet been calculated. A precautionary approach has been taken		

7.2.1 It is not possible to conclude that there will be no adverse effect on the integrity of Ashdown Forest SAC at the present stage, in relation to atmospheric pollution.

^{**} Considered as typical species for the purposes of the assessment

7.3 Ashdown Forest SPA

Step-one tests

Has the Appropriate Assessment shown:	Y/N
That the area of annex I habitats (or composite features) will not be reduced?	No
That there will be no direct effect on the population of the species for which the site was designated or classified?	No
That there will be no indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	No
That there will be no changes to the composition of the habitats for which the site was designated (eg reduction in species structure, abundance or diversity that comprises the habitat over time)?	No
That there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?	No

Step-two tests

Site-specific factors:	Comment
Scale of impact	It is not currently possible to assess the scale of disturbance impacts at the site because the number of dwellings to be developed within the zone of influence is not yet known
Long term effects and sustainability	Sustainability of Annex 1 bird populations is threatened over the plan period
Duration of impact and recovery/reversibility	If impacts occur they are likely to be long term, although most acute during summer months. Impacts are potentially reversible but there is significantly more scope to avoid impacts at the outset through avoidance and mitigation
Dynamic systems	Increasing visitor use is not likely to impact on natural ecological dynamics of the site but could limit future management options (conservation grazing, tree/scrub removal, etc)
Conflicting feature requirements	There are no relevant conflicting feature requirements
Off-site impacts	Offsite impacts are not likely
Uncertainty in cause and effect relationships and a precautionary approach	The uncertainty that currently surrounds delivery of avoidance and mitigation measures has been taken into account, leading to a precautionary assessment

7.3.1 It is not possible to conclude that there will be no adverse effect on the integrity of Ashdown Forest SPA at the present stage, in relation to disturbance.

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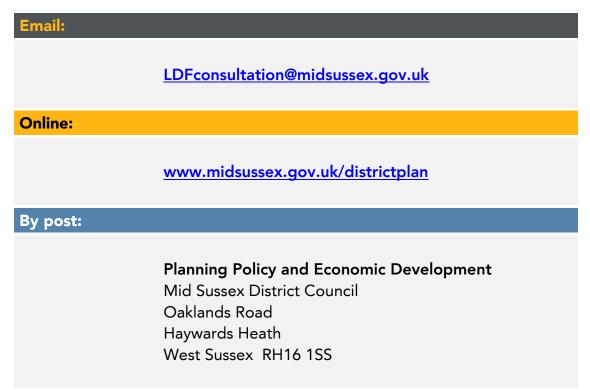
8 Conclusions and Consultation Arrangements

8.1 Conclusions

- 8.1.1 This report presents the Habitats Regulations Assessment of the Consultation Draft District Plan for Mid Sussex. It presents a revised screening assessment to determine which aspects of the plan are likely to lead to significant effects, and renews the Appropriate Assessment to determine whether there will be adverse effects on the integrity of Ashdown Forest SAC or SPA.
- 8.1.2 The report establishes the nature and severity of effects on ecological integrity and assesses the avoidance and mitigation measures put forward within the Consultation Draft District Plan, drawing on the information that is currently available. It provides recommendations for additional avoidance and mitigation measures to help ensure that adverse effects on the European sites can be avoided.
- 8.1.3 However, it cannot currently be concluded that Consultation Draft District Plan will not adversely affect either the SAC or SPA.
- 8.1.4 In relation to the SAC, it is not currently possible to determine the likelihood or scale of atmospheric pollution because there is insufficient data regarding the traffic growth effects of the plan. The Council is carrying out additional studies to provide a better understanding of the likely traffic implications of its development proposals, the outputs of which will be assessed in a future iteration of the report.
- 8.1.5 In relation to the SPA, good principles for avoiding and mitigating disturbance impacts within the SPA are included within the plan. But it is not currently possible to determine the scale of impacts because the spatial distribution of residential development has not been set, while possible sites for use as SANG have not yet been identified.
- 8.1.6 However, once the spatial strategy for residential development is finalised (including any proposed development within the zone of influence), and if it can be demonstrated that sufficient good quality potential SANGs exist to provide an alternative recreational resource for the number of dwellings proposed within the zone of influence, it may be possible to conclude that adverse effects are avoidable. Further work on the District Plan following the current consultation stage will explore these items in greater detail with the aim of demonstrating the adverse effects are avoidable.
- 8.1.7 Following the current consultation exercise, the HRA will be revisited to assess the findings of further studies and any changes made to the plan in response to consultation, in relation to the sites' conservation objectives.

