FOOTPRINT ECOLOGY

Cannock Chase SAC – Planning Evidence Base Review

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Summary

This report has been commissioned by the Cannock Chase SAC Partnership. It sits within a suite of ongoing work that focusses on the implications of increased residential development in the vicinity of Cannock Chase, in the context of the European level legislation that supports the SAC designation. It reviews the current situation, and provides a platform for further work going forward. The delivery of avoidance and mitigation measures is through the Strategic Access Management and Monitoring Measures (SAMMM), intended to deliver avoidance and mitigation measures for new housing set out within currently adopted local plans, being built within a zone that extends out to 15km from the SAC. This was in response to evidence that this distance is the zone of influence within which new residential development is likely to result in the majority of additional recreation pressure on the SAC arising from new housing growth, and in response to advice from Natural England.

Following analysis of housing allocations in local plans, it was agreed that the volume of housing coming forward within the zone of influence potentially amounted to a 15% increase in visitors to the SAC over the local plan periods. The SAMMM sets out measures to accommodate this whilst protecting the site from adverse effects of recreation pressure, using an inner 0-8km zone and an outer 8-15km zone for the practical application of the approach and apportioning of developer contribution requirements from the inner zone.

This Planning Evidence Base Review checks whether the SAMMM is still fit for purpose in light of predicted housing delivery as part of the current local plans. Revisiting the original evidence base and the evolution of the approach to the formal signing of a Memorandum of Agreement between the local planning authorities in the Cannock Chase SAC Partnership has identified that the newly predicted housing figures for the inner 0-8km zone and outer 8-15km still accord with the magnitude of new residential growth that informed the 15% visitor increase and therefore the SAMMM. It is concluded that whilst there are some aspects of the approach that should now be the focus of a full review and upgrade to a more comprehensive strategy in the near future, the approach remains fit for purpose for the currently adopted local plans and the local authorities can continue to have confidence that adverse effects from predicted housing growth figures can still be adequately mitigated for.

Recommendations are made for evidence gathering to inform stage 2 of the review of evidence, which relates to the evidence needs for local plan Review and associated plan level HRAs. The local plan Reviews will be particularly influenced by the Greater Birmingham Housing Market Area needs, which are currently being assessed.

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1. Background and Objectives

1.1 This introductory section provides a summary of the background and context for this Planning Evidence Base Review, which has been prepared by Footprint Ecology and commissioned by the Cannock Chase SAC Partnership.

1.2 Cannock Chase is an extensive area of dry and wet heathland in the West Midlands. It is a popular visitor destination for outdoor relaxation and recreation, and has the benefit of a number of designations that recognise its recreation, landscape and biodiversity interest. The heathland resource is now much diminished in area from its historic extent throughout all lowland heathland zones in England, and as a consequence the habitat and dependent species are of very high nature conservation importance. As such, Cannock Chase is designated at a European level as a Special Area of Conservation (SAC), It is also a Site of Special Scientific Interest (SSSI), and an Area of Outstanding Natural Beauty (AONB). As an important visitor destination for outdoor recreation, Cannock Chase is also a Country Park, managed by Staffordshire County Council.

1.3 This report sits within a suite of ongoing work that focusses on the implications of increased residential development in the vicinity of Cannock Chase, in the context of the European level legislation that supports the SAC designation. It reviews the current situation, and provides a platform for further work going forward.

1.4 The content of this report will be of relevance to the other designations in addition to the European level SAC designation. However, the implications of increased residential growth and where that growth is to be located in the vicinity of Cannock Chase for the national level wildlife and landscape designations will be considered elsewhere. The relevant legislation and policy for the SAC designation is explained below, and it is the need for compliance with that legislation and policy, which drives the requirement for and content of this report.

1.5 This report has been prepared in accordance with the brief given by the Cannock Chase SAC Partnership (January 2017). Footprint Ecology has assisted the Partnership over several years in developing a strategic approach to avoiding or mitigating for recreation pressure on the wildlife interest of Cannock Chase SAC. This has included several studies to underpin the approach, as well as providing technical advice in developing the strategy itself. The measures in place enable the local planning authorities within the Cannock Chase SAC Partnership to have confidence that they are in conformity with their legislative duties.

1.6 The delivery of avoidance and mitigation measures is through the Strategic Access Management and Monitoring Measures (SAMMM), and this multi-authority and strategic approach developed by the Cannock Chase SAC Partnership is supported by

Natural England. The SAMMM are intended to deliver avoidance and mitigation measures for new housing being built in accordance with that set out in currently adopted local plans, within a zone that extends out to 15km from the SAC. This is in response to evidence that this distance is the zone of influence within which new residential development is likely to result in additional recreation pressure on the SAC. Within this zone, that potential additional pressure needs to be mitigated for, to prevent adverse effects on the SAC wildlife interest, which would otherwise occur as a result of recreation.

Habitats Regulations Assessments

1.7 Habitats Regulations Assessment (HRA) is a process for assessing the implications of a plan or project for European wildlife sites, in terms of any possible harm to wildlife interest that could occur as a result. HRA is required for both plans and projects; it includes any public body led plan or strategy, and includes any project being undertaken by or permitted by a public body. HRA work includes the assessment of plans and projects, but can also include the preparation of underpinning evidence to inform the HRA, and detailed strategies to deliver any required mitigation to prevent adverse effects on European sites. This report is therefore part of the overall HRA work for Cannock Chase SAC, alongside a number of HRA evidence documents discussed below, and the HRAs of plans and projects undertaken by the local planning authorities in the vicinity of Cannock Chase SAC.

1.8 The relevant European legislation is the Habitats Directive 1992[1] and the Wild Birds Directive 2009[2], which are transposed into domestic legislation through the Conservation of Habitats and Species Regulations 2010, as amended. These Regulations are normally referred to as the 'Habitats Regulations.' Legislation sets out a clear step by step approach for public bodies considering any plan or project. In England, those duties are also supplemented by national planning policy through the National Planning Policy Framework (NPPF).

1.9 Where local planning authorities identify a potential risk to European sites from their plans, projects and authorisation of others to undertake projects, they may pursue a range of options to resource the avoidance and mitigation needs. The Cannock Chase SAC Partnership currently resources the delivery of the required measures for new houses out to 15km through developer contributions collected in the first 8km of this zone, along with some additional measures relating to targeting recreation use outside the SAC, being developed by Staffordshire County Council, Natural England and the Forestry Commission. The delivery of the SAMMM through developer contributions is now embedded within the Local Plans for the respective authorities within the

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

Cannock Chase SAC Partnership, having been tested within Local Plan Examinations over recent years.

Cannock Chase SAC

1.10 Cannock Chase SAC is part of a European wide network of important high-quality conservation sites that contribute to the maintenance and restoration of habitats and species of European importance, as identified in the Habitats Directive. Cannock Chase qualifies as a SAC for the following wildlife features:

- H4010. Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- H4030. European dry heaths

1.11 In accordance with the Habitats Regulations, Staffordshire County Council works with its partners to take appropriate steps to avoid deterioration of these natural habitats for which the SAC has been designated, following the conservation objectives set for the site by Natural England. The conservation objectives are set out in appendix 2. They require the maintenance, or where necessary the restoration, of the extent, distribution, structure and function of the wet and dry heathland habitats, along with the supporting functions and typical species on which the heathland relies.

1.12 Condition assessments, undertaken by Natural England on all SSSI sites on a cyclical basis, indicate that Cannock Chase is in unfavourable condition, but is deemed to be recovering due to the range of management measures being put in place by Staffordshire County Council. The County Council is predominant land manager for Cannock Chase SAC, with the Forestry Commission, AONB team and other stakeholders involved in the management of the wider Cannock Chase area outside the designated site. Additional very small parts of the SAC are also currently owned/managed by Cemex UK and by the National Trust.

1.13 Condition assessments tend to broadly reflect the nature of the common standards monitoring guidelines for lowland heathland and such monitoring is not generally directed towards impacts from recreation. It also offers a snapshot in time, rather than giving consideration to an impact that can result in a long term and gradual decline. Any significant indications of decline in habitat interest features may not be formally recorded in the condition assessments, at least until there are widespread changes in vegetation condition.

1.14 There is a notable risk of adverse effects on the SAC from new development in close proximity to the site. This was noted in the HRA of the (now revoked) West Midlands RSS in 2007. Concern was especially raised about the possible adverse effects from water abstraction, air quality and recreational pressure. Since then the risk posed by new residential growth has been highlighted in district level HRAs, although it can be

difficult to show conclusive proof of a link between signs of habitat deterioration and recreational pressure. Similar links of cause and effect on heathlands classified under the European Directives for bird species of European importance are easier to establish when survey work demonstrates that birds are in lower numbers, and/or have impaired breeding rates, when exposed to recreation pressure.

1.15 However, the studies that form the evidence base, discussed in the following section, do identify potential causes of habitat deterioration from recreational pressure that pose a risk to Cannock Chase SAC, which include mountain biking, walking, dog walking and horse riding.

1.16 The conservation objectives set for European sites are for the purpose of maintaining and restoring the wildlife features for which they are designated. The features are to be maintained by protecting them from harm and undertaking appropriate management, and where there has been historic or current deterioration, the objectives require restoration. In order to fulfil the conservation objectives, public bodies must therefore prevent deterioration, or further deterioration where it is currently present.

1.17 In considering the implications of new residential development, the Cannock Chase SAC Partnership has developed the evidence base and the SAMMM in order to mitigate for potential adverse effects. In recognition of the risks posed, the measures are designed to ensure that such risks are not materialised, therefore maintaining the SAC interest.

The purpose of this Planning Evidence Base Review

1.18 With local plans adopted and now being implemented, and the commitment to the SAMMM, measures are in place to protect the European sites and prevent adverse effects, Following from this, regular monitoring and review should be an integral part of any longer-term strategy, particularly given that the local plans being implemented will themselves be reviewed over time, HRA related review work can include checking what evidence is available to support the continuation of mitigation measures, or to highlight where they may need modification. Relevant information may include mitigation effectiveness, which will be data collected through monitoring, and whether the circumstances for which mitigation was designed continue to be as predicted.

1.19 This report seeks to check whether the current approach through the SAMMM remains fit for purpose or whether it should adapt to changing circumstances or new evidence. The need for monitoring and review is recognised as part of the Cannock Chase SAMMM, and a monitoring programme is one of the SAMMM measures for which funding will be apportioned. Reviews of strategic mitigation schemes may be planned to take place periodically or may be triggered by new relevant information or significant changes in relation to the local plans supported by the approach, or the

European sites protected by the approach. This review of the approach is timely given its progression since being established, but it is now also triggered by a number of matters, as discussed below.

1.20 There is recognition by the Cannock Chase SAC Partnership that they need to have an up to date understanding of avoidance and mitigation needs in order to then assess whether the SAMMM will be effective to mitigate the impact of potentially higher residential development pressures and to inform their input to the housing needs assessment work being undertaken for the Greater Birmingham Housing Market Area.

1.21 From recent assessments of housing need in comparison with the housing currently committed within local plans it is apparent that there is will be a significant shortfall in housing delivery in the Greater Birmingham Housing Market Area in future. The local planning authorities within the Cannock Chase SAC Partnership will therefore need to assess what additional residential growth can be accommodated within their administrative areas. Consideration of the current and planned approach to avoiding and mitigating for recreation pressure on Cannock Chase SAC must therefore be a factor in that wider spatial planning work. The local planning authorities will also be aware of other potential future growth pressures in addition, such as those driven by Government and Strategic Economic Plans.

1.22 It is additionally recognised that that there may be some discrepancies between predicted rates and locations for growth identified in local plans at the time that the SAMMM was developed, and both current rates and locations for housing delivery, and the rates and locations that may be supported by new local plans as current plans go through Review. It is further suggested by the Cannock Chase SAC Partnership that there may be some discrepancy between predicted and actual growth proportions within the 0 to 8km part of the zone of influence and the 8 to 15km part of the zone of influence.

