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Cannock Chase Special Area of Conservation Planning Evidence Base Review Stage 2

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Summary

This report has been commissioned by Cannock Chase SAC Partnership to review and provide information to update the strategic approach to mitigation for recreation impacts on the SAC. The work has been commissioned to review the geographic scope of the strategy ('zone of influence'), review the levels of likely housing growth over the period 2020-2040, review the Strategic Access Management and Monitoring Measures ('SAMMM') necessary to provide mitigation and their costs; and consider how costs could be apportioned to the anticipated growth. The report follows from an earlier Stage 1 Evidence Base Review produced in 2017.

Zone of influence

The 15km zone derived from the original visitor survey in 2012 still has merit and is supported by more recent visitor survey data from 2018. Use of the 75th percentile (i.e. the distance 75% of visitors originated from, measured as the straight-line distance between the interview location and home postcode) has become the standard way to define a zone of influence for recreation. Using the 2018 data, the 75th percentile for those travelling from home only on a short visit was 14.8km and for all visitors combined it was 15.3km.

The 15km distance is relatively large compared to some other European sites, but certainly not exceptional. This relatively wide draw of Cannock Chase is likely to be down to the particular characteristics of the site (a relatively unique, large, scenic area), the activities undertaken by visitors (it draws mountain bikers from a very wide area for example) and the geographic spread of housing (such that there are some large conurbations at some distance). The 75th percentile for frequent visitors (those visiting at least monthly) from the 2018 data was 7.8km and when mapped this encompasses the main settlements and urban areas from which regular users clearly originate. This provides the option of defining a core area – at 8km – that reflects the area from which the more frequent visitors originate.

Potential levels of future growth within the zone of influence

Using data from surrounding local authorities, pooled by the SAC Partnership the likely scale of growth within 15km is around a 17% increase in the number of residential properties by 2040. Approximately 43,000 new dwellings are anticipated (21,671 of which are anticipated after April 2022, when the tariff is scheduled to be updated). While these figures are indicative and simply a snapshot at this moment in time, they provide the basis by which to ensure a suitable level of mitigation is available and can be secured.

Relevant types of development

This report is focussed on impacts resulting from a net increase in residential units (i.e. C3 Use Class), located within the zone of influence for Cannock Chase SAC. This makes sense as people visiting Cannock Chase directly from home for a short visit account for the majority of access. There are also other uses and forms of development that may have different impacts on the SAC. For example, results from the 2018 visitor survey indicate that, at certain locations and times of year, other types of visitor (such as tourists) account for around a quarter of visits. We provide an overview of the different types of development and how they might be considered within the mitigation scheme. The scheme can be extended to a range of use types including hotels, assisted living and self-catering, caravan and touring holiday accommodation.

Mitigation measures and cost of mitigation

We review mitigation measures and draw on the detailed implementation plans (relating to car-parking and to site-users) which have already been produced and include costings for different mitigation elements. We estimate the total cost of mitigation would be £6,297,104. This total includes the costs to deliver the implementation plans and in addition covers some additional staffing, monitoring and contingency.

We review approaches to collecting developer contributions and a single set tariff for all growth within 15km would give a cost per dwelling of around £290.58[1]. Such an approach would broadly mirror the approach used by other strategic mitigation schemes around the country. We also consider the relative merits of other approaches to apportion costs. These include a two-zone approach which could provide an alternative whereby contributions are higher closer to the SAC.

We also highlight the importance of restricting growth directly adjacent to the SAC boundary (where the risks per dwelling are much higher), and the importance of continuing to limit new residential growth within 400m of the SAC boundary.

[1] i.e. £6,297,104/21,671. This value excludes any administration costs or in-perpetuity funding

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Acknowledgements

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1. Introduction

Overview

1.1 Cannock Chase Special Area of Conservation (SAC) is an area of internationally important heathland in the West Midlands. It is vulnerable to impacts from recreation linked to the growing population that surrounds the site. In order to comply with the relevant legislation and ensure adequate protection for the SAC, local authorities have established a mitigation approach to address the impacts of new development growth surrounding the SAC.

1.2 This report has been commissioned by Cannock Chase SAC Partnership to review and provide information to update the strategic approach. In particular, the work has been commissioned to:

- Review the geographic scope of the strategy, in terms of the Zone of Influence for recreational pressure from housing and related development on Cannock Chase SAC in light of the results of the most recent visitor survey data;
- To conduct a comprehensive review of the existing Cannock Chase SAC Strategic Access Management and Monitoring Measures (the SAMMM) in light of the Zone of Influence, and projected housing and related development within this Zone.
- To review and update the SAMMM to create a robust program for the mitigation of increasing visitor pressures on the SAC from new development, to form the basis for planning policies to be adopted by the relevant Local Planning Authorities in their Local Plans.

1.3 It follows from a Stage 1 Evidence Base Review produced in 2017 (Hoskin and Liley, 2017).

Context

Cannock Chase SAC

1.4 Cannock Chase SAC is an area of lowland heathland of around 1,244ha (see map 1), which lies entirely within the Cannock Chase Area of Outstanding Natural Beauty (AONB). Situated on a high sandstone plateau with deeply incised valleys, the site is comprised of acidic soils that support a range of

heathland, valley mire, ancient woodland and scrub types. It is designated as an SAC[2] for the following qualifying features:

- Northern Atlantic wet heaths with *Erica tetralix* (Wet heathland with cross-leaved heath);
- European dry heaths

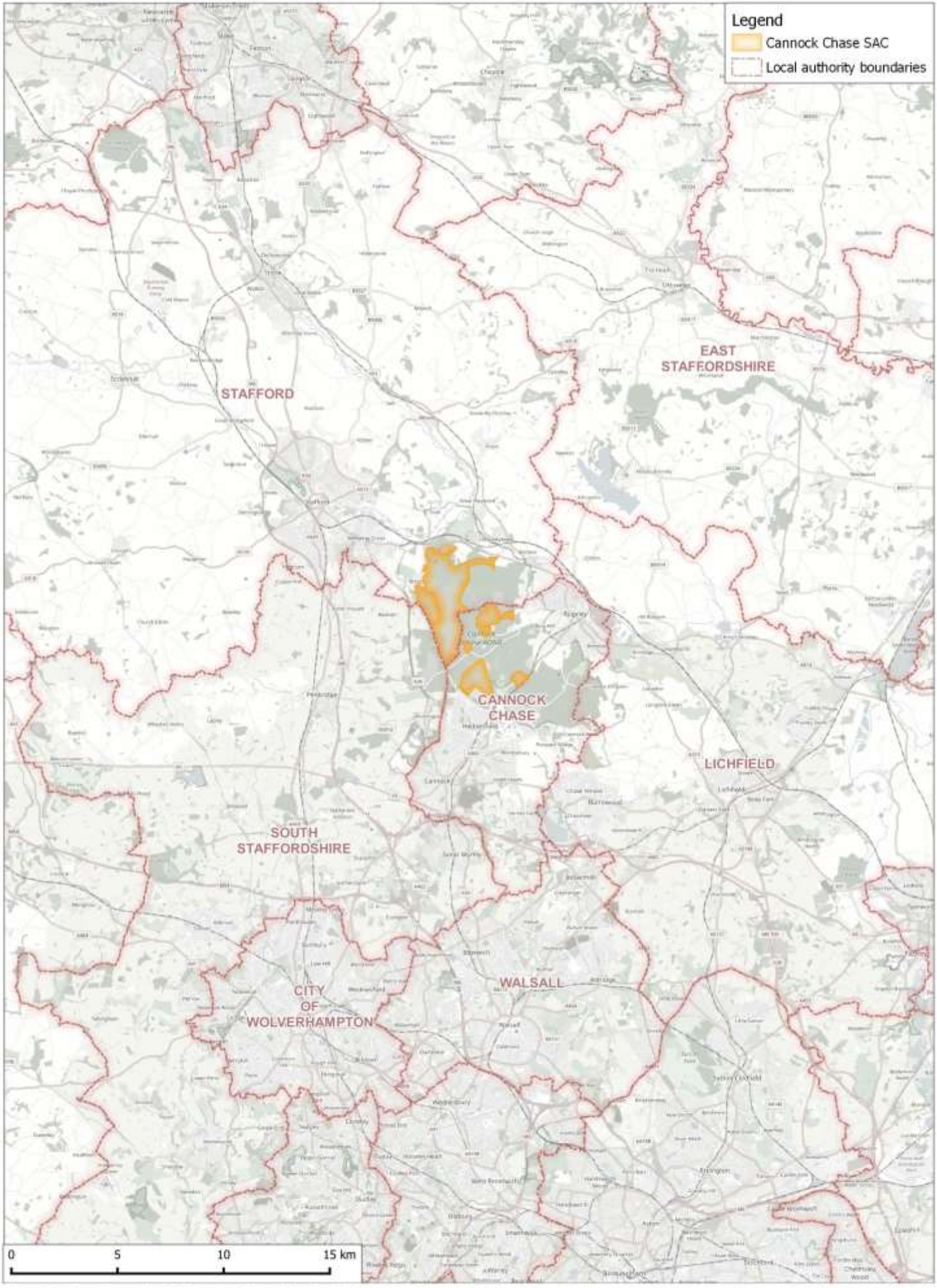
1.5 The valley mire/wet heath communities are rare, threatened vegetation types, being some of the most floristically-rich and representative examples of their type in central England. Within Cannock Chase they are found in the stream valley systems and around pools and depressions.

1.6 The area of lowland dry heathland at Cannock Chase is the most extensive in the Midlands. Its special interest also reflects an unusual floristic character, intermediate between heathlands of northern and upland England, and Wales and those of southern counties. The hybrid bilberry *Vaccinium intermedium* has its main UK stronghold at Cannock Chase. The hot, dry soil conditions found in bare ground in early successional habitats across the dry heathland is important for invertebrates such as mining bees, ants and wasps.

1.7 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2017, as amended, which are commonly referred to as the 'Habitats Regulations.' 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 protects rare and vulnerable birds and their habitats. These key pieces of European legislation have been retained by the UK post-Brexit and seek to protect, conserve and restore habitats and species that are of utmost conservation importance and concern across Europe.

[2] See the Natural England website for detail about the qualifying features and the conservation objectives for the SAC

Map 1: Location of the Cannock Chase SAC.