8.2 Consultation Arrangements

8.2.1 This report is open to consultation with the public and stakeholders alongside consultation on the draft District Plan. All responses to the consultation should be sent to:





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Appendix I: Favourable Condition Table for Ashdown Forest

The Conservation Objectives for the Ashdown Forest SPA and SAC are shared with the SSSI (please note, only those components relating specifically to the European-qualifying features are reproduced below): subject to natural change, to maintain the following habitats and geological features in favourable condition (*), with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc) for which the land is designated.

(*) or restored to favourable conservation status if features are judged to be unfavourable.

Conservation Objective for Habitat Extent

To maintain the designated habitats in favourable condition, which is defined in part in relation to a balance of habitat extent (extent attribute). On this site favourable condition requires the maintenance of the extent of each designated habitat type. Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

Habitat Feature	Estimated extent (ha)	Measure	Site Specific Targets	Comments
Dwarf Shrub Heath	Dry heath: 320.49 Wet heath: 298.86 Mixed/unknown heath: 969.64 Total: 1588.99	Field survey and aerial photos (using photos from 2001). Check edges when they are defined by trees, scrub or bracken, to avoid encroachment into the heath. Aerial photos may be a good way to measure any changes.	No un-consented decline in the area of the habitat, except where a target has been set to increase the extent of other habitat features on the site at the expense of lowland heath. Sufficient area of suitable habitat to bryophyte and lichen populations: Area maintained where soils wet in winter /droughted in summer. No loss of open heath (where Calluna/grass cover is less than 50%). Open heath & bare ground to remain in same location.	Lowland heathlands are habitats created mostly through human management by grazing, cutting and burning. If they are left to natural processes, then they lose their open character and disappear under thick scrub or secondary forest. However some fluctuations and variations from year to year are normal and acceptable. Heath is important for bryophytes and lichens, some species are poor dispersers. Factors that reduce the area of open heath are damaging. Several bryophyte and lichen species require open bare ground that is wet in winter but dry in summer. Refer to site dossier for base-line info and location of important areas for bryophytes and lichens.

Open Standing Water	At least 17.15ha (probably includes some running water)	Assessment against baseline map. Aerial photographs may be useful. Record number of ponds once every 3 years (any time of year). Include breeding ponds and non- breeding ponds. The latter may be used to forage or to support prey populations.	Ponds (permanent and temporary) to remain in suitable numbers to sustain the size and range of great crested newt population. Once a survey has been carried out, a target for the minimum number of ponds should be set. No net loss of extent	There are over 100 ponds at Ashdown forest that support invertebrates and great crested newts. Assess changes caused by active management, such as infilling or channel diversion. Changes due to drying out or succession are covered later. In exceptional cases, a net loss may be acceptable if enhancements are made to remaining ponds. A full great crested newt survey is in process.
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Conservation Objective for Species Populations

To maintain the designated species in favourable condition, which is defined in part in relation to their population attributes. On this site favourable conservation status requires the maintenance of the population of each designated species or assemblage. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population or assemblage.

Species	Habitat	Population	Site Specific Target Range and	Comments
Feature	Feature	Attribute	Measures	
Nightjar, Caprimulgus europaeus	Dwarf Shrub Heath	35 pairs (1991-92 survey) 1.1% of British population	Maintain population within acceptable limits: Maintain the population above 75% (27 pairs) of that at designation - loss of 25% (9 pairs) or more unacceptable. Use counts or estimates of numbers of breeding individuals, pairs or calling males, occupied breeding sites or occupied territories.	Standard monitoring methods are widely published and recommended species-specific surveys are listed in Part 2 (available on JNCC website).
Dartford warbler, Sylvia undata	Dwarf Shrub Heath	20 pairs (1994 survey) 2.1% of British population	Maintain population within acceptable limits: Maintain the population above 75% (15 pairs) of that at designation - loss of 25% (5 pairs) or more unacceptable. Use counts or estimates of numbers of breeding individuals, pairs or calling males, occupied breeding sites or occupied territories.	Standard monitoring methods are widely published and recommended species-specific surveys are listed in Part 2 (available on JNCC website).
Great	Open	Eggs -	Present in all or sample ⁴ of	Eggs normally laid starting mid-
crested	standing	Awaiting	breeding ponds ⁵ at least once	