1.23 Aside from the potential need for greater housing delivery in the Greater Birmingham Housing Market Area in the near future, it is therefore necessary to check that the mitigation approach is still delivering the necessary protection for Cannock Chase SAC in light of the uncertainties identified by the Partnership.

1.24 In recognising the need for the Planning Evidence Base Review, the Cannock Chase SAC Partnership has divided the requirements into two stages of reviewing and updating the evidence and the SAMMM approach to avoiding and mitigating for recreation pressure on Cannock Chase SAC. This Report relates to the Stage 1, which will be a standalone piece of work until Stage 2 is undertaken. This report is a review of the current situation in relation to housing delivery and delivery of the mitigation measures established to protect Cannock Chase SAC for the currently adopted local plans, having regard for potential discrepancies in housing numbers being delivered within those plan periods. Stage 2 will consider the requirements for plan Review,

including additional housing number requirements that may need to be met for the Greater Birmingham Housing Market Area. The SAC Partnership has advised that there has been some early indication of housing numbers that may need to be accommodated in some local planning authority areas. These early figures are of a magnitude that they are best considered as part of the plan level HRA work required to inform local plan Review. Such figures cannot be factored into this stage 1 report as they would command a more extensive revision of evidence than that which is within the scope of this report. There is currently not enough information, or consistency of information on them across the authorities within the Partnership, to enable an effective assessment.

2. The current situation and summary of evidence

2.1 In this section, a short summary of the current evidence is set out, to provide context for the Planning Evidence Base Review, including:

- The current evidence base
- The area/zones for which the need for mitigation was identified
- How the Zones of Influence were identified and how visitors originating outside these are dealt with;
- The number of homes being mitigated for (and the period covered, and how calculated);
- The number of visitors this equates to;
- How this was then translated into projects to mitigate for visitor impacts.

The current evidence base

2.2 As noted above, there has been considerable work to date to develop an evidence base to underpin the approach to protecting Cannock Chase SAC from the effects of increased recreation pressure that is likely to arise because of residential growth. The current evidence baseline consists of four key reports that assess visitor behaviour and trends at Cannock Chase, the potential impacts of recreation and recommend suitable measures to avoid and mitigate for potential impacts. This work was undertaken between 2010 and 2012:

- Cannock Chase SAC Visitor survey report and map annex (Liley 2012);
- Impacts of recreation on Cannock Chase SAC report (White, McGibbon & Underhill-Day 2012);
- Cannock Chase SAC observation study report (Liley & Lake 2012);
- Cannock Chase SAC Visitor Impacts mitigation report (Underhill-Day & Liley 2012), which drew on the other reports to make recommendations for mitigation measures.

2.3 Following the production of the above, it was agreed that the volume of housing coming forward within the zone of influence potentially amounted to a 15% increase in visitors to the SAC, which needed to be mitigated for to prevent adverse effects on the integrity of the site. The Cannock Chase Partnership worked closely with Natural England to consider the evidence, and Natural England provided their specialist advice in relation to the potential impacts and the implications for the SAC interest features, in light of the current situation.

2.4 Over 2013 to 2015 a number of additional key documents were therefore produced, which have informed the development of the SAMMM:

- Further analysis by Footprint Ecology of visitor survey data to consider apportioning costs between zones (Liley 2013);
- NE advice letter 23.9.13;
- NE advice letter 11.12.13;
- NE SAMM proposal 21.3.14;
- Memorandum of Agreement (MOU) between the Cannock Chase SAC Partnership authorities to commit to an agreed SAMMM and its funding through developer contributions collected via S106 legal agreements (2015).

2.5 The original evidence base reports and then the documents giving further analysis of the evidence and Natural England's advice enabled progression to a formal Memorandum of Understanding (MOU) being established between the Cannock Chase SAC Partnership authorities in 2015. The MOU committed each authority to the implementation of the SAMMM, with the collection of developer contributions from new residential development.

2.6 The SAMMM and MOU is based on all new housing coming forward from 2011 onwards for a 15-year period (seeking to cover the local plan periods for the SAC Partnership authorities as far as possible). Developer contributions collected prior to the formal MOU, and the calculations to determine the appropriate tariffs within each authority enabled the Partnership to have certainty that the measures set out within the SAMMM will be funded and can be implemented over the plan periods, whilst recognising the need for review and update as plans are reviewed and updated.

The area/zones for which the need for mitigation was identified

2.7 Zones of influence provide an indication of the geographical extent to which recreation pressure may be relevant for each European site, i.e. the geographical zone around each European site, within which new housing may pose a risk in terms of the majority of additional recreation pressure. A zone of influence identifies the area where new development will lead to impacts and new development within the zone will need to either demonstrate no adverse effect on the integrity of the European site or provide mitigation. A zone of influence outer limit of 15km was recommended by Underhill-Day & Liley (2012).

How the zones were identified

2.8 Establishing a definite boundary where development will have an impact is not straight forward, as visitor rates gradually tail-off with distance from the SAC (e.g. see Figure 8 in Liley 2012). The recommendation for a 15km limit was based on postcode data collected during the visitor survey (Liley 2012), and reflected the distance within which

75%[3] of all visitors had originated. Beyond 15km visitor rates by area are very low due to the dispersed pattern of visitor origin (Figure 8 in Liley 2012).

2.9 The use of a set distance to encompass 75% of visitors' postcodes was tested at the Lichfield Examination of the local plan, where evidence in support of the approach was given by Natural England and Footprint Ecology. The choice of 75% also matches the approach used at other European sites (see Table 1). At sites such as the Thames Basin Heaths and Dorset Heaths the zones have been in place for many years, have been tested at a range of public inquiries and hearings and subject to considerable scrutiny (e.g. Burley 2007) .

Table 1: Some examples of zones of influence (relating to recreation) at other European sites. Links relate to one of the relevant local authorities' website with relevant information on the mitigation strategy.

Site	Designations	Relevant interest features	Zone of influence	How calculated
Dorset Heaths	SPA, SAC, Ramsar	Heathland habitats, range of SAC interest, Nightjar, Woodlark, Dartford Warbler	5km	Approximately 75% of visitor postcodes from on-site visitor survey.
Thames Basin Heaths	SPA	Nightjar, Woodlark, Dartford Warbler	5km	Approximately 75% of visitor postcodes from on-site visitor survey.
Dawlish Warren	SAC	Sand dunes	10km, clipped to coast etc.	Based on range of visitor survey data, chosen for consistency with neighbouring sites; captures around 55% of visitors in postal survey
East Devon/ Pebblebed Heaths	SPA/SAC	heathland habitats; Nightjar, Dartford Warbler.	10km	Based on range of visitor survey data, chosen for consistency with neighbouring sites; captures 71-86% of visitors in postal survey
Exe Estuary	SPA/Ramsar	Wintering waterbirds	10km	Based on range of visitor survey data, chosen for consistency with neighbouring sites; captures 73-84% of visitors in postal survey
Solent (3 European sites)	SPA/Ramsar	Wintering waterbirds	5.6km	75% of visitor postcodes from on-site visitor survey
Ashdown Forest	SPA	Nightjar, Dartford Warbler	7km	7km was the initial distance used based on visitor data from on-site visitor surveys and is in the process of being reviewed (see link).

[3] 15.13km was the 3rd quartile value for the distance between the interviewee's home postcode and the point where interviewed (n=3206 postcodes).

2.10 It should also be noted that, in both the Thames Basin Heaths and Dorset Heathland cases, it was deemed most appropriate (after careful scrutiny and public examination of the proposals):

- To fix the same distances around all the component SSSI, irrespective of variations in levels of accessibility (and indeed whether different parts of the heaths were even open to the public);
- To base accessibility on straight-line distance from the SPA boundary, rather than distance to access points or estimating travel times (which vary considerably and could change over time);

2.11 The strategic approach to mitigating for residential growth that may otherwise lead to adverse effects on Cannock Chase SAC uses the 75% of visitor postcodes approach in conformity with established practice elsewhere. This is increasingly seen as good practice as it works well for the practical application of mitigation, and is proportionate because the potential impact outside a zone of influence is very small. With a comprehensive scheme in place that mitigates for recreation pressure arising from new residential development within the zone, which is evidence based, precautionary and adaptive, it is commonly accepted that development outside the zone will not lead to adverse effects on European site integrity.

2.12 However, it is also recognised that over time, it is possible that new significant levels of development outside the zone of influence could also mean an increase in the number of visitors from beyond 15km. In other mitigation schemes, development just outside the zone of influence is assessed on a case-by-case basis through individual project level HRAs. This is particularly focussed on large developments (for example 50 houses or more for the Dorset Heathlands strategic mitigation approach) being proposed in close proximity to the edge of the zone of influence. This is because there is the potential for the zone defined by 75% of visitors to change if large scale residential development is concentrated just outside the zone, but is brought forward in the absence of avoidance and mitigation measures. In light of project level HRA findings, it is often recommended that such developments provide bespoke mitigation measures that include securing adequate informal recreation space.

2.13 Given that the outer limit to the zone of influence for Cannock Chase SAC similarly encompasses 75% of visitor survey postcodes, there are clearly some visitors coming from outside the zone, and visits could similarly increase or the zone boundary could change if significant development takes place close to the zone but in the absence of mitigation. A project level HRA approach for large developments outside the Cannock Chase SAC zone of influence was recommended for Cannock Chase SAC by Underhill-Day & Liley (Underhill-Day & Liley 2012). For Cannock Chase, the wider visitor draw is focussed on specific recreation activities such as mountain biking and horse riding, rather than the more localised walking and dog walking uses. In addition to

undertaking project level HRA outside the zone of influence where relevant, targeted on-site management and educational measures on-site have the potential to be the most effective means of resolving impacts associated with these activities. Such management is noted in the explanation of the SAMMM below.

The number of homes being mitigated for

2.14 As part of the visitor work in 2012 (Liley 2012), GIS data on new housing for the sub areas were provided by the relevant local authorities in the form of a combined dataset, containing different sources of housing sites such as sites with planning permission, strategic sites allocated in local plans or SHLAA sites. This combined layer described a projected increase in housing of 77,589 new homes, an increase of around 10% (housing numbers at the time for the same geographic area in 2012 were 756,617). These totals related to all relevant authorities and all subareas[4] and included areas well beyond 20km of the SAC.

2.15 Within 20km of the SAC Liley (2012) estimated the level of change at 52,039 new homes, an increase in the number of houses of 12%. The zone of influence was identified as 15km and the level of change within 15km was (in the Liley report) anticipated at 30,134. Within the 15km at that time there were around 237,853 residential properties. These data (within 15km) are summarised in Table 2 and broken down by 1km distance band and local authority in Appendix 3. The level of change in housing numbers within 15km was anticipated to be 13%. A large proportion (some 17,272 dwellings) were anticipated in the 0-8km band[5].

[4] See paragraph 3.72 of the visitor survey report (Liley 2012) and details of how these data were compiled by the relevant local authorities are set out in Appendix 4 of that report

[5] 0-8km total extracted from table 24 of the visitor survey report (Liley 2012)

Table 2: Summary of housing levels at time of 2012 visitor report and the anticipated level of growth within a 15km radius (taken from Table 24 in Liley 2012).

Number of houses at time of report (2011 postcode data)	237,853
New dwellings predicted in 2012 as part of local plan (within 15km)	
Birmingham City	0
Cannock Chase	5462
Dudley	0
East Staffordshire	1382
Lichfield District	5691
Sandwell	0
South Staffordshire	2369
Stafford Borough	8473
Walsall	3993
Wolverhampton	2764
Total new dwellings anticipated	30,134
TOTAL (all dwellings)	**267,987 (13% increase)**

The number of visitors the mitigation relates to

2.16 Estimating total visitor numbers to a site such as Cannock Chase is very difficult and we do not have accurate figures for the current levels of access. Liley (2012) estimated, from the 2010-2011 visitor survey evidence that there are approximately 1.7 million visitors per annum to the SAC, but there were some limitations to approach used[6].