Impacts of recreation

1.8 There are a range of current pressures and threats on the SAC[3] and one area of particular concern relates to increased visitor pressure and the cumulative impacts of recreation. Impacts from recreation on the nature conservation interest are summarised in a range of sources (Liley et al., 2009; White et al., 2012) and include:

- Disturbance to wildlife;
- Trampling, leading to path widening, vegetation wear, erosion & soil compaction;
- Trampling of invertebrate nest sites;
- Fragmentation of habitats from new desire lines & paths;
- Damage to tree roots where paths pass close to veteran trees;
- Increased risk of wildfire;
- Eutrophication (dog fouling);
- Spread of disease (Phytophora);
- Contamination (e.g. dogs in water courses, litter)
- Vandalism;
- Challenges to achieving necessary management (e.g. grazing, spraying, scrub clearance)
- Resources drawn away from conservation management to deal with recreation.

1.9 Visitor surveys (Liley, 2012; Liley and Lake, 2012; Panter and Liley, 2019) show the main activities as dog walking, walking (without a dog), cycling/mountain biking and jogging. Data derived from the 2010/11 Visitor survey showed that visitors to Cannock Chase appeared to originate from a wider area that those for many similar sites across the UK, with half of all visitors living within 8km of the SAC and 75% within 15km. The range of the 75th percentile was used to establish the zone of influence for assessment of impacts of new development, encompassing land within the boundary of seven different Local Planning Authorities. A smaller 8km Zone was established as the area from which most frequent visitors originated. Using the housing growth figures derived from planned development within the Local Plans of relevant authorities it was originally estimated that, during the period March 2011-March 2026, around 30,134 new dwellings would be created within the 15km zone.

[3] See the site improvement plan for overview

The Cannock SAC Partnership

1.10 In response to the evidence of significant impact to Cannock Chase SAC linked to increasing recreational pressures, the Cannock Chase SAC Partnership (comprising of 6 Local Planning Authorities(LPAs), Staffordshire County Council, Natural England, and a number of key stakeholders) was formalized under a Memorandum of Understanding in 2016. As Competent Authorities (defined in the Habitats Regulations) local planning authorities have to ensure that policies in their Local Plans for new development do not lead to harm to the SAC in order to demonstrate compliance to the responsibilities placed upon them by regulation 63 of the Habitats Regulations. As such the SAC Partnership has brought the planning authorities within the original zone of influence for the SAC together, with other key stakeholders, to fulfil their duties to the SAC through a collaborative and coordinated approach.

1.11 A suite of Strategic Access Management and Monitoring Measures ('SAMMM') were identified which would be funded through financial contributions from new residential developments within 8km of the SAC (the zone within which most frequent visitors originated).

1.12 In 2017 the Cannock Chase SAC stage 1 of the planning evidence base review was undertaken (Hoskin and Liley, 2017) to act as a 'health check' upon the SAMMM, to review the current situation, check if the SAMMM was still fit for purpose, and act as a platform for further work going forward. The 2017 review concluded that, in the short term, the SAMMM remained fit for purpose, with the scale of works within it sufficient to mitigate the current level and rate of growth within the Zone of influence. However, it was recognised that in the medium to long term the SAMMM (if not reviewed and expanded) was unlikely to remain a robust approach to the mitigation of growing visitor impact due to a number of factors greatly increasing the scale and rate at which residential development was likely to grow within the zone of influence.

Need for this review

1.13 Since signing the 2016 MoU a number of factors have affected the LPAs anticipated residential growth within the Cannock Chase SAC Zone of influence, including Plan reviews and amendment to the national metric used to calculate predicted housing need. A significant factor is the Greater Birmingham and Black Country Housing Market Area's growing housing

needs which, at the time of the 2017 stage 1 planning evidence base review, were still being assessed. In 2018 a report by GL Hearn and Wood plc was published, concluding that there was a shortfall against housing requirements (up to 2036) of a minimum of 60,855 new dwellings across the Housing Market Area (HMA). This shortfall would need to be met by LPAs in the surrounding areas, and the report identified 24 broad locations, with 11 identified for further analysis. A number of these locations fell within the Zone of influence of Cannock Chase SAC.

1.14 A Housing Position Statement was published by the HMA authorities in 2020. This concludes that there is a reduced shortfall of 2,597 homes up to 2031 with regard to the Birmingham Plan. However there is an emerging shortfall post-2031 of 29,260 homes with regard to the emerging Black Country Plan (with an end date of 2039). Following publication of the new local housing need method in December 2020 and the need to review the Birmingham Plan in 2022 it is likely that this shortfall will increase further.

1.15 In addition, most of the Local Plans covering the zone of influence are currently under review, and new Plans will cover a longer time period than that covered by the original SAMMM (2026), extending up to 2040, and therefore needing to plan for significantly more residential development. A number of Plan reviews have made a commitment to make a contribution towards the HMA shortfall and future Plan reviews will need to take the growing shortfall into account. It is unknown at this stage how much of the HMA shortfall will ultimately be accommodated within the zone of Influence. Therefore, the new SAMMM will need to provide a degree of flexibility to accommodate additional housing growth within the zone of Influence, beyond that tested in this report.

1.16 There has also been a growth in other types of development within the Zone of influence which also result in increased recreational pressure to the SAC such as hotels, holiday lodges, campsites etc. (class C1 or Sui generis).

Aims for this review and report structure

1.17 This report has therefore been commissioned by the SAC Partnership to complete the review in light of the more recent growth figures and other more recent information.

1.18 As such this report:

- Determines the Zone of Influence for the SAC, utilising the most recent visitor survey data;
- Reviews what types of development could cause harm to Cannock Chase SAC;
- Assesses the likely scale of impact from new development;
- Reviews and updates the SAMMM to ensure it is proportional to determined impacts;
- Determines the likely costs of the updated SAMMM;
- Recommends flexible options for local planning authorities to secure adequate developer contributions.

1.19 The bullet points above form the structure for the report, and they follow the particular requirements as requested by the Cannock Chase SAC Partnership.

2. Zone of Influence

Overview

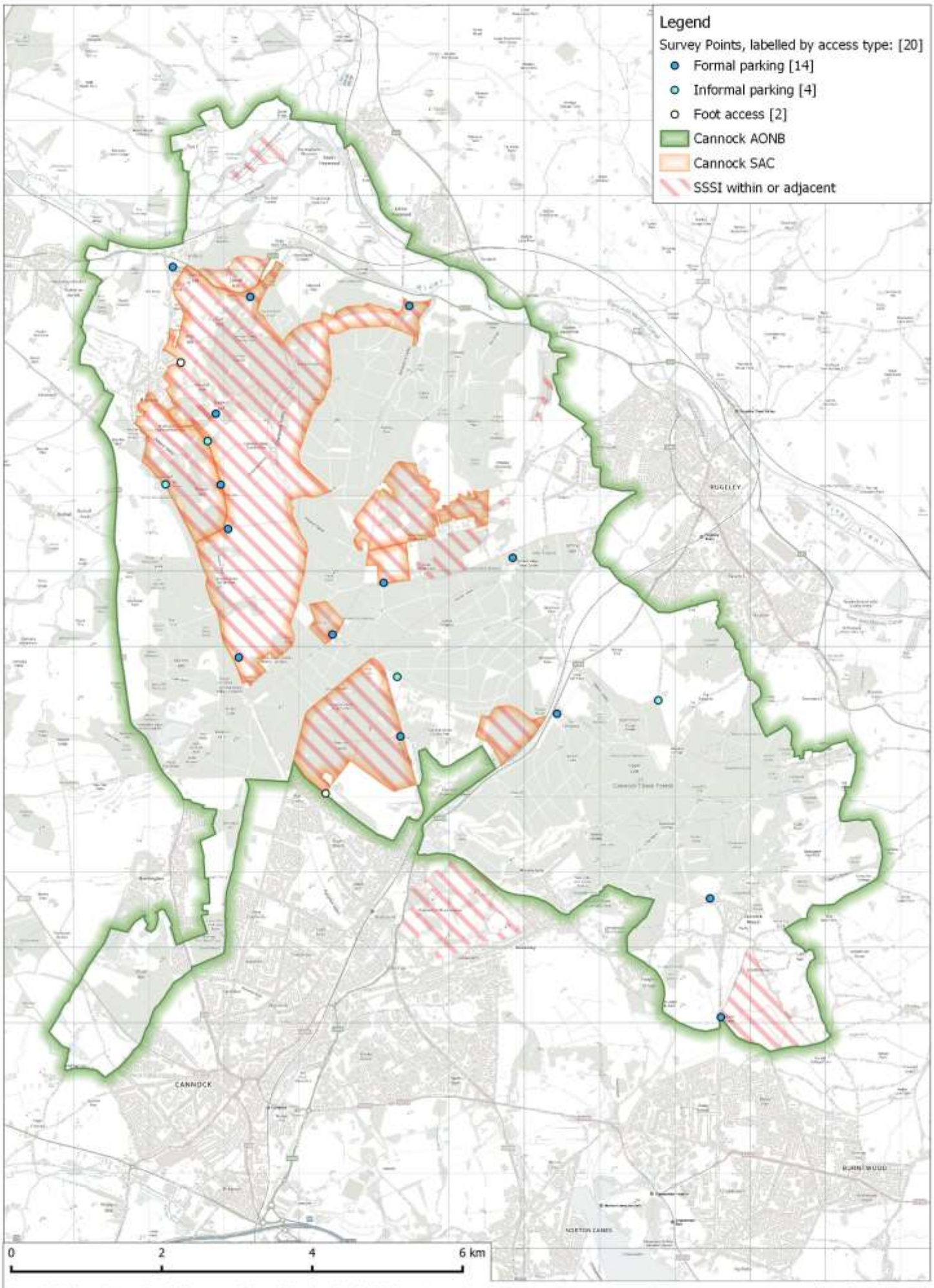
2.1 In this section, we review the most recent visitor survey data and consider implications for the zone of influence. A previous survey in 2012 was used to define the current zone approach (15km) and that survey is now dated. We consider the evidence from the more recent visitor data that might indicate a different approach.

Visitor data used and approach

2.2 The 2018 visitor survey (Panter and Liley, 2019) involved interviews at 20 survey points (Map 1) and included large visitor hubs (e.g. Birches Valley and Marquis Drive), as well as informal car parks, laybys and foot-only access points. Surveys covered a number of months, starting in the summer through to winter 2018. Autumn surveys involved both weekday and weekend surveys (8hrs on each), winter surveys just weekdays (for 8 hrs) and summer school holidays just weekdays (for 8 hrs), at a subset of just five locations. Surveyors approached members of the public using the sites and asked a number of questions.

2.3 The survey generated a total of 937 home postcodes of interviewees that could be accurately mapped (988 people were interviewed in total).

Map 2: Survey points from 2018 survey.



2.4 For each interviewee's home postcode, the linear (Euclidean) distance between the postcode point location and the survey point was calculated.