⁴ Use a sample at sites with high numbers of ponds (>20), where monitoring each pond is prohibitive; select at least 20 individual breeding ponds or 10% of all breeding ponds (whichever is larger), to represent geographic spread and variation in pond type plus immediate terrestrial habitat across the site. Sample ponds should ideally support a majority of the breeding population.

newt, Triturus cristatus	water	the results of a full survey	every 4 years. (i.e. acceptable for eggs to be absent from individual ponds 3 years out of 4; fail if any breeding pond lacks eggs for 4 years) Record presence by one day or night visit Mid-March – Mid-May. Survey for 4 consecutive years	February (southern England) but increasing numbers present (and therefore easier to find) through spring. Best to combine with visit for adult attribute.
Great crested newt, Triturus cristatus	Open standing water	Adults - Awaiting the results of a full survey	Peak count ⁶ should be at least 20% of the previous peak count recorded over 4 consecutive years. Record total adults detected in all or sample1 ponds in spring. Record for 4 consecutive years within each 6 year reporting cycle. 3 visits per year required. Timing based on known peak season for the area, and in-year weather conditions; likely to be Mid-April to Mid-May. Derive peak by summing counts across site on "best" night for each season.	Considerable between-year variation is frequent.

Conservation Objective for Dwarf Shrub Heath

To maintain the Dwarf Shrub Heath at this site in favourable conservation status, with particular reference to relevant specific designated interest features. Favourable conservation status is defined at this site in terms of the following site-specific standards:

Criteria Feature	Attribute	Measure	Site Specific Targets	Comments
Lowland dry and wet heathland	Bare ground (%)	Visual assessment of cover, using structured walk or transects	At least 1% but not more than 10% cover of the area of the feature should consist of firm, sunlit, horizontal, sloping or vertical, exposed bare ground. <1% of habitat heavily disturbed, eroded or showing signs of trampling/paths	Bare ground should form a patchwork with vegetation and be present mainly in south-facing slopes. Exclude rock, stone, litter and for wet heaths: bryophyte/lichen mats or heavily trampled soil. Tracks or paths can be a source of bare ground for nesting invertebrates. Record presence or signs of overgrazing & fires in the activities list on the field form. Burning of wet heath should be carried out in a controlled manner on a 10-20 year cycle.
Bryophyte	Niche	Visual	Features such as banks	Several species have

 $^{^{\}rm 5}$ Breeding ponds are those which have egg-laying and successful metamorphosis at least 1 in every 4 years.

⁶ Peak count to be taken as the highest site total from monitoring data in the 3 years leading up to designation.

species of lowland heathland with bare ground that is winter-wet, summer droughted, and with light disturbance	diversity	assessment based on mapping and aerial photographs	and paths retained	specialist requirements of open bare ground (often with only other bryophytes and lichens as associates) that are wet in winter but dry out in summer. The regular use of paths or tracks is beneficial as long as there is not excessive erosion.
Lowland dry and wet heathland	Vegetation structure: growth phase composition of ericaceous cover	Visual assessment of total ericaceous cover, using structured walk or transects	Pioneer (& pseudo- pioneer): 10-40% Building/mature phase: 20- 80% Degenerate phase: <30% Dead: <10% Presence of heather in all stages	Both young and mature stands would meet the targets, though structurally very different. Annual variation and succession should be accounted for within the targets. This attribute should be assessed only where it is possible to differentiate the growth phases. No one growth form should dominate.
	Vegetation structure: where bryophyte species of lowland heathland with bare ground that is winter-wet, summer droughted with light disturbance are present	Visual assessment	At least 50% of area to consist of pioneer/ degenerate Calluna OR at least 50% of site with vegetation height less than 15 cm	Bryophytes can survive under an open canopy of Calluna in degenerate/pioneer stages, but not under a dense canopy. Aim should be to retain/create bare patches in heath mosaic.
Lowland dry and wet heathland	Vegetation composition: dwarf shrubs	Visual assessment of cover, using structured walk or transects	At least two species of dwarf shrubs present and at least frequent. Dwarf shrub cover 25-90% Total Ulex and/or Genista spp. Cover <50%, Ulex europaeus <25% for dry heath and <10% for wet heath.	Dwarf-shrubs include: Arctostaphylos uva-ursi, Calluna vulgaris, Empetrum nigrum, Erica ciliaris, E.cinerea, E.tetralix, E.vagans, Genista anglica, G.pilosa, Ulex gallii, U. minor, Vaccinium myrtillus, Vaccinium spp. and V.vitis- idaea (and hybrids). Assess over whole feature. Annual variation and succession should be accounted for within the targets. Gorse species support a rich invertebrate and