2.17 Without an accurate figure for the number of current visitors, estimating future visitor numbers is not possible. The approach used by Liley (2012) was to estimate the percentage change in visitors as a result of new housing, using the number of visitors interviewed as the baseline. The number of visitor survey postcodes were scaled up for different distance bands and local authority areas, based on the potential increase in housing compared to the housing levels when the survey was conducted. For example, if a particular area had 1000 houses at the time of the survey, 10 people were interviewed during the survey and the level of new housing growth anticipated was 100 houses then the increase in visitors would be 10% from that area, i.e. one additional interviewee. The overall percentage change was therefore equivalent to the number of additional interviews that might have been expected, were the visitor survey to be repeated in the future.

2.18 Using the above approach, we suggested an increase in access of 15%, based on the spatial distribution of housing data (anticipated new housing from the local plans) provided to Footprint Ecology at the time. This 15% figure was the headline figure for

[6] See paragraph 3.70 in Liley (2012) for discussion.

changes in access used as the basis for mitigation recommendations (Underhill-Day & Liley 2012) and in the subsequent advice from Natural England[7].

2.19 As such, mitigation recommendations were not set out to absorb a very specific number of visitors, but rather based on the overall level of change anticipated and the evidence for current impacts and pressure on the site (see White, McGibbon & Underhill-Day 2012). Underhill-Day & Liley (2012) deliberately avoided any specific calculation of visitor numbers and mitigation, however very approximately it is possible to derive such an estimate. If there were around 1.7 million visits to the SAC at the time of the visitor survey, and about 75% of visits originated from within 15km, then 1,275,000 visits originate from the zone of influence. An increase in access levels of 15% within that zone would be around 191,250 visits per year.

2.20 It is important to note that in the context of the recommendations made for mitigation, each mitigation measure has a differing capacity, and one which is not necessarily linear. Some will have a stepped capacity, such as warden staff whereby one warden could adequately resource a site with 1000 visitors but another warden would step that capacity up to 2000 for example. Some measures have indefinite capacity, such as informative websites. Increasing mitigation requirements alongside increasing visitors is therefore not as straight forward as simply adding more mitigation in line with growth.

Natural England's advice

2.21 The Cannock Chase SAC Visitor Impacts Mitigation Report (Underhill-Day & Liley 2012) made a number of recommendations in relation to how the predicted 15% increase in visitors might be managed to prevent adverse effects on the SAC. This included suggestions for access management within Cannock Chase and also off-site recommendations for large scale greenspace in light of the visitor draw and types of recreation undertaken. The Cannock Chase SAC Partnership used all of the evidence produced to work closely with Natural England to establish the most appropriate means of taking forward the advice and research, having regard for the practicalities of implementation.

2.22 Natural England provided very positive support to the Partnership in seeking to interpret the commissioned evidence alongside Natural England's understanding of the site, how its condition is evaluated, how to practically interpret and apply the conservation objectives and what expectations there should be for the achievement of those objectives over time. Natural England advised that the principal impact of visitor

[7] Email from Antony Muller, 21/3/2014

pressure is loss of the SAC dry heath vegetation to new paths, path expansion, associated erosion and eutrophication. Whilst noting that the current visitor use of the site is high, Natural England advised the Cannock Chase SAC Partnership that the existing levels of visitors were not adversely affecting the integrity of the site and that existing levels of visitor pressure should therefore be regarded as the baseline, from which the 15% visitor increase should be assessed, i.e. the risk is that the site could become adversely affected from increased recreation pressure, rather than increased pressure would lead to further deterioration.

2.23 With this in mind, Natural England assisted the SAC Partnership with developing a package of avoidance and mitigation measures that were informed by the original recommendations in the Cannock Chase SAC Visitor Impacts Mitigation Report (Underhill-Day & Liley 2012), but that also recognised the need for an approach that was proportionate in light of their advice that recreation was not currently causing site deterioration and in the context of the degree of change expected in the already high volume of visitors.

The development of the SAMMM

2.24 Use of the evidence base and Natural England's advice led to a focus on measures that could be implemented on the SAC in order to manage the increasing recreation coming forward over time. Discussions between the Partnership and Natural England concluded that the provision of off-site Suitable Alternative Natural Greenspaces (SANGs), should not be pursued at this time, due to their relatively high cost when compared to on-site mitigation measures that should be prioritised for implementation and monitoring in the first instance. The difficulty of replicating a large-scale open landscape, which is one of the main attractants for Cannock Chase, is also a driver for focussing on the on-site measures.

2.25 In addition to the on on-site measures, Natural England has also encouraged Staffordshire County Council and Forest Enterprise as key land owners at Cannock Chase to work together to facilitate additional, sustainable visitor access within the wider forest estate outside the SAC. The latter is now progressing well, with collaborative working over access management infrastructure and promotion materials, and the routes promoted for particular activities and events (such as horse-riding maps, running and cycling events). Whilst recognising the 15km zone of influence as the zone within which there is a need for avoidance and mitigation measures to prevent adverse effects, this targeted mitigation will be of benefit to managing the activity specific draw that Cannock Chase has both within and outside the 15km zone.

2.26 The on-site measures that make up the current SAMMM, committed to within the MOU are provided in Table 3 below. A significant proportion of the cost related to staff. The two members of staff are now in post and their role is primarily to deliver the SAMMM.

Much of their time will be spent on planning and overseeing the delivery of the non-staff measures.

Table 3: SAMMM measures and costs, as agreed in the MOU.

Measure	Cost £K	Duration	Explanation
Engagement of three of four key sectors: walkers and dog walkers; cyclists; horse riders. Development of volunteering and education programmes. Promotional and interpretation material	30	Years 1 to 10	Cost here only includes promotional and interpretation material, which would consist largely of web-based material. The other cost of sector engagement is staff time and is adequately built into the figures below
Strategies: an overarching strategy for visitors and nested strategies for car parking, track and footpath management and each visitor sector, plus a monitoring strategy	135	Years 2 and 3	Consultancy costs. Overarching strategy including monitoring £50K, car parking £40K, each of three visitor sectors £15K
Physical management: improvement of paths and tracks; implementation of parking plan; way marking and on-site interpretation panels	255	Years 1 to 15	Contract costs. Paths and tracks: quoted cost £10 per m; 1km a year for 10 years; followed by 100m a year for 5 years. Assume implementation of a parking plan will be cost neutral (funded by car park charges). Panels and way marking £50K.
Monitoring	100	Years 4 to 15	Consultancy costs. Two repeats of the aerial survey of paths and tracks, £10K each to include ground truthing and targeted biological monitoring as necessary. Two visitor surveys £40K each
Staff: one full-time project manager and one full-time visitor engagement officer	1400	Years 1 to 10	Project Manager £40K salary plus overheads = £80K. Engagement officer salary £30K, plus overheads = £60K. Costs dependent on managing body. These staff set up and manage all consultancy and other contracts, and undertake all engagement work above
Project initiation: business plan; agreement of partner responsibilities (Memorandum); recruitment of project staff.	50	Year 0	A simple assumption that there is a cost in employing the Lichfield DC project team for project initiation.
TOTAL	**1970**	**Years 1 to 15**	

2.27 Implementation of the SAMMM is supported by policies in place within the Local Plans for each local planning authority within the Cannock Chase SAC Partnership. As previously noted, the Local Plans have been tested at Examinations and the SAMMM approach is therefore considered to be sound. The approach is also supported by a guidance document that explains the background to the SAMMM, the evidence used to develop it and the way in which the cost of the SAMMM is met through developer

contributions. The guidance explains how the costs are apportioned to the local planning authorities within the Partnership. It is available on the websites of each authority.

3. Comparing original, current and newly proposed housing delivery

3.1 This section of the review looks at the rates of housing delivery in the local plans that informed the predicted visitor increases, the mitigation recommendations made as part of the evidence base and Natural England's advice, all of which then informed the SAMMM and MOU. It compares those housing delivery figures with the current rates of delivery now being progressed and expected in the near future, which take into account any additional development sites being brought forward and windfall rates. In order to undertake this comparison, all key documents relating to the development and evolution of the strategic mitigation approach have been revisited.

The original housing figures

3.2 In checking the evidence base, this report has referred back to the information used to inform the reports prepared by Footprint Ecology in 2012 and 2013. The original housing figures that informed Footprint Ecology's analysis can be summarised as follows:

- In the original evidence reports Footprint Ecology undertook the analysis based on an anticipated 30,134 houses within the 0-15km, being the housing data provided by local authorities at the time.
- In considering the zone of influence and the split of the zone into 0-8km and 8-15km, Footprint Ecology anticipated 17,272 houses within the inner 0-8km zone, based on data provided by local authorities at the time of preparation of the original reports.

3.3 As described in the previous section, this analysis led to the conclusion that based on the housing figures, there was the potential for a 15% visitor increase to Cannock Chase SAC, which should be mitigated for in order to protect the SAC interest features and the continued achievement of conservation objectives.

The SAMMM and MOU

3.4 In preparing this review Footprint Ecology has also revisited the documentation relation to the SAMMM and MOU. We have found that the figures set out in Table 2 above, which derive from Table 24 in Liley 2012, are different to those set out in the MOU, signed by the local authorities. That MOU stated that the mitigation measures (set out in the in the SAMMM, replicated at Table 3 above) related to 78,000 houses in the whole 0-15km zone. While the MOU states that the 78,000 figure came from the Footprint Ecology visitor impacts mitigation report, that report clearly states that 78,000 related to all housing within the local authority areas and not just the 0-15km

zone. The MOU therefore incorrectly transposed information from that report and as a consequence, majorly inflates the number of houses that the MOU states as being mitigated for by the SAMMM.

3.5 Whilst the error needs to be corrected with an updated MOU or transition to a strategy at an appropriate point in the near future (ideally when there may also be other update requirements), it does not affect the viability of the mitigation approach or the measures currently being implemented. The evidence base predicted a 15% visitor increase as a result of the residential growth proposed within local plans coming forward within the whole 0 – 15km zone, identifying that a large proportion would come forward from the inner 0-8km zone; 17,272 dwellings, as discussed in the previous section above.

3.6 The avoidance and mitigation measures recommended as part of the evidence base as a consequence of analysis of the housing figures, and the subsequently refined measures developed into the SAMMM, are in light of a predicted 15% increase in visitors. That 15% increase was derived by using the correct housing figures coming forward for the zone of influence, obtained from the information provided to Footprint Ecology at the time. Because the error in the MOU are with simply the reference to the total housing numbers, rather than in relation to the necessary mitigation to mitigate for housing numbers, it can be concluded that the overall SAMMM package in terms of its capacity to mitigate for the actual housing numbers in the adopted plans is not affected by the MOU error.

3.7 Apart from those with small numbers of housing, the Cannock Chase SAC Partnership local planning authorities have been collecting developer contributions for some time, in response to the original RSS findings, their own plan level HRAs and the emerging evidence base at the time. The developer contributions were revisited as part of the finalisation of the SAMMM and MOU. The calculations undertaken are therefore based on two elements; the monies already collected by the local planning authorities prior to the MOU, and the housing still to come forward when the MOU calculations were made. The remaining 8495 dwellings to come forward were therefore attributed a per house tariff for developer contributions based on the remaining funds requirement after the monies already collected (for residential development permitted before the MOU) were taken into account. This therefore explains the difference between the 17,272 dwellings in the 0-8km zone used by Footprint Ecology in the evidence base, and the 8495 dwellings that were used in the MOU calculation.