2.5 The 2018 surveys involved a major pulse of survey work in the autumn (September) when all survey points were surveyed for the 16 hours, equally split over a weekend day and a weekday. In addition some further survey work was undertaken at selected locations in August (around the bank holiday) and all locations were surveyed for 8 hours (weekday only) in November (see Panter and Liley, 2019 for details).

2.6 In order to determine the zone of influence, only the autumn (September) data were used (634 postcodes). This is because there was a statistically significant difference between weekdays and weekends (indicating that people tend to come from further afield at the weekend). By using the September data only we are therefore reducing any bias from the peak summer period, and ensuring we have a balance of data from all survey points and covering similar survey effort at each location on both weekends and weekdays.

Approaches to calculating a zone

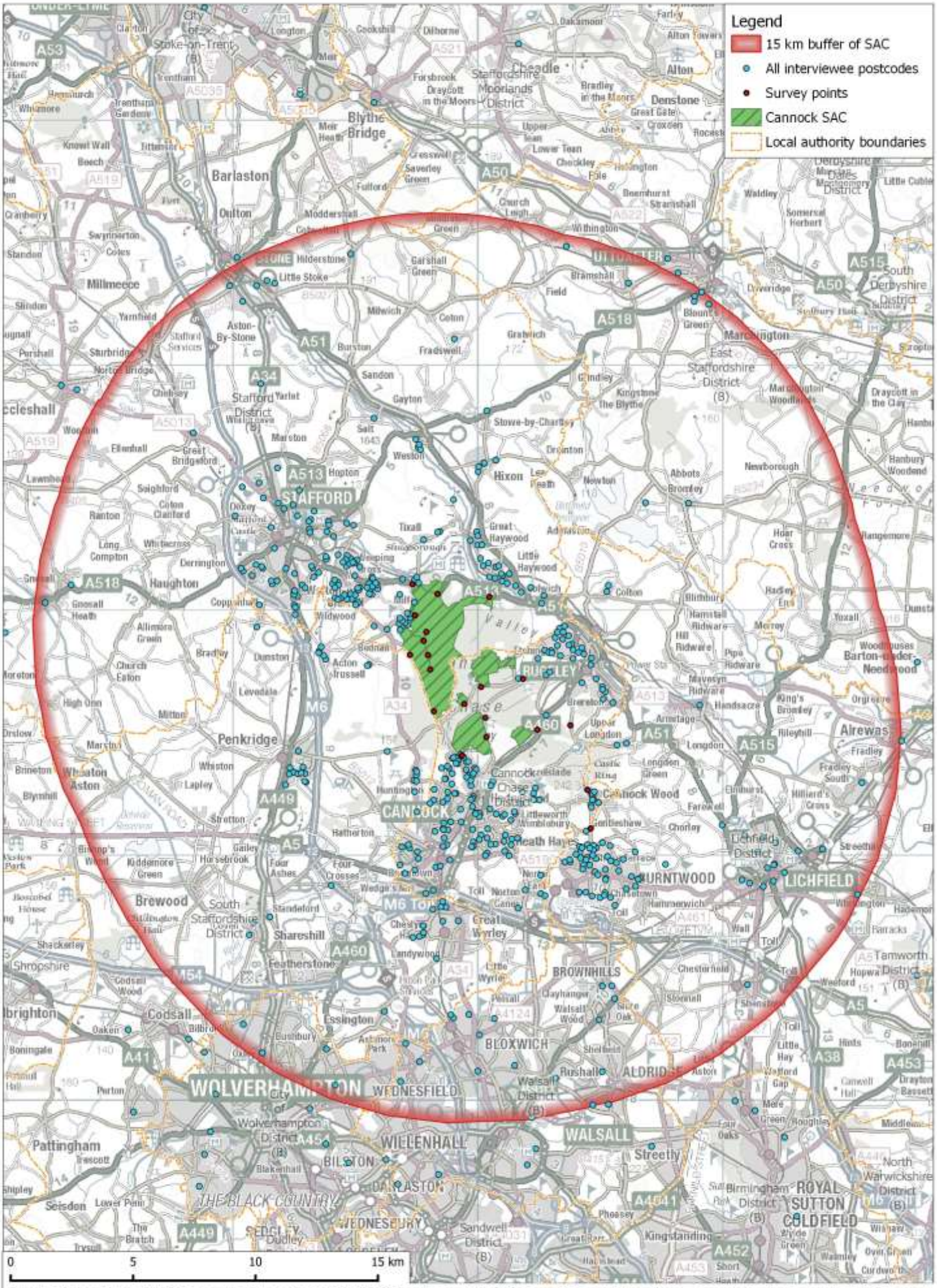
2.7 The 2012 visitor survey (Liley, 2012) was used to determine the original zone of influence at 15km. The 2018 survey differed in the approach and had a more robust, balanced survey design that allows data to be pooled more easily for analysis (see Liley, 2012 for discussion). Nonetheless the two surveys generated very similar results (Table 1), to the extent that the median distance (all interviewees) was 6.2km in both surveys.

Table 1: Summary of selected metrics from 2012 survey and 2018. .

Measure	2012	2018
Total interviewees	4809	988
Number of interviewee postcodes	3206	937
% interviewees from Stafford Borough	24	30
% interviewees from Cannock Chase District	29	26
% interviewees from Lichfield District	14	12
% interviewees from South Staffordshire District	9	8
% interviewees from Walsall Borough	5	4
% interviewees from East Staffordshire Borough	2	3
% interviewees from City of Wolverhampton	3	2
median distance all interviewees	6.2km	6.2km
75th percentile, all interviewees	15.1km	15.3km

2.8 The 75th percentile (i.e. the distance within which 75% of interviewees lived) from the interview data, applied as a buffer of fixed distance around the European site boundary, provides a standard approach to defining a zone of influence. It is how the original 15km zone of influence was defined for Cannock Chase (based on the 2012 visitor data) and mirrors the approach used widely at other sites to define a zone of influence. The 75th percentile has been used at heathland sites (such as the Dorset Heaths, Ashdown Forest SPA/SAC, the Suffolk Sandlings SPA, the Thames Basin Heaths SPA), coastal sites (such as the Solent) and at woodland SAC sites such as Epping Forest SAC. While these sites differ in recreation use and habitat, the overall principle is sound - the use of the 75th percentile means the area within which the majority of visitors live can be identified. The 15km zone is shown in Map 3, with the interviewee postcode data from the 2018 survey alongside.

Map 3: 15km zone and 2018 postcode data.



2.9 From Map 3 it can be seen the original 15km buffer fits the 2018 data well. In 2018, the 75th percentile for those travelling from home only was 14.8km and for all visitors combined it was 15.3km. The continued use of the 75th percentile is an obvious starting point for a zone of influence and therefore is considered robust.

2.10 In order to further check the approach of the 75th percentile we mapped a series of other options for a zone. In all cases these other options are based on the data from the 2018 autumn survey period and those interviewees who were travelling directly from home:

1) Original approach - a single set distance buffer of 15km from the SAC boundary (i.e. 75th percentile), as shown in Map 3.
   a) Variation using 7.8km (75th percentile for frequent visitors).
   b) Variation using 9.0km (75th percentile for all interviewees excluding cyclists/mountain bikers).
2) Convex hull – a boundary enclosing the postcodes in which 75% of interviewees lived.
3) Travel distance – using 16km travel distance (the travel distance from the SAC car parks in which 75% of interviewees lived).
4) Travel time – using 18 minute isochrome (the travel time from the SAC car parks in which 75% of interviewees lived).
5) Accounting for geographic barriers - Option 1 (15km single distance buffer of the SAC) clipped by eye to follow existing geographic boundaries (i.e. where there might be physical barrier to access):
   a) As Option 1 but clipped to M54-M6.
   b) As Option 1 but clipped to follow the A449-M6.

2.11 These provide a range of different ways in which a zone could be defined and these are shown in Figure 1. The Figure allows visual comparison of each option against the postcode data and compared to the original 15km approach. The options are discussed in turn below.

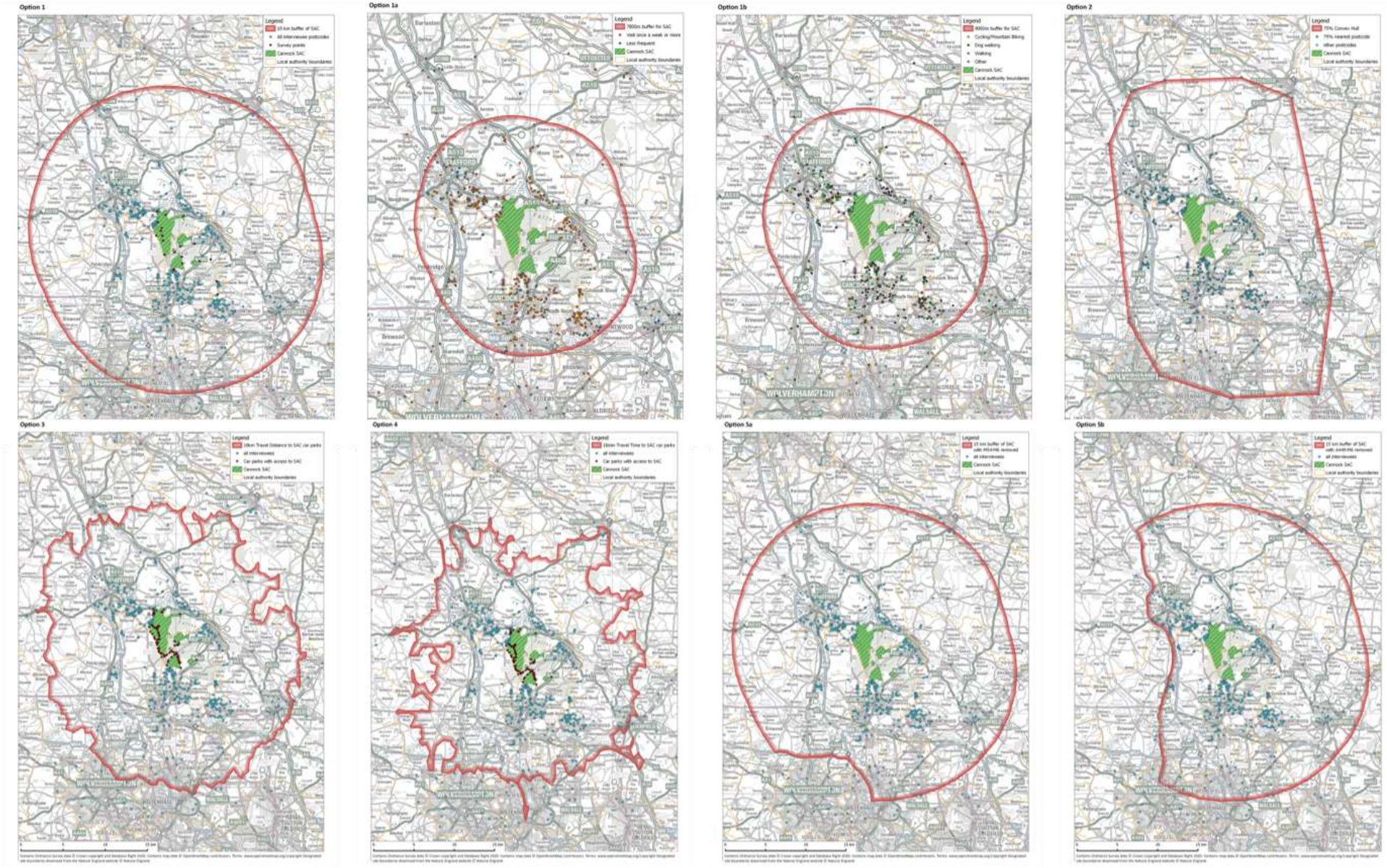


Figure 1: Example option maps.