				vertebrate fauna. However, they can also affect soil characteristics. See also 'negative indicators.'
Lowland dry heathland	Vegetation composition: graminoids	Record presence, using structured walk or transects	At least 1 spp frequent and 2 spp occasional (Deschampsia flexuosa and Nardus stricta no more than occasional & <25% cover): Agrostis, Festuca & Carex spp., Ammophila arenaria, Trichophorum cespitosum, Deschampsia flexuosa, Danthonia decumbens, Molinia caerulea, Nardus stricta.	In naturally species-poor sites, the presence of just one graminoid species may be enough to meet the target. For species-rich sites a higher target may be appropriate (see text).
Lowland wet heathland	Vegetation composition: graminoids	Visual assessment of cover, using structured walk or transects	At least 1 spp frequent and 2 spp occasional: Eleocharis spp., Carex panicea, C.pulicaris, Eriophorum angustifolium, Juncus acutiflorus, J. articulatus, Molinia caerulea, Rhynchospora alba, Schoenus nigricans, Trichophorum cespitosum.	Molinia no more than occasional and Schoenus at least occasional when naturally present. In naturally species-poor sites, the presence of just one graminoid species may be enough to meet the target. For species-rich sites a higher target may be appropriate (see text).
Lowland dry heathland	Vegetation composition: desirable forbs	Record presence, using structured walk or transects	At least 2 species occasional: Viola riviniana. Armeria maritima, Galium saxatile, Genista anglica, Potentilla erecta, Hypochaeris radicata, Lotus corniculatus, Plantago lanceolata, P. maritima, Polygala serpyllifolia, Rumex acetosella, Scilla verna, Serratula tinctoria, Thymus praecox,	In naturally species-poor sites, the presence of just one forb species may be enough to meet the target. For species-rich sites a higher target may be appropriate (see text).
Lowland wet heathland	Vegetation composition: desirable forbs	Visual assessment of cover, using structured walk or transects	At least 2 species occasional: Anagallis tenella, Drosera spp., Galium saxatile, Genista anglica, Myrica gale, Narthecium ossifragum, Pinguicula spp., Polygala serpyllifolia, Potentilla erecta, Serratula tinctoria, Succisa pratensis.	In naturally species-poor sites, the presence of just one forb species may be enough to meet the target. For species-rich sites a higher target may be appropriate (see text).
Lowland dry and wet heathland	Vegetation composition: bryophytes and lichens	Visual assessment of cover, using structured	Dry Heath: % cover maintained or increased (if naturally present) Wet Heath: >10% cover of Sphagna	Not applicable on all sites. Refer to existing information and surveys of the site. Does not include dense mats of acrocarpous