3.8 It is therefore concluded that the MOU calculations, and per house tariff are still correct in terms of compliance with the housing coming forward within the adopted local plans. The overall number of local plan housing figures in the 0-15km zone are being mitigated for by housing in the 0-8km zone, some of which contributed funds before the MOU, and some after. With the latter being the remaining 8495 used to apportion the remaining cost of the SAMMM after the pre-MOU contributions have

been taken into account. The full housing complement from the adopted local plans within the whole 0-15km zone is being mitigated for.

Current and newly proposed housing figures

3.9 Moving on from this, the scope of this Planning Evidence Base Review includes consideration of the way in which housing projections are changing since adoption of those plans, and that is explained in the following section of this report.

3.10 Housing that has been completed since April 2011, that which is still to come forward (either given permission or for currently undeveloped sites remaining in the adopted plans), and housing that is now anticipated to come forward with the inclusion of additional development sites, emerging options in local plan reviews and windfall rates are summarised in Appendix 4. These data were provided to Footprint Ecology by relevant local authorities in April 2017 (reflecting figures available up to March 2016). These show that housing completed to date, or committed (with permission given or plan allocations yet to come forward) or other expected housing (such as that now in emerging draft local plan sites, windfall allowances) indicate a total of 16,601 within the 0-8km zone and 13,963 within the 8-15km zone, giving a total 0-15km of 30,564 new dwellings.

3.11 We can therefore summarise the housing figures that are now anticipated as follows:

- Revised estimates (provided by local authorities in 2017) reflecting housing completed to date (since 2011), committed housing and that now predicted indicate 30,564 dwellings in the 0-15km zone and 16,601 in the inner 0-8km zone.
- Importantly, these figures are very close to the figures provided to Footprint Ecology that informed the evidence base (see two bullets above in relation to the original housing figures).

3.12 The careful rechecking of all documents and analysis of housing figures therefore enables a conclusion that housing delivery, even taking into account the additional sites, emerging options and windfall, is still in accordance with original estimates in 2012. The differences are small enough to have confidence that the trajectory of housing delivery and mitigation provision is still in-line. At the time of preparing the evidence base,

3.13 Footprint Ecology made predictions of a 15% increase in access and made recommendations for mitigation, which evolved through the advice and additional information in relation to Natural England's consideration of the SAC interest, its condition and what is necessary to achieve the conservation objectives for the site. Natural England and the local authorities agreed a package of mitigation measures based on a 15% increase in housing.

3.14 Footprint Ecology's advice after checking all documentation, analysis, and the housing figures, is that the SAMMM (and wider work being undertaken in conjunction with other stakeholders; Forestry Commission and the AONB) remains fit for purpose and still relevant for the continued delivery of the measures based on the housing numbers anticipated.

3.15 However, recognising the MOU error, the MOU should be updated or a new strategy document produced at an appropriate point in the near future.

3.16 It may also be beneficial to run an audit of large development proposals outside but in close proximity to the 0-15km zone to check that project level HRAs are being undertaken where relevant and that conclusions are consistent with each other and the evidence base. The primary purpose would not be to alter the zone, as this is established through the evidence base, but rather to confirm that the individual HRAs for such developments are consistently assessing the potential for impacts on Cannock Chase, rather than assuming that being outside the zone automatically leads to a conclusion of no likely significant effect.

4. Establishing the capacity of the SAMMM to accommodate housing changes

4.1 This section explores the ability of the SAMMM to adapt to increasing levels of residential growth. As competent authorities, the Cannock Chase SAC Partnership members want to be prepared for the possibility of needing mitigation requirements in order to plan for future growth. By having confidence in an adaptable set of mitigation measures, the authorities are ensuring that housing growth does not exceed mitigation capacity and risk adverse effects on Cannock Chase SAC. This 'health check' on the SAMMM therefore provides that confidence.

4.2 It is helpful to revisit which elements of the SAMMM are flexible and adaptable to expanding housing numbers, and any elements of the SAMMM that are less flexible and more directly related to a fixed capacity. However, this is very much dependent upon the progression of mitigation to date and the monitoring of that mitigation implementation; both formally and informally through staff experience. The mitigation measures set out in the MOU are summarised in Table 3 (above). To date the staff have now been recruited and have recently started in their new roles, and the majority of the on the ground mitigation is still to be delivered. It is anticipated that the non-staff aspects of the SAMMM will make good progress now that the project manager and visitor engagement officer are both in post.

4.3 The measures in the SAMMM have been through an evolution of in-depth analysis and discussion from the original proposals in the evidence base. As explained in the previous section, this progression has involved considerable input from Natural England, but always on the basis that a 15% increase in visitor numbers is anticipated. The final SAMMM is an agreed approach that therefore relates to this scale of change in access. The previous section explains that the evidence base analysed the potential implications of an increase of 30,134 houses within the 0-15km zone to determine the 15% increase. The housing levels now proposed are still close to this figure.

4.4 It is very difficult to set a precise level of mitigation necessary for a defined level of growth, because of the inevitable complexity of estimating the effectiveness of measures for European site habitats that are influenced by a multitude of factors over time. Long term changes relating to climate (which will effect both access and the vulnerability of habitats, e.g. Coombes 2007), trends in access and changes in the economy (with people's disposable income reflecting how they spend their time) are hard to gauge and all relevant. Precisely where the housing comes forward will influence where people visit and how often. In looking at the housing figures now proposed, and assessed in the previous section above, the data is simply split by the inner and outer zone, and location is not defined. The Cannock Chase SAC Partnership are anticipating undertaking further location specific analysis in stage 2 of this review.

4.5 In designing an avoidance and mitigation package, it should be comprehensive enough to have confidence that they adequately meet the recreation increases predicted. That confidence comes from having the following:

- a good range of measures rather than reliance on a small number,
- at least some of the measures that are relatively flexible in terms of how much additional access they can mitigate for, and
- having evidence of their effectiveness and suitability
- having early warning monitoring to trigger adaptations (which themselves should be known and similarly tested).

4.6 The overall package of measures should be sufficient to ensure confidence that adverse effects can be avoided or resolved, and that inevitably means a level of precaution is built into the package.

4.7 The SAMMM is in its early stages of implementation, and on the ground experience and formal monitoring is therefore not yet available to inform a view on its effectiveness. Given that the strategy elements of the SAMMM are yet to be written and the other measures (besides staffing) are yet to be instigated, it is impossible at this stage to set a ceiling for the level of mitigation they might provide over and above housing figures that informed the development of the current SAMMM package. A more in-depth review would therefore be more timely once staff have been in place for a period of time and other measures are being initiated. However, it can at least be identified that from the above bullet point list, the SAMMM has backing evidence, a monitoring programme and a level of flexibility in the extent to which measures are implemented. Measures such as path management, signage, interpretation are adaptable measures that feature in the SAMMM and these can be scaled according to available budget and mitigation need. Monitoring is an important part of the SAMMM, and will be essential to ensure measures can be targeted and fit with the changes that occur on the site.

4.8 What could be lacking is a wider range of measures and an understanding of what adaptations may be possible in light of monitoring raising concerns. It is therefore recommended that additional 'back up' options could be developed to give greater confidence if monitoring gives early warning of habitat deterioration.

4.9 Timely implementation of measures in line with growth is important for preventing adverse effects rather than remedying them. If the monies are collected in proportion to housing growth, then the level of money collected will reflect the amount of development, and the mitigation delivery can therefore be deployed in accordance with the scale of growth. There has been some delay in the implementation of measures and this therefore needs to be rectified once there are dedicated staff in place to take forward the other aspects of the SAMMM.

4.10 Access patterns take some time to become established and there will be a lag between money being collected and housing being occupied and occupants regularly visiting the countryside. As such, while mitigation delivery needs to be timely and in advance of impacts occurring, it should now be possible for mitigation delivery to keep pace with housing change with staff in place to keep an accurate record of project delivery against housing development.

4.11 Whilst the SAMMM has been developed in light of the growth set out in the adopted plans, should housing come forward rapidly, the available budget for mitigation should swell and be directed towards the types of measures that can accommodate additional capacity quite rapidly if projects are expanded. Increased resources can be directed towards path management, signage and interpretation. The SAMMM includes staff resources; the project manager and visitor engagement officer, which are not expandable measures themselves, unless additional staff are taken on board. It is possible to bring in casual staff to undertake engagement relatively quickly, if a need was identified.

SAMM Recommendations

4.12 Given the relative infancy of the strategy and the SAMMM implementation, we recommend that the project manager and the engagement officer need to be in place for some time before any notable changes to the SAMMM are instigated. The two post-holders need to become established and mitigation measures taking place on the ground, with monitoring needs understood and being undertaken. It is suggested that because the mitigation package was developed through considerable analysis and expert opinion, and based on housing figures that are still representative of predicted growth, there should not be an imminent risk to the SAC.

4.13 However, it would be beneficial to plan for the following:

- Additional measures to provide back-up options/contingency in light of monitoring giving early warning of habitat change
- A mechanism for enabling and recording timely implementation of measures alongside growth
- Monitoring will be important. Monitoring results will be able to feed back as to how well the mitigation is working and allow it to be honed, for example highlighting parts of the SAC to focus on
- Preparation for the expansion of adaptive measures if required
- There are also marked changes likely to take place in the future as to how the SAC is managed, given the current consultation relating to grazing management. If grazing was to be introduced, this may well result in some changes in access patterns which will need to be understood and carefully monitored
- At some point in the near future, potentially linked to timing of local plan reviews, and consideration of the Greater Birmingham Housing Market Area needs, the MOU should evolve into a more comprehensive

strategy, potentially similar to the SPD used in Dorset (see the following section below relating to approaches used elsewhere). This is understood by the Partnership and feeds into the planned scope of stage 2 of the review.

- The addition of SANGs design considerations within Green Infrastructure Strategies as they are prepared or updated alongside local plan Review, particularly in view of the Greater Birmingham Housing Market Area, where planning for residential development on a large scale is now imminent, and should be accompanied by appropriate infrastructure planning, including green infrastructure.

4.14 It is understood that the financial targets are close to being reached in some local planning authority areas. This does need to be considered as part of the MOU review noted above, and calculations re-made. In the interim, given that the newly predicted housing figures are not dissimilar to the original evidence base, it is reasonable and justified to continue to collect developer contributions for the SAMMM as agreed in the MOU. A momentum in mitigation delivery with the dedicated staff will similarly trigger monitoring and enable a better picture to be developed in time for the MOU review/update to a strategy.

4.15 These recommendations are made to give confidence that the SAMMM is capable of some element of stretch should monitoring indicate the need for measures to be bolstered in order to prevent adverse effects, or in order to accommodate fluctuations in the rate of housing delivery and fluctuations that may occur as a result of variations in windfall or speculative growth in addition to windfall, but within the parameters of the currently adopted plans. The requirements for new housing numbers being taken forward through plan Review, particularly in response to the Greater Birmingham Housing Market Area need, should form part of the new plan level evidence gathering and HRA work that will support the emerging new plans. This should include a re-evaluation of the currently predicted 15% increase in visitor numbers.

5. Drawing on good practice elsewhere

5.1 This section provides a short overview of relevant best practice undertaken by other local planning authorities who are dealing with the impacts of growth on European sites. It highlights the similarities or differences with the Cannock Chase SAC approach and identifies monitoring and management practice where relevant.

5.2 Strategic mitigation schemes are in place for a number of European sites around the country. Most relate to heathland sites (SAC or SPA) or estuaries (SPAs where wintering waterbirds are the vulnerable interest feature). The various schemes are summarised in Table 4.