Discussion of different options

2.12 Option 1 represents the original approach and a set buffer of a fixed distance applied to the SAC boundary[4]. For comparison we have also plotted 1a which considered the 75% radius of frequent visitors that stated they visited at least once a month (7.8km) and 1b) all interviewees except cyclists/mountain bikers (9.0km). The fixed buffer approach is straight forward to apply and easy to interpret. It is interesting to note that the 7.8km works well to capture a high proportion of interviewee postcodes and neatly encapsulates the main settlements of Stafford, Cannock and Rugeley.

2.13 Option 2 produces an irregularly shaped zone, based on the location of individual home postcodes as bounds of the shape. The convex hull is drawn by selecting the closest 75% of postcodes (based on distance from postcode to survey point) and then enclosing them in as simple a shape as possible, with a polygon that is defined by the outer points. The Zone of influence covers 8 local authorities (note a different 8 to Option 1); City of Wolverhampton, Birmingham City, Stafford Borough, Cannock Chase District, East Staffordshire Borough, Lichfield District, South Staffordshire and Walsall Councils. It is interesting to note that the shape is not circular, but instead is flattened along a north/south axis, suggesting that people living to the north and south tend to come from further afield.

2.14 To resolve issues with linear distances and provide checks of the reality of access via the road network we used travel distances/time from the SAC for options 3 and 4. Travel distance bands were calculated in GIS with a plugin which uses the Open Street Map road network to determine distances out from car parks providing access to the SAC[5]. Travel distance bands were at 2 km intervals and the number of interviewees' home postcodes within each band calculated. Around 75% lived within a 16km travel distance which was therefore used as the outer limit of the zone.

2.15 This 16km travel distance zone (Option 3) covers 7 local authorities: Cannock Chase District, City of Wolverhampton, East Staffordshire Borough, Lichfield District, South Staffordshire, Stafford Borough and Walsall Councils.

2.16 Travel distances consider how far away areas are from the SAC, but do not consider how accessible they are in terms of time. Travel time (Option 4) factors in ease of access along major routes such as motorways. The travel time bands were created in GIS with the same method as used for travel distance, based on the car

[4] For reference, in all cases buffers have been drawn with the option set to 50 line segments
[5] Using QGIS 3.8 with the OSM OpenRouteService Tool plugin https://openrouteservice.org/

parks which provide access to the SAC. Travel times were created using the OSM road network, but informed by the speed restrictions on each type of road. It is important to note that this assumes travel speed is the maximum speed limit for the road and as such is the fastest hypothetical possible distance.

2.17 We used 18 minutes to define the outer zone in Option 4 as this represented the time band within which 75% of visitors originated. This zone covered 7 local authorities (the same 7 as Option 3); Cannock Chase District, City of Wolverhampton, East Staffordshire Borough, Lichfield District, South Staffordshire, Stafford Borough and Walsall Councils.

2.18 Both the options using travel time (Option 3) and travel distance (Option 4) result in a highly complex and irregular shape, which is determined by the variation in the road network or travel times. Such boundaries are complex to define, may change over time and are very much dependent on the software and algorithms used. The travel time option (Option 4) has a particularly complex shape.

2.19 Option 5 incorporates geographic barriers, drawing on the zone shown in Option 1 but clipping to existing geographic barriers to give a more pragmatic boundary that reflects the local geography.

2.20 Two examples are mapped, both involve Option 1 modified using main roads. Option 5a uses the M54-M6 as a clip to the 15 km simple radius (this modification removes City of Wolverhampton) and then Option 5b using the A449-M6. It can be seen that neither of these seem to fit the postcode data well and produce very irregular shapes that are potentially hard to justify.

Wider context and additional considerations

2.21 The 15km zone derived from the original survey in 2012 still has merit and is supported by the more recent data from 2018. We have mapped some alternative options as illustrative examples of different zone approaches. These highlight that alternative approaches result in irregular, more variable shapes that are likely to be complex to apply in policy. In some cases the resulting zone is over influenced by particular postcodes (convex hull approach) or the vagaries of the road network (travel distance or travel time).

2.22 Other strategic mitigation approaches utilise the 75th percentile to define a fixed buffer, although in some cases this has been adjusted to account for estuaries and coastlines (e.g. Suffolk, South-east Devon) or the complexities created by multiple over-lapping zones applied to different European sites. Adopting a different zone approach at Cannock Chase to the 75th percentile and 15km would therefore represent a marked departure from what has become a national approach.

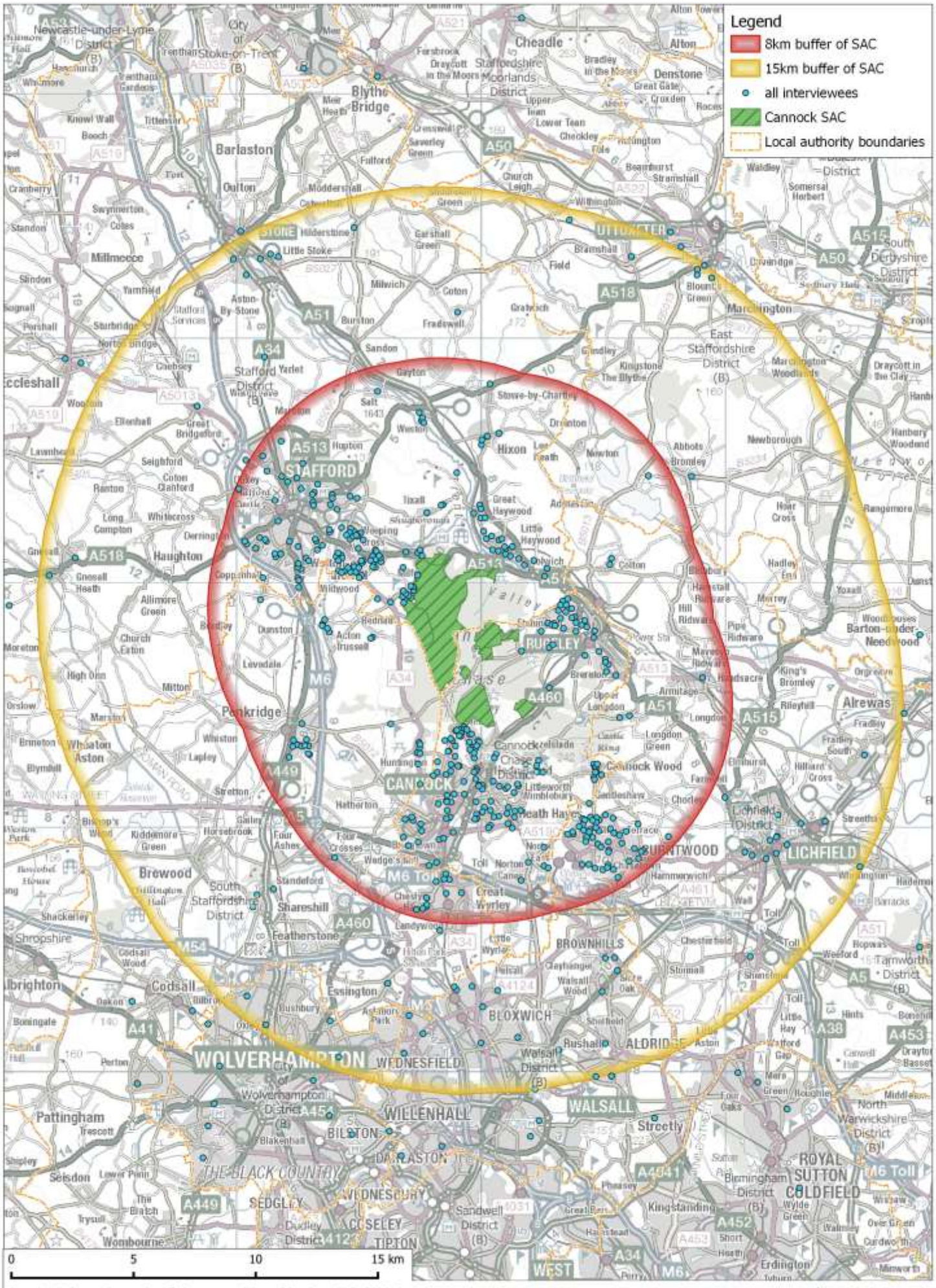
2.23 To provide context, selected examples of the 75th percentile (drawn from similar surveys undertaken by Footprint Ecology at other countryside sites and derived from all interviews), ranked by distance, include:

- Rodborough Common: 3.9km (Panter and Caals, 2019a)
- Epping Forest: 6.2km (Liley et al., 2018)
- South Downs (heathland sites only): 6.7km (Lake and Liley, 2014)
- East Devon Pebblebed Heaths: 8.2km (Liley et al., 2016b)
- Ashdown Forest: 9.6km (Liley et al., 2016a)
- Deben Estuary: 14.2km (Lake et al., 2014)
- Hatfield Forest: 17.8km (Saunders et al., 2019)
- Purbeck: 18.8km (Cruickshanks and Floyd, 2014)
- Braunton Burrows: 19.2km (Liley and Saunders, 2019)
- Cotswold Beechwoods: 20.5km (Panter and Caals, 2019b)
- New Forest (heathland and woodland areas only): 21.4km (Liley et al., 2020)
- North Norfolk Coast: 147.5km (Panter et al., 2017)
- Norfolk Broads: 194.7km (Panter et al., 2017).