		walk or	and >5% cover of lichens	mosses which should be
		transects	(if naturally present)	no more than occasional
Lowland dry and wet heathland	Indicators of local distinctiveness :	As appropriate to feature	Maintain distinctive elements at current extent/levels and/or in current locations. Map area of species, maintain area	This attribute is not intended to set a target for detailed species monitoring, rather to provide a rapid indication of presence/ absence and/or approximate extent
Lowland dry and wet heathland	Negative indicators: Exotic Species	Visual assessment of cover, use structured walk or transect	<1% exotic species, e.g.: Gaultheria shallon, Fallopia japonica, Rhododendron ponticum Acrocarpous mosses <occasional <10%="" <5%="" bracken="" but="" campylopus="" e.g.="" for="" heath<="" introflexus="" td="" wet=""><td>Exotic species should be eradicated if possible. Species in this list may be beneficial for a range of invertebrates and only become indicators of negative quality if they are over the established limit.</td></occasional>	Exotic species should be eradicated if possible. Species in this list may be beneficial for a range of invertebrates and only become indicators of negative quality if they are over the established limit.
Lowland dry and wet heathland	Negative indicators: Herbaceous Species	Visual assessment of cover, use structured walk or transect	< 1 % ragwort, thistles and: Cirsium arvense, Digitalis purpurea, Epilobium spp. (excl. E.palustre), Juncus effusus, J.squarrosus, Rumex obtusifolius, Urtica dioica and: Dry heath <1%: Chamerion angustifolium, Ranunculus spp., Senecio spp. coarse grasses Wet heath <1%: Apium nodiflorum, Fallopia japonica, Glyceria fluitans, Oenanthe crocata, Phragmites spp., Ranunculus repens, Senecio jacobaea, Typha spp., Urtica spp.	Species in this list may be beneficial for a range of invertebrates and only become indicators of negative quality if they are over the established limit.
Lowland dry and wet heathland	Negative indicators: Tree and Scrub Species	Visual assessment of cover, using structured walk or transects	Trees and shrub <15% (but <10% for wet heath), e.g. Prunus spinosa, Betula, Pinus, Quercus & Rubus spp. Dry heath: Hippophae rhamnoides, Sarothamnus scoparius Wet heath: Alnus glutinosa, Salix sp.	Up to 25% scrub cover can be accepted if indicated in conservation objectives or management plan.
Lowland wet heath	Negative indicators: signs of disturbance	Visual assessment of cover, use structured walk or transect	No silt, leachate or artificial drains	Drains can adversely affect hydrology.

Conservation Objective for Open Standing Water

To maintain the open standing water habitat at this site in favourable conservation status, with particular reference to relevant specific designated interest features. Favourable conservation status is defined at this site in terms of the following site-specific standards:

Criteria Feature	Attribute	Measure	Site Specific Targets	Comments
Great crested newt, Triturus cristatus	Aquatic macrophyte cover	"Good" cover of marginal vegetation, emergent, submerged and/or floating vegetation to be present in at least 50% of breeding ponds.	Visual assessment between May and mid-September. Record for 4 consecutive years within each 6 year reporting cycle. 1 visit per year required. "Good" defined as: 25% - 100% of margin covered by marginal and emergent species, and 25% - 75% of pond bottom/ midwater/ surface covered by submerged or floating species.	This attribute allows for considerable variation in aquatic vegetation, but should prohibit a majority of ponds becoming overgrown, or suffering severe macrophyte die-back. Short-term algal blooms and duckweed Lemna coverage not normally problematic. Attribute should also serve as a proxy for detecting eutrophication, toxic spills, catastrophic reduction in invertebrate community, or underlying water quality issues; however if other evidence confirms one of these is a serious problem in >50% of ponds and the vegetation cover measures are nonetheless acceptable, then the attribute should fail.
Great crested newt, Triturus cristatus	Pond shading by scrub/trees	Sites with <20 breeding ponds: <25% of breeding ponds to have >20% of southern margin solidly shaded. Sites with >20 breeding ponds: Use above target in most cases, but if the habitat type and previous newt monitoring suggest a higher extent of shading is acceptable, <50% of breeding ponds to have >20% of southern margin solidly shaded.	Visual assessment of extent and orientation of pond margin solidly shaded by scrub/trees directly overhanging or adjacent to margin (not floating or emergent macrophytes). Assess April to June. Record once every 3 years. Shade should only be counted if relatively solid (and therefore likely to cause lower light levels and lower water temperatures).	Shading of southern margin is detrimental. Some shading of northern margin is often beneficial. Note that site context is important to consider (eg woodland sites should have higher threshold for shading than sand dune sites).
Great crested newt, Triturus	Terrestrial refuge habitat - structure	Presence of suitable terrestrial refuge habitat – define on site	Visual assessment at any time of year. Record once every 3 years.	High inter-site variation; dependent on site context. Record key features at time of designation and define