5.3 In some areas, schemes have been in place for ten years and have been refined and updated as housing numbers change and new evidence becomes available. In some areas, such as the Suffolk coast, new strategic mitigation schemes are in the process of being agreed and designed, the latter example involving multiple European sites and a range of different local authorities. We draw on the mitigation schemes in place elsewhere and highlight points that might be relevant to Cannock Chase in the table. Of particular relevance in light of recommendations in the previous section above, might be the extensive monitoring programme for Thames Basin Heaths, the rolling programme of mitigation projects for the Dorset Heaths, the range of mitigation measures for the Exe Estuary and the codes of conduct and work with local groups for North Kent. This section provides more detailed information on schemes elsewhere after Table 4 below.

5.4 In noting that the good practice relates to a number of SPAs, it is worth highlighting that Article 4.4 of the European Birds Directive 2009, which is transposed into the Habitats Regulations, requires Member States to strive to avoid the deterioration or pollution of the habitats outside the SPA network that are used by birds listed on Annex 1 of the Directive. The SAC Partnership could add to or complement the SAMMM with analysis of existing Annex 1 bird surveys, or commissioning new surveys where there are gaps, to inform whether measures are necessary to prevent deterioration of habitats for these species. Such measures are likely to complement the SAMMM, but by undertaking this dedicated check, any conflicts can be resolved.

Table 4: Summary table of other strategic mitigation schemes. Hyperlinks are to relevant pages on one of the local authority websites. Initial year is approximate and some schemes have changed over time, e.g. moving from an interim to a full scheme. Anticipated houses is the number of houses within in the zone of influence and anticipated over the current plant period.

Site	No. authorities	Approx initial year	No. houses anticipated	Tariff	Main mitigation Measures	Monitoring	Notes
Dorset Heaths	5	2007	35610	£355 (SAMM only)	Wardens, various infrastructure projects, engagement e.g. Dorset Dogs, SANGs	Sensors, car-park counts, interviews, bird monitoring. See Fearnley & Liley (2014)	Rolling programme of measures to secure continual mitigation.
Thames Basin Heaths	11	2008		£882 for SANG, 1057 for SAMM	Wardens, SANGs	Sensors, car-park counts, interviews, bird monitoring	Tariff example for Bracknell – each authority is different. See Joint Strategic Partnership Board (2008) for background. Comprehensive monitoring programme.
Dawlish Warren	2	2011	3291	£800	Wardens, dog project, interpretation, codes of conduct, byelaw changes, new infrastructure, SANGs.	Visitor numbers, interviews, beach dynamics, petalwort.	See Liley *et al.* (2014) for details. Tariff is for Exe & Dawlish Warren as overlap.
East Devon/ Pebblebed Heaths	2	2011	19529	£149	Wardens, dog project, path maintenance, routing, codes of conduct, dog bins,	Birds, visitor numbers, visitor interviews,	See Liley *et al.* (2014) for details.

Site	No. authorities	Approx initial year	No. houses anticipated	Tariff	Main mitigation Measures	Monitoring	Notes
					education work, awareness raising, SANGs	Southern damselfly	
Exe Estuary	3	2011	28,875	£96	Wardens, dog project, revision of zoning, infrastructure, interpretation, leaflets, codes of conduct, SANGs	Birds, visitor numbers, visitor interviews, bird disturbance	See Liley *et al.* (2014) for details.
Solent (3 European sites)	14	2012		£172	Wardens, dog project, (SANGs)	Car-park counts, visitor interviews, effectiveness of wardens,	See dedicated website for useful background
Ashdown Forest	4	2014		£1170 (SAM only)	Wardens, codes of conduct, community events, dog training programme	Monitoring strategy in prep.	
North Kent (3 European sites)	5	2015	68,000	£223.58	A dog project, wardening, engagement, infrastructure, codes of conduct, review of parking, signage, work with local clubs/groups	Monitoring recommendations included bird disturbance, bird counts and visitor counts.	Number of houses relates to local authority plans as a whole (see Liley & Underhill-Day 2013)

Strategy format and how agreed between partners

5.5 Dorset Heathlands Mitigation is established through a joint SPD (currently covering the period 2015-2020) which has been updated over time. This is a long running strategic mitigation scheme and the joint SPD has changed over time. All the local authorities in South East Dorset have adopted Core Strategies or Local Plans which contain a similarly worded policy that addresses the Dorset Heathland issue. Authorities have different approaches as some collect all monies through CIL while others use a combination of CIL and S106. The joint SPD provides a clear, concise document that sets out all the differences.

5.6 In the Thames Basin Heaths each local authority has produced its own SPD or equivalent relating to the SPA, with a delivery framework (Joint Strategic Partnership Board 2008) providing context and an overview. It is perhaps down to the number of local authorities involved in the Thames Basin Heaths (11 authorities compared to Dorset's 5) that this approach has been followed.

5.7 In South-east Devon, the mitigation strategy has not been formally adopted as an SPD, rather the local authorities have referred to the document in their relative plans and HRA work.

Calculation of tariffs

5.8 There are differences in how the tariff has been calculated and applied. For example, in both the Thames Basin Heaths and Dorset Heaths tariffs are scaled according to the number of bedrooms, whereas for example in Ashdown Forest this has not been the case. In Dorset, there are different changes for houses and flats (flats pay less).

5.9 In Dorset since 2007 there has been a joint approach to strategic access management, such that the same tariff was applied across local authorities. This tariff was largely used to fund a cross-boundary wardening and engagement team, the Urban Heaths Partnership. In the current approach, the SAMM costs vary across authorities. In the current strategy. there is still funding directly towards the Urban Heaths Partnership which acts as the overall coordinating element of SAMM, but each authority is also responsible for day-to-day management of sites within their area. This means that the tariff is different for each authority.

Mitigation Measures

5.10 Various documents (Liley & Underhill-Day 2013; Liley & Tyldesley 2013; Ross *et al.* 2014) have reviewed potential mitigation measures and considered a 'long-list' of options, from which key measures are selected that are appropriate to the site, issues and scale of development.

5.11 Visitor engagement is a common theme of the mitigation strategies. The Thames Basin Heaths Partnership website is a good example of engagement and promotion of the mitigation work. The website has partly come about as a result of recognition that the alternative greenspace and other mitigation measures were only being promoted on individual local authority websites without any single source for people to identify nearby countryside sites. Terminology such as "SANGs" means little to people looking for where they can walk, and so a need for a gazetteer and overview was clear. Another, in some ways similar example, is Dorset Dogs, which has an easy to use, accessible and regularly updated website providing information on where to go in the countryside. This has been funded through developer contributions. On the Solent, a dedicated website call Bird Aware provides easily accessible information for the public relating to where to go, how to behave etc. The website showcases the work of the warden team and is part of the engagement package.

Monitoring

5.12 Monitoring is important to provide early warning of issues and to hone mitigation measures. Access patterns can change over time, for example locations can become more popular or the balance of activities can change. Monitoring is integral to the mitigation as it ensures mitigation can adapt to changing circumstances and resolve issues as they emerge. Strategies with good practice in relation to meaningful monitoring are discussed below.

5.13 Some strategic mitigation schemes have dedicated monitoring strategies, for example the Dorset Heaths (Fearnley & Liley 2014), the Thames Basin Heaths (Underhill-Day *et al.* 2008) and the Solent (Liley *et al.* 2015). On the Dorset Heaths, the monitoring undertaken has changed over time. The original strategy (Liley 2007) set out the foundation for monitoring which has adapted over time in relation to available resources, staff time etc. Each year a short monitoring report is produced which summarises results for the year and emerging trends (e.g. Panter & Liley 2016). Detailed analysis however has not yet been undertaken, for example relating housing change to changes in access.

5.14 On the Dorset Heaths, Thames Basin Heaths and the Solent, car-park counts are a foundation of the monitoring. The approach has also been used at a range of other sites such as the East Devon Heaths (Liley, Panter & Underhill-Day 2016), the Humber (Fearnley, Liley & Cruickshanks 2012) and Ashdown Forest (Footprint Ecology *in prep*). Car-park counts provide a simple means of counting visitors (at least those arriving by car), are repeatable and do not require specialist skills. Given that there is a relatively small amount of land directly adjacent to European sites compared to further away, the majority of new housing will be at distances whereby people will drive. Furthermore, at both the heathland sites there is a 400m constraint zone around the European site, and therefore it is to be expected that the amount of housing change

within easy walking distance of the heaths will be minimal. Counting people who arrive by car is therefore a useful measure of change over time. On the Solent, where the car-parks are typically along the seawall or overlooking the beach/mudflats, counts of people (and dogs) visible from fixed points are also included in the count methodology. In all cases counts of parked vehicles allow separate totals for the number of vehicles with bike racks, the number of branded professional dog walker vehicles, the number of campervans etc.

5.15 The counts are undertaken by a team of surveyors, ensuring that each car-park around the European site is visited within a fixed period (roughly two hours in all cases). The size of the team varies, for example six different people are required for the Thames Basin Heaths while at Ashdown Forest all car-parks could be checked by a single surveyor within a two-hour window. Counts are repeated at standard times each year, e.g. starting at 9am on the second Tuesday in March to allow direct comparison. Counts include bank holidays, weekends and weekdays and a range of times during the day. With multiple years of data, it is possible to identify which individual car-parks have changed and how numbers of visitors overall have changed.

5.16 Car-park counts provide an overview of visitor numbers arriving by car across the whole site. Typically, most sites also have a large number of foot-only access points, many of which often have low levels of use, depending on the number of people living within walking distance. Automated sensors are useful measures of recording access at such locations and also within sites. Such sensors can include pressure pads (buried in the ground) and infra-red beams or heat-sensitive devices that can be set in fence-posts or similar. The choice of unit depends on the location, types of access and resources (for discussion see Cessford, Cockburn & Douglas 2002; The Access Company 2006). All such sensors require calibration and regular checking. Some counters can send data over mobile networks and therefore do not need regular downloading, but where mobile signal is lacking data may need to also be extracted from the device at regular intervals. Few counters can record the direction that people travel, so calibration is necessary. Calibration allows the number of counter registrations to be converted to a value for the number of people likely to have passed. Some paths may tend to be used by people heading in a particular direction, and the proportion 'entering' and 'leaving' via such access points may be different. Furthermore, counters need to be checked for how accurately they record visitor numbers. Many counters will be triggered by dogs as well as people, some may not record people when the walk side-by-side and so direct observation is important to ensure the data collected can be used effectively.

5.17 Given the resources and cost implications of such counters, they are best used at a small sample of locations, providing detailed data over a long time period. In Dorset, the number of sensors rose to nearly 100 and has since been steadily scaled back to around 50, a level which is sustainable in the long-term. The data provide counts by

the hour, and therefore can show how visitor numbers change with time of day, by month and across years. For Cannock, we would suggest far fewer than 50 sensors would be appropriate, as the Dorset Heaths are made up of numerous small sites scattered over a wide area, different to the more discrete tract of heathland at Cannock Chase.

5.18 One off counts of visitors can be a supplement to both car-park counts and automated counts. Surveyors can stand in a single location and record the number of people passing. Such an approach requires considerable staff resources, but can be undertaken alongside visitor interviews, where additional data are collected.

5.19 Visitor interviews provide the means to gather data on:

- Visitor origins (home postcodes)
- Group size (allowing car-park counts to be scaled up to total visitors)
- Mode of transport
- Reasons behind site choice (useful in relation to promotion of other sites and targeting on-site access management)
- Routes undertaken (useful in relation to on-site management)
- Awareness of conservation issues, mitigation measures etc.

5.20 Such surveys have formed the basis for mitigation schemes to be established (e.g. Clarke *et al.* 2006; Liley, Jackson & Underhill-Day 2006; UE Associates 2009; Clarke, Sharp & Liley 2010; Fearnley, Clarke & Liley 2010). At Ashdown Forest (Footprint Ecology in prep) and Thames Basin Heaths (Fearnley & Liley 2013) repeat surveys have provided the opportunity to update the mitigation scheme and, for example, provide checks on the zone of influence and changes over time. On the East Devon Pebblebed Heaths, targeted visitor survey work (Liley, Panter & Underhill-Day 2016) was commissioned to help refine the mitigation measures within the strategy and was one of the elements within the overarching strategy (which covered three European sites in total).