2.24 The examples above include a range of different types of sites with a different draw, many are AONB and a couple are National Parks. The two extreme examples – the Norfolk Coast and the Norfolk Broads - are well known tourist destinations where high proportions of visitors were holiday makers.

2.25 It can be seen that the 15km distance is relatively large compared to some other sites, but certainly not exceptional. This relatively wide draw of Cannock Chase is likely to be due to the particular characteristics of the site (a relatively unique, large, scenic area), the activities undertaken by visitors (it draws mountain bikers from a very wide area, for example) and the geographic spread of dwellings (such that there are some large conurbations at some distance). It is notable that the 7.8km zone (Option 1a), based on frequent visitors, visually captures the main settlements and urban areas from which visitors clearly originate. This can be seen in Map 4 which shows the current zone approach (i.e. 8km and 15km) in relation to the 2018 visitor survey data. The 8km (i.e. equivalent to the 7.8km rounded) reflects the area from which the more frequent visitors originate.

Map 4: An 8km and 15km buffer of the SAC shown in relation to the 2018 interviewee postcode data.



3. Scale of future residential growth

3.1 The scale of potential future growth (i.e. number of dwellings) to 2040 were provided by the SAC Partnership and indicate around 43,000 new dwellings are anticipated. It is important to note that these figures are indicative and simply provide a snapshot of the likely cumulative growth at a given point in time. While the number of dwellings that actually come forward may differ, the figure does provide a means to review the mitigation, and ensure sufficient mitigation is broadly available to address the risks. Growth figures are intended as a general guide subject to Local Plan processes being completed.

3.2 The number of dwellings that are anticipated within the 15km zone of influence, by authority, are summarised in Table 2. The table shows totals anticipated before 2022 and after 2022 as this is the point at which the developer contributions are intended to be revised. The data in Table 2 are further broken down further in Table 3 to show the totals within 0-8km and 8-15km.

3.3 As of the end of 2018, postcode data indicates there were around 112,697 residential properties within 0-8km of Cannock Chase SAC and around 255,831 within 15km. From these figures, the level of growth 2019-2040 would represent an increase of around 17% (for both 0-8km and 0-15km).

Table 2: Estimate of dwellings that will be constructed, both allocated and unallocated within the Zone of Influence (0-15km from the SAC) over the period 2019-2040. Data provided by the SAC Partnership and intended to provide indicative estimates of likely growth, by authority.

District	Developments permitted before 2022	Developments without planning permission	Total
Cannock Chase	3,694	2,378	6,072
Wolverhampton	1,225	1,364	2,589
East Staffordshire	588	155	743
Lichfield	5,672	851	6,523
South Staffordshire	874	4,205	5,079
Stafford	6,832	5,412	12,244
Walsall	1,973	7,306	9,279
Total	**20,858**	**21,671**	**42,529**

Table 3: Estimates of numbers of dwellings that will be constructed, both allocated and unallocated, within 0-8km and 8-15km, 2019-2040, by authority. Data provided by the SAC Partnership.

District	0-8km			8-15km			0-15km
	Developments permitted before 2022	Developments without planning permission	Total	Developments permitted before 2022	Developments without planning permission	Total	Total
Cannock Chase	3,694	2,378	6,072	0	0	0	6,072
Wolverhampton	0	0	0	1,225	1,364	2589	2,589
East Staffs.	7	33	40	581	122	703	743
Lichfield	1388	237	1625	4284	614	4898	6,523
South Staffs.	390	1,406	1796	484	2,799	3283	5,079
Stafford	5,637	3,632	9269	1,195	1,780	2975	12,244
Walsall	0	0	0	1,973	7,306	9279	9,279
Total	**11,116**	**7,686**	**18,802**	**9,742**	**13,985**	**23,727**	**42,529**

4. Types of development

Overview

4.1 This report is focussed on impacts resulting from a net increase in residential units (i.e. C3 Use Class), located within the Zone of Influence for Cannock Chase SAC. This makes sense as people visiting Cannock Chase directly from home for a short visit account for the majority of access (Panter and Liley, 2019). There are also other uses and forms of development that may have different impacts on the SAC. For example, results from the 2018 visitor survey (Panter and Liley, 2019) indicate that, at certain locations and times of year, other types of visitor (such as tourists) account for around a quarter of visits.

4.2 Relevant types of development are summarised in Table 4 alongside how they might be considered within the mitigation scheme.

Table 4: Summary of types of use, whether they could have a likely significant effect alone or in-combination upon the SAC when coming forward within the 15km zone of influence, mitigation requirements and how applications could contribute to the mitigation. Adapted from a similar table in the Dorset Heaths Planning Framework 2020-2025.

Use Class	Use description	Likely significant effect	Mitigation	Contribution
C1	Hotels, guest house	Possibly	Case by case basis	1 room = 1 residential unit
C2	Specialist housing, i.e. assisted living	Possibly	Contribution as per C3 net additional dwelling. No publicly available parking capacity if in proximity to SAC.	1 room = 1 residential unit
C2	Specialist housing, i.e. sheltered housing/nursing home	No	No publicly available parking capacity if in proximity to SAC	
C2	Residential institutions, i.e. boarding schools, residential colleges and training centres	Possibly	Case by case basis contributions as per C3 housing. No publicly available parking capacity if in proximity to SAC.	1 room = 1 residential unit
C2	Residential institutions, i.e. hospitals	No	No publicly available parking capacity if in proximity to SAC	
C3	Net additional dwelling	Yes	Standard as per this report	Per house or flat
C3	Replacement dwelling	No	No	
C3	Extension or granny annex	Possibly	No	

Use Class	Use description	Likely significant effect	Mitigation	Contribution
C3	Retirement dwellings	Yes	Contribution as per C3 housing.	Per house or flat
C4	Houses in Multiple Occupation <6 residents	Yes	Contribution as per C3 housing.	1 residential unit
	Houses in Multiple Occupation (Sui generis over 6 residents)	Yes	Contribution as per C3 housing.	Every extra room>6 residents is: 1 room=1 residential unit
	Self-catering, caravan and touring holiday accommodation	Yes	Contribution as per C3 housing.	Each self-catering or tourist unit=1 residential unit with option to adjust for occupancy
	Gypsies and travellers	Yes	Contribution as per C3 housing.	1 pitch = 1 residential unit
	University managed student accommodation	Yes	Contribution as per C3 housing. Potential for exemptions for large scale managed student accommodation assessed on case by case basis.	Each self contained cluster flat or studio=1 residential unit

4.3 We acknowledge there is likely to be some variation within the different uses listed in the table and as such many will require case by case assessment. We provide further discussion and context for each below:

Use Class C1 – Hotels

4.4 Hotel use can be very varied and include business use, conferences, weddings and tourism. Many hotels will provide for a range of uses and as such it may be difficult to rule out recreation use of Cannock Chase. It should be noted however that the Cannock Chase SAC visitor survey in 2018 interviewed just 11 people (1% of interviewees) who were staying away from home. A key factor will be the location. As such hotels should be assessed on a case by case basis with advice from Natural England. Where the use is clearly targeted towards recreation use and Cannock Chase, each room could be treated as a flat.

Use Class C2

4.5 Assisted living, sheltered housing or extra care housing where occupants are still active will be equivalent to residential development and a residential flat. Any contributions to the mitigation scheme will need to include the staff accommodation.

4.6 Specialist nursing homes where residents are no longer active will not need to provide mitigation as they will not contribute to the overall increase in recreation use. These types of homes are more specialist than standard sheltered accommodation with a 24-hour warden and instead would be, for example, those targeted to the advanced stages of dementia or those for the frail elderly.

4.7 Hospitals will also not generate increased recreational use.

Houses in Multiple Occupation

4.8 Due to the permitted interchangeability of C3 dwellings and C4 Houses in Multiple Occupation, C4 Houses in Multiple Occupation need to be treated as a single dwelling if there is provision for up to 6 residents. However, where a proposal is for more than 6 residents (sui generis), further mitigation will be necessary. Each additional occupied room should be expected to provide additional mitigation equating to one flat, i.e. a proposal for a 7 room House in Multiple Occupation will be assumed to result in one additional room and will have to provide a financial contribution equating to a flat. This is because more than 6 unrelated people in a single dwelling would exceed the average expected occupancy of any single dwelling.

Self-catering, caravan and touring holiday accommodation

4.9 Self-catering and touring proposals are different to hotels as they are likely to be very much more focussed towards recreational use (i.e. business use is unlikely) and such proposals are likely to have broadly similar impacts to residential units. It should be noted however that the Cannock Chase SAC visitor survey in 2018 interviewed just 11 people (1% of interviewees) who were staying away from home

4.10 A study of tourism use of the Pebblebed Heaths in Devon, aimed at identifying how local tourism use per dwelling compared to residential use, broadly found comparable rates of use, i.e. 1 self-catering unit generated a similar level of recreation use as a residential unit (Panter and Liley, 2017). The Dorset Heaths Planning Framework allows an adjustment for these kind of proposals to allow for occupancy, such that each unit contributes 60% of the amount for a residential unit, due to typical occupancy being for 60% of the year. For Cannock Chase, the default could be to assume each self-catering, caravan or touring holiday accommodation unit contributed the same amount as a residential unit unless there is sufficient evidence to show very limited use of a substantial part of the year (for example sites closed during the winter), and in such cases an adjustment for occupancy could be made.

Gypsies and Travellers

4.11 There is no evidence to indicate that the occupants of permanent or transit sites for gypsies and travellers would have any level of recreational access need which is substantially different to residents in Use Class C3 dwellings. As such this kind of use could contribute to strategic mitigation with each pitch treated as the same as one flat.

Student Accommodation

4.12 There is limited evidence of student use of countryside sites. Nonetheless it is to be expected that large blocks of managed student accommodation are likely to be in campus-type locations that provide informal greenspace nearby, involve restrictions on dog ownership, are not necessarily occupied year-round and students are potentially less likely to own cars and drive to countryside sites for recreation. Such applications will need to be assessed on a case by case basis and where there are potential risks, contributions could be possible.

5. Mitigation

The initial SAMMM and original costing

5.1 Mitigation measures are set out in the MoU from 2017 that manage the increasing recreation coming forward over time. The mitigation measures are focussed on access management and monitoring on and around the SAC. This is slightly different to the approaches at most (but not all) other European site mitigation schemes where Suitable Alternative Natural Greenspaces (SANGs) are an additional component of mitigation. At the outset, discussions between the Cannock SAC Partnership and Natural England resulted in the suggestion that the provision of off-site SANGs should not be included within the initial MoU due to their relatively high cost when compared to on-site mitigation measures that should be prioritised 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.