	1 1	Τ		
cristatus	and quality	basis.		components providing refuge potential; mark on map. May include discrete features or patches of habitat. Base on habitat structure that (i) provides refuge from extremes of climate (hot, cold, or dry); (ii) provides daytime shelter; (iii) is conducive to invertebrate prey populations. Most important close (<50m) to main breeding ponds. Most often provided by shrub layer, tussocky grass/rushes/sedges, scrub, woodland, leaf litter, cracked clay, quarry spoil, rubble, heaped brash, deadwood, log piles. Eg broadleaved woodland sites may have much undisturbed leaf litter, deadwood and exposed old root systems.
Great crested newt, Triturus cristatus	Pond persistence	Generic target for most sites: Minimum summer water depth 10cm for at least 50% of all or sample1 breeding ponds on each year of assessment. Note: the target may be adjusted downwards at sites where early desiccation is a natural feature (e.g. sand dunes, with many small, shallow ponds in close proximity) and where previous records demonstrate this is consistent with population viability. Target may be adjusted upwards at sites supporting ponds that do not normally dry out in summer.	Record approximate depth of water in identified breeding ponds between mid-August and mid-September. Visual assessment is suitable. Record once every 3 years.	High inter-site variation. Note the requirement for setting site-specific objectives with deviation from the standard target at sites where ponds naturally desiccate more frequently and earlier in the season without negatively affecting population viability. Target setting may require examination of historical site records and weather conditions to assess normal desiccation pattern. Premature desiccation (ie before mid-July (southern ponds) to mid-August (northern ponds)) is acceptable for all ponds in two out of three years provided highly successful recruitment in third year. Three consecutive years of desiccation with no recruitment should be considered unfavourable. Deep ponds are acceptable at sites where there is no chance of colonisation by fish.
Great crested newt, Triturus	Terrestrial habitat extent	No loss of area or fragmentation of site (through significant barriers to newt dispersal),	Determine area by walking site and comparing with map or aerial photo; most semi-natural habitats	Can be modified if there have been major, beneficial habitat alterations since designation

cristatus		compared with status at designation.	within 500m of breeding pond to be included. Assess presence of fragmentation. Any time of year. Record once every 3 years. Fragmentation refers to significant barriers to movement such as walls, buildings, and not, for instance, footpaths or tracks.	
Great crested newt, Triturus cristatus	Fish and wildfowl	Sites with fewer than 5 breeding ponds: Fish and wildfowl problems absent from all ponds. Sites with > 5 breeding ponds: Fish and wildfowl problems absent from >75% of ponds.	Visual assessment, March-September. Record for 4 consecutive years within each 6 year reporting cycle. 1 visit per year required. Look for fish and stocked wildfowl, or evidence of their presence: characteristic disturbance at water surface for fish, high turbidity, nests, droppings at pond margin, major loss of aquatic macrophytes, presence of algal blooms, heavily grazed grasses on bank. Numbers required to fail target: Fish: any number of individuals (need only to determine presence). Wildfowl: > 4 pairs/ha of open water.	Fish refers to all species known to be predators of great crested newt larvae, including stickleback, goldfish, orfe, rudd, pike, roach, perch. Target can be adjusted downwards if regular desiccation is likely, or (exceptionally) if larval survival is high despite fish presence. Target may be adjusted upwards if site is especially vulnerable (e.g. all ponds linked by ditches). "Wildfowl" refers to stocked ducks, swans or geese, and not natural populations of moorhens etc (which are not problematic).

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Appendix II: HRA Screening Findings

The following table presents the findings of the HRA screening exercise, which categorises each policy proposal according to the likelihood of it leading to significant effects on a European site. The key which follows the table describes the colours and alphanumeric coding for each category.

No.	Policy title	Ashdown Forest		
-	Quantity and type of development	SAC	SPA	
DP1	Economic development	D2	A4	
DP2	Retail development	D2	A4	
DP3	Housing	D2	D2	
DP4	General principles for Strategic Development at Burgess Hill	A1	A1	
DP5	Strategic allocation to the east of Burgess Hill at Kings Way	D2	A4	
DP6	Strategic allocation to the north and northwest of Burgess Hill	D2	A4	
-	Development in the countryside	SAC	SPA	
DP7	Protection and enhancement of countryside	A1	A1	
DP8	Preventing coalescence	A1	A1	
DP9	Sustainable rural development and the rural economy	A1	A1	
DP10	New homes in the countryside	A1	A1	
DP11	High Weald Area of Outstanding Natural Beauty	A3	А3	
DP12	Ashdown Forest SAC and SPA	A4	A4	
DP13	South Downs National Park	A2	A2	
DP14	Setting of the South Downs National Park	A3	A3	
DP15	Tourism	A1	A1	
-	Delivery of infrastructure	SAC	SPA	
DP16	Securing infrastructure	A1	A1	
DP17	Transport	A1	A1	
DP18	Rights of Way and other recreational routes	A1	A1	
DP19	Communication Infrastructure	A1	A1	
DP20	Leisure and cultural facilities and activities	A1	A1	
DP21	Community facilities and local services	A1	A1	
-	Nature and quality of development – design	SAC	SPA	
DP22	Character and design	A1	A1	