5.21 Given that there were some issues with the previous Cannock visitor survey in terms of sampling and the data collected (see Liley 2012), there would be merit in a new survey at Cannock Chase, set up with a more rigorous approach to sampling and data collection, such that overall visitor numbers can be estimated and direct comparisons made between different parts of the site.

5.22 The nature conservation interest of key sites is monitored as part of the different mitigation strategies, such data is important as it highlights and marked shifts in distribution or abundance, allowing mitigation to be honed or shifted as necessary. For some SPA sites such monitoring is routinely undertaken by volunteers, for example through the BTO WeBS counts. On the Dorset Heaths and Thames Basin Heaths annual monitoring of birds takes place, funded through the developer contributions.

On the Dorset Heaths the bird monitoring reflects a sample of locations (1km squares) rather than the whole SPA whereas in the Thames Basin Heaths it is the whole SPA that is monitored. At Dawlish Warren monitoring covers erosion, vegetation change and targeted monitoring of Petalwort, one the interest features of the SAC.

6. Evidence gaps and recommendations for monitoring at Cannock Chase

6.1 This section makes recommendations for further evidence gathering and monitoring and seeks to identify the objectives of the range evidence gathering options recommended.

6.2 This report has focussed on the levels of growth within the adopted plans, having regard for some element of stretch within those parameters. Following from the previous section, here consideration is now given to where there are key evidence gaps and how they could be filled, in order to not only function as monitoring for the current SAMMM approach, but also to develop robust evidence to support future local plan preparation and the associated plan level HRA work. This is in recognition of the potential for notable changes to housing numbers in response to the Greater Birmingham Housing Market Area requirements, and other potential housing pressures. The need for further supporting evidence to enable Stage 2 of the review to proceed, and continue to build on the evidence base that underpins the continued and evolving strategic approach for Cannock Chase SAC is recognised by the SAC Partnership. This section provides advice on the survey work that should be established to inform Stage 2.

6.3 The costs in Table 3 are for SAMMM monitoring, and are paid for by developers in order to mitigate for the effect of new development. Measures over and above this for the refreshed evidence base to inform plan reviews are not directly for SAMMM purposes, but rather they are to inform the next plan level HRAs. Obviously, there is considerable overlap and the SAMMM monitoring will inform the plan Review evidence, and the plan review evidence will inform SAMMM monitoring, and there may also be ways of meeting SAMMM monitoring and plan Review requirements in more cost-efficient ways by combining the work programme for some elements. The recommendations within this section also relate to further assisting with the delivery of SAMMM, particularly in relation to the overarching strategy for visitors, the specific strategy for car parking, and the monitoring strategy.

6.4 Despite the overlaps and potential opportunities to maximise beneficial outputs and make efficiencies in taking forward the evidence gathering activities by combining where possible, it is advised that the two objectives for evidence gathering should be clearly identified as separate, even if running in conjunction with each other. The Partnership may therefore wish to put in place a means by which the purpose of each is agreed and recorded.

6.5 It is suggested that the following are themes/work areas for data collection to inform the plan Reviews and monitoring to inform the SAMMM to be targeted. Data relating to visitor numbers will enable the 15% visitor increase predicted for growth within the

currently adopted plans to be revisited. Data relating to visitor profile, preferences and behaviour gained from the visitor surveys will primarily form the basis for the visitor and monitoring strategy, which should function to ensure that monitoring is integrated into all aspects of SAMMM delivery. This information will however be of benefit to the stage 2 review. Car park counts will provide useful data for both stage 2 and for the car park strategy. Habitat monitoring should feed into the monitoring strategy for the purpose of providing early warning that SAMMM measures need to be refined in order to prevent adverse effects on site integrity.

Car-park counts

6.6 Previous visitor survey work (see Liley 2012) included car-park counts, but the data were limited in terms of the number of counts and temporal coverage. Regular car-park counts should be established to collect data on visitor numbers and the distribution of visitors. Car-park counts provide the best approach to recording how levels of use and distribution of access change over time. With data from a number of years it will be possible to look at trends across years and variation within years (e.g. holiday periods and seasonal variation).

6.7 Such transects should be repeated in a standard way each year. A minimum of 15 transects per year should be undertaken (broadly in line with Dorset and the Thames Basin Heaths) and these should cover a range of times of day, days of the week and times of year. Repeats in future years will need to match the times of day and dates as closely as possible (e.g. always the first Tuesday in March at 0800) and care should therefore be taken with timing transects around holiday periods that vary between years (such as Easter).

6.8 Each transect should involve a single person driving round all car-parks and recording the number of parked vehicles at each location. The transect should be completed in a reasonably short (and consistent) time window. The data will provide a baseline and the repeats each year will show how access (visitors coming by car) is changing over time. These should be established immediately (limited budget necessary as they are not expensive to undertake).

Automated counters

6.9 A small number of automated counters should be established, calibrated and regularly checked. Counters can be buried pressure pads or infra-red beams or heat-sensitive devices that can be mounted inside gate posts. The counters provide data on an hourly basis and run indefinitely, providing large volumes of data for a very specific location. The aim for deploying these should be to provide data from a small sample of locations over an extended time period stretching many years. This will pick up

detailed trends in access that can be cross-referenced to the car-park count data and the counters will pick up both foot and car visitors.

6.10 Some counters could be within the site rather than at access points. Around ten counters would probably provide a good initial basis, this could be supplemented over time (depending on resources and data gaps). The cost of setting these up could be spread over one or two years.

Visitor Survey

6.11 An overall visitor survey of the SAC would involve direct counts of people passing and interviews with a random sample of people. Such a survey would provide information on:

- visitor numbers (e.g. group sizes for those arriving by car, allowing car counts to be scaled up);
- views on management;
- success of mitigation (e.g. proportion of visitors that have spoken to a warden or read interpretation);
- awareness of impacts (helpful to target mitigation);
- more detail on home postcodes (allowing the potential to map visitor origins and link to other data, for example socio-economic data);
- routes within the site;
- general visitor patterns, allowing comparison of change over time.

6.12 The survey does not need to be overly ambitious, but should be carefully planned so as to be robust and to provide repeatable, comparable data. It is not necessary to repeat the previous survey, the new survey should instead supplement the previous work and be closely linked to mitigation delivery, helping to identify engagement opportunities and test the success of mitigation approaches. A standard set of core questions can be established that can be repeated in future surveys and allow direct comparison over time, while other questions could be one-off, providing information on key aspects of mitigation, for example to coincide with work on the parking strategy or interpretation.

6.13 We suggest potentially up to 20 survey points, each surveyed for 16 hours in total in line with surveys in other locations (e.g. Liley, Panter & Underhill-Day 2016). This would generate (depending on the locations, weather and time of year) potentially around 300-600 interviews. Surveys should potentially be timed when access is likely to have the most impact on the SAC and should ensure a reasonable sample of visitors (i.e. matching the range of visitors, activities etc.). This could potentially be achieved by surveying during the autumn, winter or spring, with a selection of locations repeated or additional locations covered during the summer (when visitor numbers peak and

visitors are likely to involve holiday-makers and people on extended day-trips from further afield).

6.14 Locations could be chosen based on initial results from the car-park transects, ensuring that a range of types of parking locations were chosen with varying levels of use (potentially avoiding locations where very few or no interviews would be achieved) and good geographical spread.

6.15 Surveys could be undertaken by volunteers; however interviewing visitors is a skill and the surveys do require long hours of survey work. Organising such surveys is a logistical challenge and a survey by professionals is likely to ensure a survey that is robust and repeatable.

Habitat monitoring

6.16 Habitat monitoring would require detailed consideration and careful planning to ensure compatibility with on-going monitoring and condition assessment. Given the potential changes on the site in the future with respect to grazing and other monitoring being established (e.g. in relation to events) careful design of habitat monitoring will be essential. Potential elements could include:

- Fixed point photography to record changes on paths
- Measurements of path width, soil compaction, gullying and vegetation at fixed points
- Soil samples to record levels of eutrophication, soil bacteria/mycorrhizae at fixed points
- Vegetation monitoring.

Towards a monitoring strategy: priorities for monitoring

6.17 Drawing from the above, we suggest the following as priorities and a chronology for monitoring:

1. Establish transects to count parked cars, to start in the early autumn 2017, with transects running through the year. Some initial data would then be available for stage 2.
2. Visitor survey data would ideally be available to inform stage 2, and would therefore be needed for the spring 2018; the survey should be timed to maximise information on mitigation approaches, and therefore would be best timed once mitigation (e.g. engagement) had commenced. Assuming autumn 2017 is too soon to commission such work, then the survey should potentially be timed for the early spring 2018, if that allows for some data to be collected in time to inform stage 2.
3. Alongside the setting up of the visitor survey, the monitoring strategy should be set out, ensuring resources were appropriately targeted and monitoring dovetailed to mitigation delivery. The monitoring strategy should ensure that all

data gathered, including that primarily for stage 2 review, is effectively used to inform delivery of the SAMMM. Data gathering should be integrated, i.e. outputs should be used to inform optimal locations, timing etc for other data gathering requirements (car park counts may inform suitable locations for visitor surveys, for example).

4. Automated counters should be established as budget allows and could be pushed back to later years if necessary.
5. Habitat monitoring should ideally record a baseline prior to changes taking place, but this may not necessarily be straightforward and will require careful design and setting-up, based on recommendations in the monitoring strategy. Habitat monitoring could be staggered with other monitoring elements and repeat surveys set back in time if possible/as necessary.

7. Conclusions and Next Steps

7.1 This Planning Evidence Base Review checks whether the SAMMM is still fit for purpose in light of predicted fluctuations in housing delivery. Revisiting the original evidence base and the evolution of the approach has highlighted the following:

- The reports that make up the original evidence base used housing figures provided by the local planning authorities that still accord with current and newly predicted housing delivery figures
- There is an error in the MOU in relation to housing allocations for the outer 8-15km zone
- The SAMMM has not yet significantly progressed, but prioritisation given to staff recruitment should now enable momentum to be gained in the delivery of the SAMMM.

7.2 This Planning Evidence Base Review has concluded that there are significant difficulties in undertaking a health check on the SAMMM at this point in time in the absence of on the ground experience and monitoring. A full review of the MOU and upgrade to a more comprehensive strategy in the near future, would be more timely once staff are in post and the local planning authorities prepare for their local plan reviews in light of the Greater Birmingham Housing Market Area considerations and other potential housing growth pressures. This will require new plan level HRAs, and it would be beneficial to begin to plan for these requirements now. The Cannock Chase SAC Partnership is fully aware of this need and has built this into stage 2 of the review, requiring this initial stage to give a sense check on the current situation. Section 6 provides recommendations for evidence gathering that both assist with SAMMM monitoring, and prepare for forthcoming new plan level HRA needs. It is anticipated that the SAC Partnership will now develop the scope of stage 2 further in response to this stage 1 report.

7.3 As noted in section 4, SANGs provision does not currently form part of the SAMMM, and there are reasons for this approach. However, the Greater Birmingham Housing Market Area requirements may be such that this position needs to be rechecked. Infrastructure provision, including green infrastructure, should be a key consideration for the work now underway to assess housing need and strategic locations to meet this need. It is advised that the SAC Partnership should seek opportunities to inform that assessment work of the need to have regard for the risks posed to Cannock Chase SAC from additional housing growth, and the importance that open space provision, location and design may play in reducing those risks. The published methodology for the assessment work gives minimal reference to green infrastructure. As noted in secton 4, this will also be a consideration for Green Infrastructure Strategies that form part of new local plans.