5.2 In addition to the on-site measures, Natural England has also encouraged Staffordshire County Council and Forestry England as key landowners at Cannock Chase to work together to facilitate additional, sustainable visitor access within the wider Cannock Chase AONB outside the SAC.

5.3 The on-site measures that made up the original SAMMM, committed to within the MoU, are provided in Table 5. These were intended to cover the period 2011-2026, i.e. 15 years, and related to a total cost of £1,970,000. Following a review in 2018 the costs were reallocated to account for underspend in some areas and to allow greater spend in some other areas. The 2018 costs are also included in Table 5 with a description of the reasons for the change.

Table 5: Original SAMMM measures and costs, as agreed in the MoU, compared with revised expenditure as of 2018.

Measure	Cost £K	Duration	Explanation	2018 review revised cost	Reasons for change
Project initiation: business plan; agreement of partner responsibilities (Memorandum); recruitment of project staff.	£50,000	Year 0	A simple assumption that there is a cost in employing the Lichfield DC project team for project initiation.	£9,870	Actual costs incurred
Staff: one full-time project manager and one full-time visitor engagement officer	£1,400,000	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	£751,320	Actual costs incurred
Engagement of three of four key sectors: walkers and dog walkers; cyclists; horse riders. Development of volunteering and education programmes. Promotional and interpretation material	£30,000	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	£140,110	Additional £32,500 for website; Additional £30,000 for educational resources/ events; Additional £40,000 for educational infrastructure.
Strategies: an overarching strategy for visitors and nested strategies for car parking, track and footpath management and each visitor sector, plus a monitoring strategy	£135,000	Years 2 and 3	Consultancy costs. Overarching strategy including monitoring £50K, car parking £40K, each of three visitor sectors £15K	£34,600	Actual cost for producing strategies
Physical management: improvement of paths and tracks; implementation of parking plan; waymarking and on-site interpretation panels	£255,000	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 waymarking £50K.	£958,504	Additional £703,504 added for further improvement of paths and tracks; implementation of parking plan; waymarking and on-site interpretation panels & the installation and upkeep of dog bins

Measure	Cost £K	Duration	Explanation	2018 review revised cost	Reasons for change
Monitoring	£100,000	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	£75,596	Actual costs incurred; second aerial survey dropped.
TOTAL	**£1,970,000**	**Years 1 to 15**		**£1,970,000**	

Tariffs collected and commitments as of July 2020

5.4 As of July 2021, a total of **£1,066,857.08** had been collected.

5.5 Existing financial commitments totaled **£791,599** and therefore **£275,258.08** remains to be allocated.

5.6 The £791,599 has been spent as follows:

- £140,770 for the SAC Team staffing, including all overheads, June 2021-June 2021;
- £305,003 for the SAC Team staffing, including all overheads, June 2017- June 2021;
- £7,794 for the planning evidence base review by Footprint Ecology;
- £210,397 for the delivery of the detailed implementation plan objectives on National Trust land over a ten year period;
- £2,185 previous administration support from Lichfield District Council;
- £34,600 for the detailed implementation plans: a Car Parking Strategy and a Site User Strategy;
- £28,309 for creation of the Cannock Chase hub website with 5 year agreement for hosting, provision and maintenance;
- £2,540 for the Animation of the Cannock Chase Code
- £32,875 as a contribution to the Staffordshire Wildlife Trust Learning Hub project;
- £3,765 to reprint the 6 Visitor Centre Leaflets;
- £2,331 for the creation and hosting of the SAC Partnership Consultation Website by Lichfield District Council;
- £2,800 for the Creation of a Report on the 2019 Public consultation on the detailed implementation plans;
- £4,000 accommodation costs;
- £3,000 as a contribution to the Brindley Heath village interpretation board & signs.

Future mitigation requirements

Measures in detailed implementation plans

5.7 Looking forwards, mitigation is required for the impacts associated with a level of growth of around 43,000 dwellings over the period 2019-2040.

5.8 The mitigation achieved to date, as summarised above, has included the production of detailed implementation plans. These have involved drawing on monitoring data and extensive discussion with the SAC partnership, site owners and land managers to devise a package of measures. These are

clearly set out and essentially ready to be implemented. These works have been estimated in the detailed implementation plans to cost a total of £7,820,250, of which £1,098,614 of the existing SAMMM budget has already been spent or committed, leaving an estimated £6,721,636 as measures that have been identified, phased through to 2040 and ready to be implemented.

5.9 These measures form the basis of future mitigation and are summarised in Table 6 (at the end of this section), which draws on the figures in the Site User Detailed Implementation Plan. They include some special projects where the funding will help contribute towards the early planning and design work of large projects, for example relating to a master plan for Marquis Drive and a new Forestry England visitor/mountain bike facility. The money allocated is a proportion of the overall costs and would ensure that mitigation delivery is incorporated into the design from the outset.

Other measures or revisions to detailed implementation plan costings

5.10 There are however further measures and cost considerations which need to form part of the mitigation package. All of these measures are included in Table 6. From a review of the measures in the detailed implementation plans, we identify the following as additional requirements:

- Revision of staff costs;
- Monitoring;
- Contingency:
- In-perpetuity funding.

5.11 These are considered in more detail below.

Revision of staff costs

5.12 The staff costs in Table 6 cover (for period 2020-2040, unless otherwise indicated):

- Increased provision for face-face engagement (i.e. funds that could be used to fund increased face-face engagement by partners, boosting their own staffing): £1,400,000;
- Additional staffing to increase face-to face engagement, (equivalent to 2 full time posts within the SAC team): £1,576,000;
- CC SAC SAMMM Implementation and Monitoring Assistants (two posts that would undertake monitoring and help with implementation works/projects): £1,400,000;
- Part-time administrator (with a role to provide financial administration as well as potentially helping to coordinate volunteers, deal with enquiries and cover social media): £420,000;

- Delivery officer (role for period 2020-2030 only and overseeing works such as car park changes, signage and other infrastructure): £400,000.

5.13 The above totals reflect a level of staffing of the equivalent of 7 full-time and 1 part-time posts with an overall budget of £5,196,000. These are additional to the staffing already currently in place. Increased staffing is a key aspect of mitigation and common to all other strategic mitigation schemes. It is critical that the staff-time is focussed on visitor engagement and mitigation delivery on the ground, and the above posts all reflect that. However, there is a need for some consideration of the relative balance of staffing and roles and we suggest the following changes:

- A simplification and a slight reduction in the staffing such that the implementation and monitoring posts are condensed to 1 post and are simply included within the face-face engagement staff, such that there are 3 face-face engagement posts, 1 of which would have a monitoring role.
- 3 face-to-face engagement posts are currently considered sufficient rather than supplication with funding staff through partner organisations.
- Provision for a Project Manager or Project Officer with oversight of the mitigation delivery as a whole. This post would involve the line-management of other staff and provide the interface with planning officers and partners, preparing reports, financial reporting and setting budgets and priorities for reviews. This is equivalent to the current Project Officer post (which is currently budgeted to run until 2023) and not costed within the detailed implementation plans. Assigning an annual cost of £45,000 for this post, would mean a further £765,000[6] would be required.

5.14 The potential structure and relative costs of the proposed staffing are summarised in Figure 2. These are intended to be a guide; a review of staffing and roles should be undertaken to ensure the best distribution of skills and the relative balance of dedicated posts within an 'SAC team' compared to boosting the current engagement provision for different partners. The diagram does not include the current engagement officer post (see bullets at paragraph 5.6).

5.15 As set out in Figure 2 the overall cost of staffing would be around £3,949,000.

[6] i.e. £45,000*17 to cover the period 2023-2040

Figure 2: Indicative diagram showing potential staffing and costs

Monitoring

5.16 Monitoring is an important component of mitigation delivery. Monitoring needs to provide the delivery staff with information on how measures are working and any emerging issues so that problems can be resolved. This is particularly important during a period of change, for example relating to car parking.

5.17 Drawing from the detailed implementation plans, monitoring will need to include:

- Regular vehicle counts across the whole SAC and other parts of the AONB in-line with current transects (no additional cost as part of duties of SAC partnership staff);
- Visitor survey repeated at 5 year intervals, involving interviews with visitors (£160,000 total cost for 4 repeats);
- Path condition monitoring and assessment (undertaken by SAC partnership staff);
- Automated counters to record footfall at selected key paths to give overall trend of use and changes over time (£6,000 per counter per 20 years, suggested at 15 locations, giving total cost of £90,000);
- Incident recording (e.g. fires, off-road vehicles, dangerous parking, fly-tipping) in a standard way to allow them to be mapped and data compared between years, undertaken by partnership staff.

Contingency

5.18 It is important that there is flexibility in the budget to allow for variation in the actual costs of implementation and to allow funding to be reallocated and resources targeted differently if necessary. This is particularly the case given the relatively long time period (2020-2040) under review. The pandemic has highlighted how recreation use can change markedly and there is some uncertainty as to how recreation use of countryside sites might change after the pandemic. Emerging trends, such as the use of electric bikes, might mean priorities and visitor needs shift. Given the varying land ownership and organisations involved in delivering some measures, operational factors may change. Some of the elements that are costed, such as the special projects, may generate further work elements where additional mitigation could be secured, for example through changes at Marquis Drive. Providing contingency provides scope to cover these eventualities and the flexibility in-case of change.

In-perpetuity

5.19 Mitigation measures must be able to be relied upon to address adverse effects on site integrity over the full lifetime of the plan or project. In this report the focus has been on growth in the number of dwellings over the period 2020-2040, and as such it will be necessary to ensure mitigation is of sufficient duration to resolve impacts from these dwellings well beyond 2040.

5.20 While there is some variation between strategic mitigation schemes as to how in-perpetuity costs are apportioned, most assume a requirement to ensure the mitigation is in place for 80 years and resources are secured accordingly. This will mean allocating sufficient funds to maintain staffing, parking improvements, path improvements etc. well beyond 2040. Monitoring can however allow for the adjustment of measures in the future.

5.21 The Solent Mitigation Strategy sets aside around 60% of annual contributions into an investment pot which will fund measures in perpetuity[7]. Such an approach could be adopted by the Cannock Chase authorities, but will require careful calculation and regular review given the impact of the pandemic and likely low interest rates. Further specialist financial advice should be sought to calculate how in-perpetuity costs should be incorporated. In-perpetuity funding could be adjusted to reflect the car parking revenue which will allow money to be reinvested in the site.

[7] E.g. see the Bird Aware Solent annual report from 2019/20

Table 6: Mitigation costs, drawn from the future SAMMM measures set out in detailed implementation plans 'DIPs'. SU refers to the Site User Detailed Implementation Plan and CP refers to the Car Park Detailed Implementation Plan. The shading reflects the DIPs too, with blue shading indicating those measures in the site user plan and grey reflecting those in the car park plan. Orange shading reflects those measures that are either new or where the costs or detail in the DIP have been amended. For the original costs and details in the DIPs, see Appendix 3 of the Site User Plan (with the costs being the same here apart from those rows shaded orange).