DP23	Accessibility	A1	A1
DP24	Noise, air and light pollution	A3	A3
-	Nature and quality of development – housing	SAC	SPA
DP25	Housing mix	A1	A1
DP26	Affordable housing	A1	A1
DP27	Rural exception sites	A1	A1
DP28	Gypsy and travellers	A1	A1
-	Nature and quality of development – historic envt.	SAC	SPA
DP29	Listed Buildings and other buildings of merit	A3	A3
DP30	Conservation Areas	A3	A3
DP31	Historic Parks and Gardens	A3	A3
DP32	Archaeological sites	A3	A3
-	Nature and quality of development – natural resources	SAC	SPA
DP33	Biodiversity / protection of natural habitats	A3	A3
DP34	Sustainable resources	A3	A3
DP35	Renewable energy in new developments	A3	A3
DP36	Renewable energy schemes	A3	A3
DP37	Flood risk	A3	А3
DP38	Water infrastructure and the water environment	A3	А3

Key: Categories for the screening assessment of policies (derived from Tyldesley, 2009)

Options / policies that will not themselves lead to development e.g. because they relate to design or other qualitative criteria for development, or they are not a land use planning policy.

- A2 Options / policies intended to protect the natural environment, including biodiversity.
- Options / policies intended to conserve or enhance the natural, built or historic environment, where enhancement measures will not be likely to have any negative effect on a European Site.
- Options / policies that positively steer development away from European sites and associated sensitive areas.
- Options / policies that would have no effect because no development could occur through the policy itself, the development being implemented through later policies in the same plan, which are more specific and therefore more appropriate to assess for their effects on European Sites and associated sensitive areas.

Category B: No significant effect

Options / policies that could have an effect, but the likelihood is there would be no significant negative effect on a European site either alone or in combination with other elements of the same plan, or other plans or projects.

Category C: Likely significant effect alone

- The option, policy or proposal could directly affect a European site because it provides for, or steers, a quantity or type of development onto a European site, or adjacent to it.
- The option, policy or proposal could indirectly affect a European site e.g. because it provides for, or steers, a quantity or type of development that may be very close to it, or ecologically, hydrologically or physically connected to it or it may increase disturbance as a result of increased recreational pressures.
- Proposals for a magnitude of development that, no matter where it was located, the development would be likely to have a significant effect on a European site.
- An option, or policy that makes provision for a quantity / type of development (and may indicate one or more broad locations e.g. a particular part of the plan area), but the effects are uncertain because the detailed location of the development is to be selected following consideration of options in a later, more specific plan. The consideration of options in the later plan will assess potential effects on European Sites, but because the development could possibly affect a European site a significant effect cannot be ruled out on the basis of objective information.
- Options, policies or proposals for developments or infrastructure projects that could block options or alternatives for the provision of other development or projects in the future, which will be required in the public interest, that may lead to adverse effects on European sites, which would otherwise be avoided.
- Options, policies or proposals which depend on how the policies etc are implemented in due course, for example, through the development management process. There is a theoretical possibility that if implemented in one or more particular ways, the proposal could possibly have a significant effect on a European site.
- Any other options, policies or proposals that would be vulnerable to failure under the Habitats Regulations at project assessment stage; to include them in the plan would be regarded by the EC as 'faulty planning'.
- Any other proposal that may have an adverse effect on a European site, which might try to pass the tests of the Habitats Regulations at project assessment stage by arguing that the plan provides the imperative reasons of overriding public interest to justify its consent despite a negative assessment.

Category D: Likely significant effects in combination

- The option, policy or proposal alone would not be likely to have significant effects but if its effects are combined with the effects of other policies or proposals provided for or coordinated by the LDD (internally) the cumulative effects would be likely to be significant.
- Options, policies or proposals that alone would not be likely to have significant effects but if their effects are combined with the effects of other plans or projects, and possibly the effects of other developments provided for in the LDD as well, the combined effects would be likely to be significant.
- Options or proposals that are, or could be, part of a programme or sequence of development delivered over a period, where the implementation of the early stages would not have a significant effect on European sites, but which would dictate the nature, scale, duration, location, timing of the whole project, the later stages of which could have an adverse effect on such sites.

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