7.4 This report advises that the current approach remains fit for purpose for the growth within adopted local plans, having regard for the potential for some fluctuations in rate of delivery or fluctuations in the levels of windfall and speculative proposals that are still within the parameters of the current local plans. The local authorities can continue to have confidence that adverse effects from the predicted housing growth figures, and fluctuations can still be adequately mitigated for, drawing on the ability for some SAMMM measures to stretch in response to monitoring. However, a number of recommendations are made in light of the current situation and reference to good practice elsewhere. These include:

- Planning for additional measures to provide back-up options/contingency in light of monitoring giving early warning of habitat change
- Developing a mechanism for enabling and recording timely implementation of measures alongside growth
- Prioritisation of monitoring once staff are in place, in preparation for the other aspects of the SAMMM being implemented. Monitoring should start with collation of baselines and then results will be able to feed back as to how well the mitigation is working and allow it to be honed if necessary to continue to ensure no adverse effects on the SAC.
- Preparation for the expansion of adaptive measures if required in light of fluctuations
- Consideration of changes likely to take place in the future as to how the SAC is managed, given the current consultation relating to grazing management.
- Drawing on good practice elsewhere to inform the above.

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Appendix 1: HRA process

8.1 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2010, as amended, which are commonly referred to as the 'Habitats Regulations.' Recent amendments to the Habitats Regulations were made in 2012.

8.2 The Habitats Regulations are in place to transpose European legislation set out within the Habitats Directive (Council Directive 92/43/EEC), which affords protection to plants, animals and habitats that are rare or vulnerable in a European context, and the Birds Directive (Council Directive 2009/147/EC), which originally came into force in 1979, and which protects rare and vulnerable birds and their habitats. These key pieces of European legislation seek to protect, conserve and restore habitats and species that are of utmost conservation importance and concern across Europe. Although the Habitats Regulations transpose the European legislation into domestic legislation, the European legislation still directly applies, and in some instances, it is better to look to the parent Directives to clarify particular duties and re-affirm the overarching purpose of the legislation.

8.3 European sites include Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) classified under the Birds Directive. The suite of European sites includes those in the marine environment as well as terrestrial, freshwater and coastal sites. European sites have the benefit of the highest level of legislative protection for biodiversity. Member states have specific duties in terms of avoiding deterioration of habitats and species for which sites are designated or classified, and stringent tests have to be met before plans and projects can be permitted, with a precautionary approach embedded in the legislation, i.e. it is necessary to demonstrate that impacts will not occur, rather than they will. The overarching objective is to maintain sites and their interest features in an ecologically robust and viable state, able to sustain and thrive into the long term, with adequate resilience against natural influences. Where sites are not achieving their potential, the focus should be on restoration.

8.4 The UK is also a contracting party to the Ramsar Convention, which is a global convention to protect wetlands of international importance, especially those wetlands utilised as waterfowl habitat. In order to ensure compliance with the requirements of the Convention, the UK Government expects all competent authorities to treat listed Ramsar sites as if they are part of the suite of designated European sites, as a matter of government policy, as set out in Section 118 of the National Planning Policy Framework. Most Ramsar sites are also a SPA or SAC, but the Ramsar features and boundary lines may vary from those for which the site is designated as a SPA or SAC.

8.5 It should be noted that in addition to Ramsar sites, the National Planning Policy Framework also requires the legislation to be applied to potential SPAs and possible SACs, and areas identified or required for compensatory measures where previous plans or projects have not been able to rule out adverse effects on site integrity, yet their implementation needs meet the exceptional tests of Regulation 62 of the Habitats Regulations, as described below.

8.6 The step by step process of HRA is summarised in the diagram below. Within the Habitats Regulations, local planning authorities, as public bodies, are given specific duties as 'competent authorities' with regard to the protection of sites designated or classified for their species and habitats of European importance. Competent authorities are any public body individual holding public office with a statutory remit and function, and the requirements of the legislation apply where the competent authority is undertaking or implementing a plan or project, or authorising others to do so. Regulation 61 of the Habitats Regulations sets out the HRA process for plans and projects, which includes development proposals for which planning permission is sought. Additionally, Regulation 102 specifically sets out the process for assessing emerging land use plans.

8.7 The step by step approach to HRA is the process by which a competent authority considers any potential impacts on European sites that may arise from a plan or project that they are either undertaking themselves, or permitting an applicant to undertake. The step by step process of assessment can be broken down into the following stages, which should be undertaken in sequence:

- Check that the plan or project is not directly connected with or necessary for the management of the European site
- Check whether the plan or project is likely to have a significant effect on any European site, from the plan or project alone
- Check whether the plan or project is likely to have a significant effect on any European site, from the plan or project in-combination with other plans or projects
- Carry out an 'appropriate assessment'
- Ascertain whether an adverse effect on site integrity can be ruled out

8.8 Throughout all stages, there is a continual consideration of the options available to avoid and mitigate any identified potential impacts. For projects, the project proposer may identify potential issues and incorporate particular avoidance measures to the project, which then enables the competent authority to rule out the likelihood of significant effects. A competent authority may however consider that there is a need to undertake further levels of evidence gathering and assessment in order to have certainty, and this is the appropriate assessment stage. At this point the competent authority may identify the need to add to or modify the project in order to adequately protect the European site, and these mitigation measures may be added through the imposition of particular restrictions and conditions.

8.9 For plans, the stages of HRA are often quite fluid, with the plan normally being prepared by the competent authority itself. This gives the competent authority the opportunity to repeatedly explore options to prevent impacts, refine the plan and rescreen it to demonstrate that all potential risks to European sites have been successfully dealt with.

8.10 When preparing a plan, a competent authority may therefore go through a continued assessment as the plan develops, enabling the assessment to inform the development of the plan. For example, a competent authority may choose to pursue an amended or different option where impacts can be avoided, rather than continue to assess an option that has the potential to significantly affect European site interest features.

8.11 After completing an assessment, a competent authority should only approve a project or give effect to a plan where it can be ascertained that there will not be an adverse effect on the integrity of the European site(s) in question. To reach this conclusion, the competent authority may have made changes to the plan, or modified the project with restrictions or conditions, in light of their Appropriate Assessment findings.

8.12 Where adverse effects cannot be ruled out, there are further exceptional tests set out in Regulation 62 for plans and projects and in Regulation 103 specifically for land use plans. Exceptionally, a plan or project could be taken forward for imperative reasons of overriding public interest where adverse effects cannot be ruled out and there are no alternative solutions. It should be noted that meeting these tests is a rare occurrence and ordinarily, competent authorities seek to ensure that a plan or project is fully mitigated for, or it does not proceed.

8.13 In such circumstances where a competent authority considers that a plan or project should proceed under Regulations 62 or 103, they must notify the relevant Secretary of State. Normally, planning decisions and competent authority duties are then transferred, becoming the responsibility of the Secretary of State, unless on considering the information, the planning authority is directed by the Secretary of State to make their own decision on the plan or project at the local level. The decision maker, whether the Secretary of State or the planning authority, should give full consideration to any proposed 'overriding reasons' for which a plan or project should proceed despite being unable to rule out adverse effects on European site interest features, and ensure that those reasons are in the public interest and are such that they override the potential harm. The decision maker will also need to secure any necessary compensatory measures, to ensure the continued overall coherence of the European site network if such a plan or project is allowed to proceed.

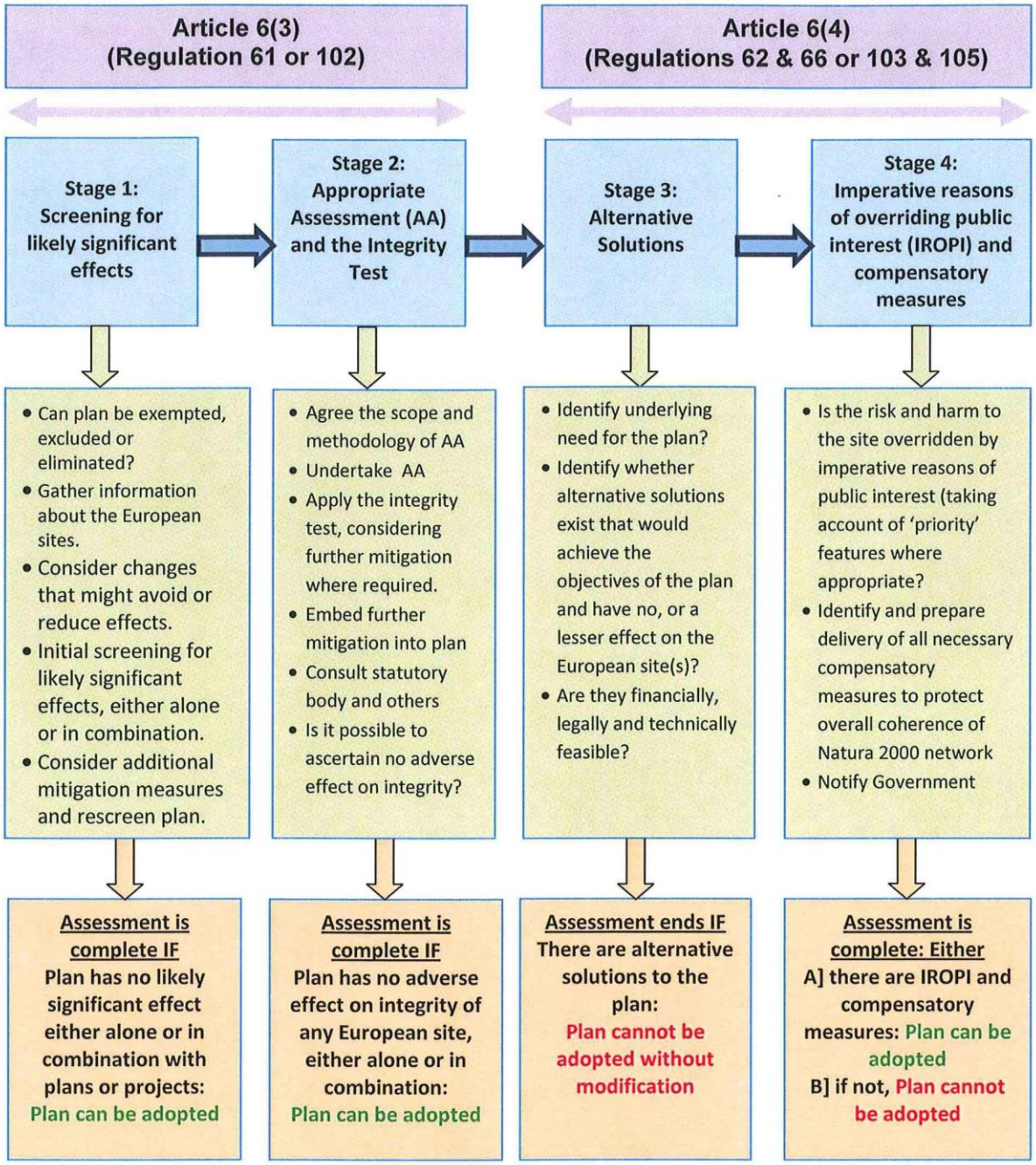

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Figure 1: Outline of the assessment of plans under the Habitat Regulations

8.14 In assessing the implications for European sites of any plan or project, research and evidence gathering underpinning the assessment usually consists of three types of information:

- The European sites
- The plan or project
- Potential impacts

8.15 In order to assess the implications of a plan or project for European sites, it is necessary to fully understand the European sites in question, to establish whether site features could potentially be affected.