Item of Works	Included in which SAMMM DIP	Cost to implement SAMMM DIP item	Currently amount from 2016 SAMMM budget allocated	Amount remaining to be funded
Resources/events for Engagement Key Stages 1-2 (2020-2040)	SU	(£6,000 per annum) £120,000	£20,805	£99,195
Resources/events for Engagement Key Stages 3-4 (2020-2040)	SU	(£6,000 per annum) £120,000	£20,805	£99,195
Resources/events for Engagement with key visitor groups (2020-2040)	SU	(£3,000 per annum) £60,000	£30,000	£30,000
One-off cost Creation of Learning Hub at Wolseley Centre	SU	£34,000	£34,000	£0
Creation of Central Website and hosting until 2040	SU	£45,000	£34,500	£10,500
Re-instatement of vehicular ditching, bollards etc. around SAC	CP	(3.62km @ £15 per m) £54,300	£54,300	£0
Re-instatement of vehicular ditching, bollards etc. around SAC	CP	(2.38km @ £15 per m)£35,700	£35,700	£0
One-off Cost for improvements to Car Parks	CP	£567,350	£567,350	£0
Special Project, Forestry England Visitor/mountain bike centre south of A460	SU	£25,000	£0	£25,000
Special Project, Marquis Drive Masterplan	SU	£25,000	£0	£25,000
Special Project, Museum of Cannock Chase, Community Hub	SU	£25,000	£0	£25,000
Circular routes created at each main Car Park: path works	SU	£335,900	£245,900	£90,000

Item of Works	Included in which SAMMM DIP	Cost to implement SAMMM DIP item	Currently amount from 2016 SAMMM budget allocated	Amount remaining to be funded
Circular routes created at each main Car Park: waymarkers	SU	£18,750	£18,750	£0
Circular routes created at each main Car Park: finger posts	SU	£30,300	£30,300	£0
Orientation panel in each main car-park showing main promoted routes	SU	£22,000	£6,200	£15,800
Additional staffing to increase face-to face engagement, (equivalent to 3 full time posts 2020-2040)	Amended from SU	(£78,800 per annum) £2,364,000	£0	£2,364,000
Special Project. Chase Rd	CP	£25,000	£0	£25,000
Close Car Parks	CP	£150,000	£0	£150,000
Material (temporary signs etc.) to close damaging habitat fragmentation desire lines	SU	£10,000	£0	£10,000
New road signs to replace existing ones	SU	£75,000	£0	£75,000
Installation of Car Park Charging Machines	CP	£70,000	£0	£70,000
Cost to maintain improved car-parks 2020-2040	CP	£704,900	£0	£704,900
Circular routes created at each main Car Park: way-markers, replacement after 10 years	SU	£18,750	£0	£18,750
Circular routes created at each main Car Park: finger posts, replacement after 10 years	SU	£30,300	£0	£30,300
Orientation panel in each main car-park showing main promoted routes, replacement after 10 years	SU	£22,000	£0	£22,000
CC SAC Team Admin Assistant (part-time, 2020-2040)	SU	(£21,000 per annum) £420,000	£0	£420,000

Item of Works	Included in which SAMMM DIP	Cost to implement SAMMM DIP item	Currently amount from 2016 SAMMM budget allocated	Amount remaining to be funded
CC SAC SAMMM Delivery Officer (2020-2030)	SU	(£40,000 per annum) £400,000	£0	£400,000
CC SAC SAMMM Implementation and Monitoring Assistant (x2) (2020-2040)	Was in SU, now removed			
Project manager/Project officer post	New	£45,000 per annum for 17 years		£765,000
Monitoring: visitor survey at 5 year intervals	New	£40,000 x4		£160,000
Monitoring: Automated counters (15 counters)	New	£6,000 per counter to cover 20 years, 15 counters		£90,000
Total				£5,724,640
10% contingency				£572,464
Total (inc contingency)				**£6,297,104**

6. Options for LPAs to secure adequate developer contributions

6.1 Previous sections of this review have identified the likely scale of growth over the period 2020-2040 and identified the scale of mitigation measures necessary to address the growth.

6.2 In this section we review options for developer contributions, considering how the costs of mitigation might be apportioned. We consider four different broad approaches as to how developer contributions could be applied:

- Standard payment across whole zone of influence;
- Each local planning authority sets local rate and triggers for payment;
- Payment zones across zone of influence with 'no payment' zones;
- Scaled payment zones within selected distance bands.

6.3 These different approaches are considered in more detail below. The cost of mitigation measures as set out in the previous section is £6,297,104 and the level of growth anticipated is around 43,000 (with 21,671 new dwellings anticipated post April 2022). We use these figures to show how different options could work. However, it should be noted that it is proposed to introduce revised developer contributions in 2022. Any calculation of per dwelling contributions at that time will need to check the amount of revenue collected through the current contributions and the amount of mitigation these have funded, and as such the figures will not necessarily reflect those used in this section.

Standard payment across whole zone of influence

6.4 A standard payment across the whole zone of influence is the simplest approach and the most straight forward to apply. It mirrors the approach most commonly used in other strategic mitigation schemes and would be calculated by dividing the overall cost of mitigation by the number of dwellings anticipated across the whole zone.

6.5 With a total cost of mitigation estimated at £6,297,104 and 21,671 dwellings this would give a cost per dwelling of £290.58. This does not take into account in-perpetuity costs or any administration fee (for collecting the

contributions[8]). It is broadly in line with costs for European site mitigation in other parts of the country. For example, the 'flat rate' for the Solent in 2020 was £595[9], in Dorset the rate applied to flats to cover SAMM is £277[10], in Suffolk the rate varies from £122-£321[11].

6.6 There is potential to vary this according to dwelling types, for example to account for people who live in flats (potentially less likely to own a pet) compared to those in larger houses with gardens that are perhaps more likely to own pets. The Dorset Heaths Planning Framework[12] applies a differential cost to flats compared to houses, while the Solent applies a rate proportionate to the number of bedrooms[13]. While these approaches are potentially fairer and proportionate, it is complex to predict the number of different sized dwellings that are likely to come forward and to apportion costs appropriately.

Each local planning authority sets local rate and triggers for payment

6.7 The overall level of growth of around 43,000 dwellings within 15km is spread across relevant local authorities as shown in Figure 3.

[8] Any such administration fee would need to be set up as necessary by each authority
[9] see Bird Aware Solent website for details.
[10] See Dorset Heaths Planning Framework for details.
[11] See East Suffolk Council website for details; the variation in rate relates to different zones which are mapped based on the relevant European sites as the mitigation scheme relates to multiple designated sites.
[12] See Dorset Heaths Planning Framework for details.
[13] With the levy in 2020 varying from £356 for a 1 bedroom property to £927 for a 5 bedroom property see Bird Aware Solent website for details.

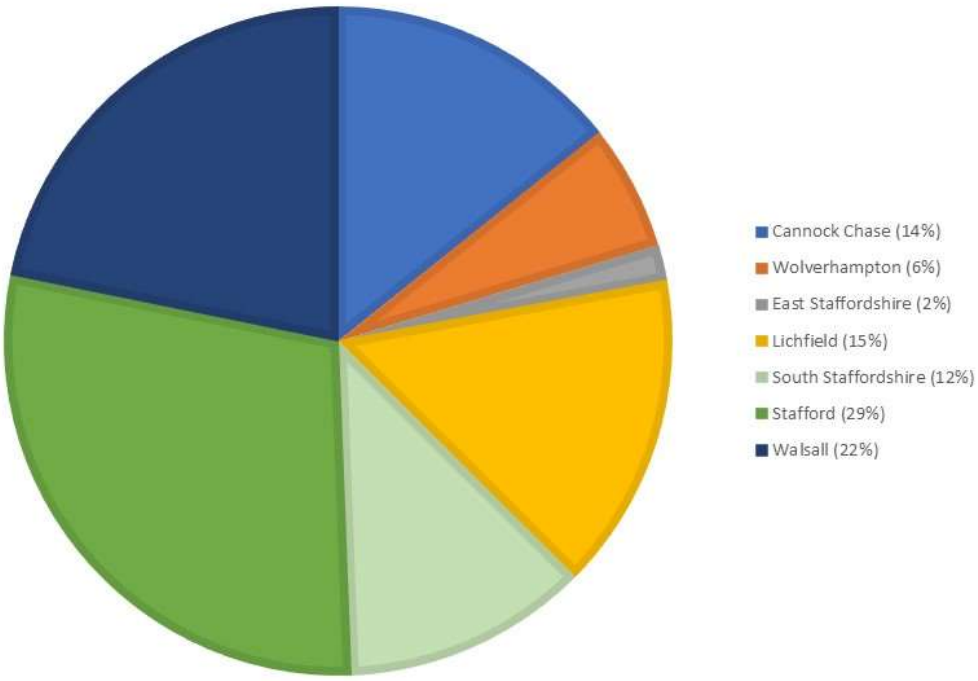


Figure 3: Summary of the percentage of new growth within 15km for each local authority.

6.8 The overall cost of the mitigation package is estimated at £6,297,104. Using the proportions shown in Figure 3, the relative contribution per authority can be calculated and this could then allow each local authority to determine the best way to collect developer contributions. Essentially, as long as the necessary revenue to fund mitigation is collected, it does not matter how each authority chooses to apply a tariff.

6.9 This would allow each authority to vary how contributions are collected and rates could be different in each authority to account for bedrooms, types of development, location etc. This gives each local authority autonomy in how the rates are applied and allows approaches to be tailored as appropriate, but does mean that rates might vary across authority boundaries. This could risk confusion from developers and risk of challenge if approaches are deemed unfair.

6.10 There are some parallels in the Thames Basin Heaths as there are clear differences between authorities. While each dwelling contributes towards SAMM in a standard way, contributions also cover SANG and these vary per authority. Each planning authority produces a mitigation strategy that is in line with an overarching delivery framework (Thames Basin Heaths Joint

Strategic Partnership Board, 2009), and tariffs are set by each authority to account for variations in SANG costs and how SANG are delivered.

6.11 The advantages of each local authority collecting contributions in different ways relate to the potential to adapt the contribution requirements. There are a range of different legal options for securing developer contributions and an authority by authority approach allows different authorities to tailor the way contributions are collected accordingly. The risk is that if the costs are apportioned per authority based on the overall level of anticipated growth, and the actual level of growth in a local authority is markedly different, the relative contributions for each authority also has to change and this could lead to complexity and a lack of fairness.