8.16 It is also necessary to appreciate the purpose and objectives of the plan or project, to understand its constituent parts, how and when it will be implemented, and what may occur as a consequence of its implementation. A further evidence gathering requirement relates to any information that may assist with establishing and assessing the potential impacts that may occur. This may be locally specific information, or relevant evidence from elsewhere that can contribute to the understanding of potential impacts. This could include for example, studies on similar species, habitats or impacts in different locations, or the monitoring of mitigation approaches elsewhere that may be applicable. Previous HRA work that relates to the plan or project links with the evidence gathered on potential impacts, as previous assessment work will highlight what was previously considered a potential risk, and how such impacts were mitigated for.

8.17 Potential impacts are the link between the plan or project and the European sites. The HRA is assessing an 'interaction' between the plan or project, and the European site features. For this reason, the link is very often referred to as the 'impact pathway.' They are the route by which a plan or project may affect a European site (Figure 2).

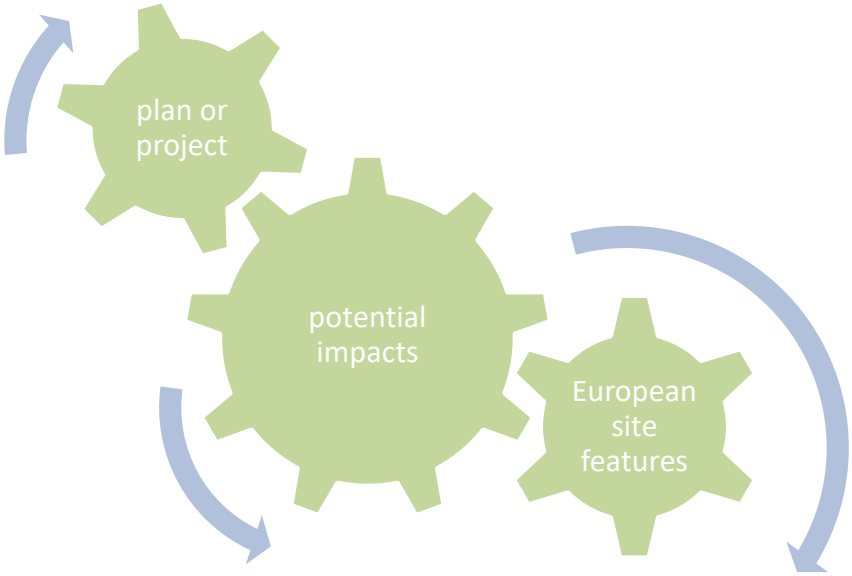

Figure 2: Impact Pathways

Appendix 2: Cannock Chase SAC Conservation Objectives

8.18 As required by the European Directives, 'Conservation Objectives' have been established by Natural England, which should define the required ecologically robust state for each European site interest feature. All sites should be meeting their conservation objectives. When being fully met, each site will be adequately contributing to the overall favourable conservation status of the species or habitat interest feature across its natural range. Where conservation objectives are not being met at a site level, and the interest feature is therefore not contributing to overall favourable conservation status of the species or habitat, plans should be in place for adequate restoration.

8.19 Natural England is progressing a project to renew all European site Conservation Objectives, in order to ensure that they are up to date, comprehensive and easier for developers and consultants to use to inform project level Habitats Regulations Assessments in a consistent way. In 2012, Natural England issued now a set of generic European site Conservation Objectives, which should be applied to each interest feature of each European site. These generic objectives were the first stage in the project to renew conservation objectives, and the second stage, which is to provide more detailed and site specific information for each site to support the generic objectives, is now underway. This site-specific information is referred to as 'Supplementary Advice.'

8.20 The new list of generic Conservation Objectives for each European site includes an overarching objective, followed by a list of attributes that are essential for the achievement of the overarching objective. Whilst the generic objectives currently issued are standardised, they are to be applied to each interest feature of each European site, and the application and achievement of those objectives will therefore be site specific and dependant on the nature and characteristics of the site. The second stage, providing the Supplementary Advice will underpin these generic objectives with much more site-specific information.

8.21 Whilst the Supplementary Advice has been prepared for a number of European sites, it is currently still not available for Cannock Chase SAC. Once finalised, this site-specific detail will play an important role in informing future HRAs, giving greater clarity to what might constitute an adverse effect on a site interest feature.

8.22 In the interim, Natural England advises that HRAs should use the generic objectives and apply them to the site-specific situation. This should be supported by comprehensive and up to date background information relating to the site.

8.23 For SPAs, the overarching objective is to:

8.24 'Avoid the deterioration of the habitats of qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.'

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

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

8.26 For SACs, the overarching objective is to:

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

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

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

8.28 This HRA therefore has regard for the generic SAC related objectives. Conservation objectives inform HRAs by identifying what the interest features for the site should be achieving, and what impacts may be significant for the site in terms of undermining the site's ability to meet its conservation objectives.

Appendix 3: Housing data from 2011 used in the evidence base

8.29 In the following table, we summarise the housing data used in the 2012 visitor survey report, showing the numbers of existing houses in 2011, within the 0-15km zone.

Distance from SAC (km)	Cannock Chase	East Staffordshire	Lichfield District	South Staffordshire	Stafford Borough	Walsall	Wolverhampton	Total
0-1	2888			18	1179			**4085**
1-2	5585			538	1729			**7852**
2-3	12,708		1	1491	3221			**17,421**
3-4	10,269	0	251	496	2643			**13,659**
4-5	4995	45	1008	275	6755			**13,078**
5-6	2737	42	4455	2185	7115			**16,534**
6-7	2044	26	5954	4166	6266			**18,456**
7-8	69	166	4315	4259	4107	539		**13,455**
8-9	18	517	446	1348	1301	1322		**4952**
9-10	1	59	2160	780	361	2884		**6245**
10-11		214	5692	2137	720	6783		**15,546**
11-12		196	5232	3321	556	10,796	90	**20,191**
12-13		778	3074	1086	711	12,584	4540	**22,773**
13-14		567	1928	682	3366	13,463	10,684	**30,690**
14-15		1654	1198	251	4022	12,910	12,881	**32,916**
Total 0-7km bands	41,226	113	11,669	9169	28,908	0	0	**91,085**
Total 8-15km bands	88	4151	24,045	13,864	15,144	61,281	28,195	**146,768**
Overall Total	**41,314**	**4264**	**35,714**	**23,033**	**44,052**	**61,281**	**28,195**	**237,853**

Appendix 4: Housing data summary provided by local authorities in April 2017

8.30 The data in the following table were provided to Footprint Ecology on 5th April 2017.

8.31 The following note accompanied the data:

This note has been prepared to assist with the Cannock Chase SAC Partnership – Planning Evidence Base Review, which Footprint Ecology have been commissioned to prepare.

The brief sets out a number of questions, the purpose of this note is to provide the background data required to answer the following question:
2: Compare Evidence Base predicted rates of housing delivery with current rates of delivery and assessing where this delivery is located (in which zone): are there significant differences between prediction and delivery? What might the implications of this be?

The aim of the question above is to ascertain whether building x homes in the 0-8km zone and y homes in the 8-15 km zone in the foreseeable future will require more SAC mitigation than we are already planning for.

The most up to date position of this data is March 2016. The SAC Partnership do not for this stage 1 piece of work consider that the exact location of housing developments is required, only the number of completions in the 0-8 and 8-15 zone from April 2011 to March 2016.

Once the report is complete (May 2017) and we know how near we are to reaching the capacity of the SAMMM (or not) etc then the SAC Partnership will update figures annually. The location data for housing will be required for the stage 2 piece of work, when this is commenced in the future.

The table below sets out how much housing is committed in each zone for each authority. This includes permissions and housing allocations, which should be treated as one form of 'current rate of delivery'. For most authorities, this total is different to the previously predicted supply as at 2011 asset out in the MoU. There are numerous reasons for this; at 2011 not all Local Plans were adopted and the figures previously reported were subject to change, figures in Local Plans represent 'minimum figures' and planning appeals have been allowed in addition to Local Plan figures.

Local authority	Zone	No. net new homes completed since April 2011 (excl sites with full planning permission before April 2011)	No. net new homes within current planning permissions and adopted local plan allocations as of March 2016 (excl sites with full planning permission before Apr 2011)	Total (counted towards MOU target)	Any other committed capacity – including explanation (e.g. draft local plan sites, windfall allowances)	Potential total
Stafford Borough Council	0-8 km	377	8128 (3553 + 2625 North Stafford SDL + 1950 West Stafford SDL) Note: includes sites of less than 10 units	**8505**	**0**	**8505**
	8-15 km	403	2597	**3000**	**0**	**3000**
Cannock Chase Council	0-8 km	239	2701 (inc 1441 on 3 sites mitigating on site*approx. 80 dwellings of 897 dwelling scheme at land West of Pye Green Road local plan allocation do not have planning consent to date)	**2940**	**1020** SHLAA sites* note: SHLAA assumes non-implementation rate equivalent to approx. 170 dwellings so 1,020 is likely to be maximum capacity. No capacity assumed for Rugeley Power Station to date This cross boundary site, which straddles both Cannock Chase and Lichfield district is in the early stages of details being worked up. CCDC has therefore not assumed a figure yet for its own section of the site, but LDC's SHLAA woks differently so they have applied an indicative capacity for their own section. Both authorities are, however, working together with the site owners and agents to develop a joint SPD and further information will be forthcoming in due course	**3960**

Local authority	Zone	No. net new homes completed since April 2011 (excl sites with full planning permission before April 2011)	No. net new homes within current planning permissions and adopted local plan allocations as of March 2016 (excl sites with full planning permission before Apr 2011)	Total (counted towards MOU target)	Any other committed capacity – including explanation (e.g. draft local plan sites, windfall allowances)	Potential total
					It should also be noted that CCDC is currently testing (through Local Plan Part 2) whether it is able to accommodate a further 1000 homes above its current requirements within the plan period to help address a wider housing market shortfall but no commitment has been made to this at this point, we are just testing the possibility. The 1,000 additional homes could potentially be partly absorbed via the 3,960 capacity identified above, but it would most likely involve identifying additional supply over and above this existing capacity (circa minimum of additional capacity of 300-400 dwellings).	
	8-15 km	0	0	**0**	**0**	**0**
South Staffordshire Council	0-8 km	297	465	**762**	**168** Preferred options SAD excl safeguarded land	**930**
	8-15 km	80	77	**157**	**158** Preferred options SAD excl safeguarded land	**315**
	0-8 km	69	1950	**2019**	**1154** Rugeley Power Station	**3173**

Local authority	Zone	No. net new homes completed since April 2011 (excl sites with full planning permission before April 2011)	No. net new homes within current planning permissions and adopted local plan allocations as of March 2016 (excl sites with full planning permission before Apr 2011)	Total (counted towards MOU target)	Any other committed capacity – including explanation (e.g. draft local plan sites, windfall allowances)	Potential total
Lichfield District Council	8-15 km	104	4924 (inc 1350 at south Lichfield SDA's mitigating on site)	**5028**	**0**	**5028**
East Staffordshire Borough Council	0-8 km	9	0	**9**	**20 - windfall**	**30**
	8-15 km	3	669	**672**	70 – windfall	**742**
Wolverhampton Council	8-15 km	215	964	**1179**	**0**	**1179**
Walsall Council	0-8 km	0	4	**4**	**0**	**4**
	8-15 km	579	1646	**2225**	**1246** Submission SAD Allocations	**3471**
Total	**0-8 km**	991	13,248	**14,239**	**2362**	**16,601**
	8-15 km	1384	10,877	**12,261**	**1702**	**13,963**
	0-15 km	2375	24,125	**26,500**	**4064**	**30,564**

Zone	MOU Target	Completed / Committed / Other (as per table above)	Difference from MOU target	Convert 0-8 km oversupply to 8-15 km zone equivalent (0-8 km = 5*8-15 km)	Difference from MOU target following conversion of 0-8 km oversupply to 8-15 km zone equivalent
0-8 km	**8,495**	16,601	+8,106	**+40,530**	
8-15 km	**69,505**	13,963	-55,542		**-15,012**