Payment zones across zone of influence with 'no payment' zones

6.12 The current approach at Cannock Chase uses a zone of influence of 15km whereby likely significant effects are triggered, and contributions are sought only from development within 8km, in recognition that development closer to the SAC is likely to generate more recreational use.

6.13 We have identified that 75% of frequent visitors originate from a zone of 7.8km, i.e. the 8km zone currently in use. Within 8km, the level of anticipated growth is 7,686 dwellings (post 2022). If these dwellings were to fund all mitigation (£6,297,104), then the cost per dwelling would be £819.30.

6.14 This approach means that the costs for mitigation are not shared equally within the zone of influence.

Scaled payment zones within selected distance bands

6.15 Visit rates do vary with distance from the SAC. Essentially the closer people live, the more likely they are to visit the SAC. This relationship is shown in Figure 4, which shows visit rates in relation to distance from the SAC, based on the 2018 visitor survey. This shows a pattern whereby visit rates decline steeply within the first 4km or so and level out at around 10km to a relatively low rate.

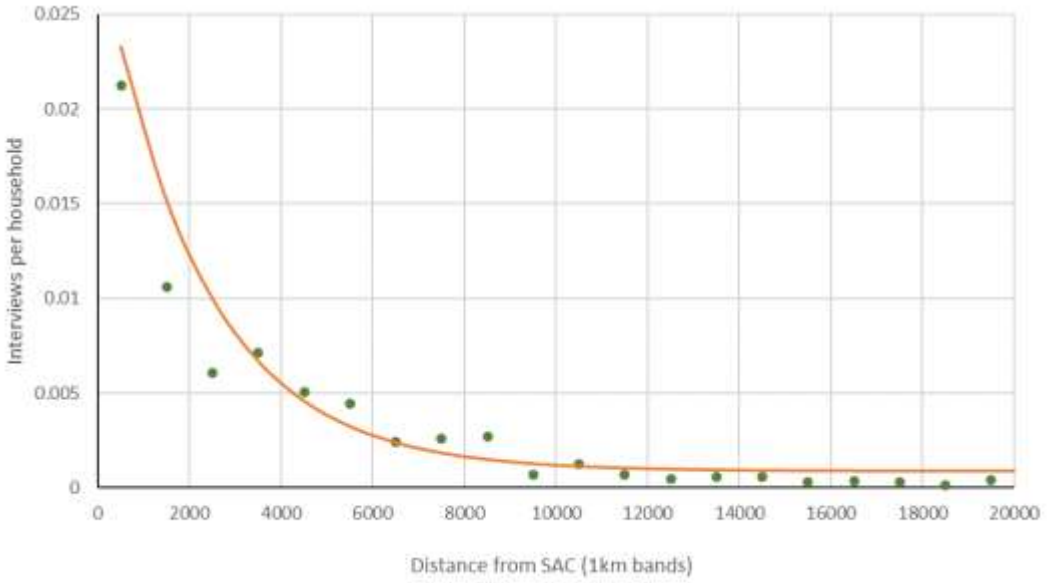


Figure 4: Visit rates in relation to distance from the SAC (in 1km bands). Data from the 2018 visitor survey and from pooled data (937 postcodes). Interviewees per household is the number of interviewees from each band divided by the total number of residential properties in the band. Orange trend line manually fitted by eye and with reference to r^2. Y=-0.00045x y=0.028e$^{-0.009x}$-0.00045. r2=0.926.

6.16 Based on Figure 4 it is possible to calculate the relative impact of development close to the SAC compared to that further away. The fitted line would suggest that the level of access expected from 24.7 dwellings in the 14-15km distance band would be equivalent to 1 dwelling in the 0-1km band.

6.17 This could be extended to give differential payment rates for different zones, based on the difference in visit rates. Two zone options are suggested in Table 7, one involving 2km bands and one split at 8km. These visit rates could be used to derive zone-based tariffs. For example, in the two zone option the difference between the zones is 4.5. A single dwelling in the 0-8km zone would therefore be expected to contribute 4.5 times as much as a dwelling in the 8-15km band. With a total cost of £6,297,104 and an approximate split between 7,686 dwellings anticipated within 0-8km and 13,985 between 8 and 15km, this would mean a tariff of £583.40 for dwellings in the 0-8km zone and £129.64 in the 8-15km zone.

Table 7: Summary of adjustments per zone for different zone options

Distance band	Mid-point	Predicted visit rate at mid point	Equivalent number of dwellings
2km bands			
0-2km	1000	0.018754	1
2-4km	3000	0.008159	2.3
4-6km	5000	0.003851	4.9
6-8km	7000	0.0021	8.9
8-10km	9000	0.001388	13.5
10-12km	11000	0.001098	17.1
12-14km	13000	0.000981	19.1
14-15km	14500	0.000941	19.9
Two Zones			
0-8km	4500	0.004596	1
8-15km	12000	0.00103	4.5

6.18 The approach of calculating differential rates for different zones addresses the problem of differential visit rates and the risk of unfairly charging those at greater distances from the SAC. The disadvantages relate to the complexity of the calculations and greater risks of development sites spanning multiple zones. In the Thames Basin Heaths (see Burley, 2007 for discussion) it was originally proposed to have a two broad zones with different levels of developer contributions (in addition to a 0-400m zone where there was a presumption against new development). Ultimately a single charging zone was adopted due to the complexities and challenges posed by a multiple zone system.

Further considerations

6.19 Ultimately a single standard per dwelling tariff may prove to be simpler and more transparent when establishing local authority apportionments across the partnership. A single tariff agreed across authorities and reviewed regularly, allows money to be collected in a central pot and used to fund mitigation in direct proportion to the development that is anticipated to come forward. It would also help to ensure consistent payments are received should there be changes in the distribution of future growth across the 15km ZoI over the period to 2040. The tariff could be collected in different ways in each authority and there may be different administrative charges etc., but this would still ensure a relative degree of fairness across authority boundaries and transparency in how the tariff is calculated. A single tariff to

calculate local authority apportionments across the zone would be in accordance with other SAC mitigation schemes seen across the country.

6.20 Differential zones would allow for different levels of contribution according to proximity to the SAC. Such a system could be established such that development with 8km pays 4.5 times more than development further to broadly reflect more frequent visit rates in the core 0-8km zone. This would more closely reflect the existing mitigation system where by development in the 0-8km zone currently contributes towards SAC mitigation. However, given the higher levels of development planned across the 15km ZoI, the partnership may wish to consider the appropriateness and practicalities of a two zoned approach when balanced against the benefits of taking forward a unified partnership approach towards SAC mitigation and compliance with the Habitats Regulations.

7. Discussion

7.1 The funding of strategic mitigation for European sites typically follows the 'polluter pays' principle whereby local planning authorities as competent authorities will ask developers to fund the mitigation measures necessary for the competent authority to conclude that a development project will not have an adverse effect on site integrity. It is common practice for local planning authorities to either use funding secured from each individual development with a S106 legal agreement, or to prioritise the necessary amount of funding from the Community Infrastructure Levy (CIL).

7.2 In this report we have considered the scale of likely plan-led growth through to around 2040 within a zone of influence around Cannock Chase SAC, and identified the mitigation required to ensure adverse effects on integrity can be ruled out from in-combination effects of growth at plan-level. We have reviewed options for collecting contributions from developers to fund the mitigation.

7.3 Guidance is clear that European site mitigation should be effective, reliable, timely, guaranteed to be delivered and as long-term as needed to achieve the necessary objectives (Tyldesley et al., 2020). Mitigation measures proposed by a plan maker should be incorporated into the plan such that they are integral to it and guaranteed to be delivered. Any doubts about the effectiveness, reliability, timing, delivery or duration of mitigation measures should be addressed by the competent authority before they are relied on when applying the integrity test.

7.4 As such this report is important in ensuring that the approach used by local authorities around Cannock Chase is sufficient and addresses the level of growth coming forwards. We build on the previous review (Hoskin and Liley, 2017) and draw on the considerable breadth of the evidence base relating to Cannock Chase SAC. In particular, the detailed implementation plans provide a clear basis in setting out an agreed programme of mitigation work and measures around Cannock Chase.

Timings of future reviews

7.5 This evidence base review has focussed on local plan led growth over the period through to 2040 and as such is looking well into the future. Estimates of growth and costs of mitigation are based on the 2020-2040 time period and clearly there are many uncertainties ahead. Regular review and checks

are essential. Furthermore this document is a review of evidence rather than setting a clear strategy.

7.6 In Dorset, a joint SPD is agreed between local authorities every 5 years and each SPD updates and builds on the last, providing updated figures on growth and mitigation focus. For Cannock Chase, regular review at 5 year intervals seems an appropriate timescale and within this there should be flexibility to annually review the levels of contribution and funding priorities. Five-year reviews provide the opportunity to set the tariff approach, zones of influence, joint working and governance arrangements. They would also provide the opportunity to consider wider issues such as viability.

Role of 400m zone and SANG

7.7 This review has been structured to follow the specification provided by the Cannock Chase Partnership and address the particular issues raised. Two additional areas are worth further discussion and, while outside the specification, are relevant to mitigation delivery. These areas are the impacts of growth particularly close to the SAC and the role of SANGs.

Growth particularly close to the SAC

7.8 Development in the areas directly adjacent to the European site boundary pose a higher risk due to the proximity. Recreation use is much higher and local residents are able to walk from their home directly onto the European site. This is clear from the Figure 4, which highlights the particularly high visit rates close to the SAC boundary. Furthermore, people accessing on foot from nearby areas can do so through numerous small paths and as such can by-pass the main entry points. As such they are not likely to pass rangers, interpretation boards, dog bins etc, instead they can simply use the easiest route available. Desire lines and informal routes can form, away from the main paths. Opportunities to intercept/engage with very local visitors or deflect them to other locations are much reduced compared to those travelling by car to main car-parks. People living very close to the site will use the space as their de facto greenspace and are likely to use it in a very different way to those who make a choice to visit and travel some distance.

7.9 Urban impacts such as dumping of garden waste and increased fire incidence (e.g. Kirby and Tantram, 1999) are likely to relate to residential properties and development in close proximity, and are harder to address because the impacts can occur spread over a wide front, rather than around

main car-parks (which is where those travelling to the site by car are most likely to have barbeques etc).

7.10 A 400m zone around Cannock Chase SAC in which there was a presumption against development was recommended by Underhill-Day and Liley (2012) and the need to avoid growth within 400m was subsequently established in the Cannock Chase Local Plan (2014)[14]. The 400m zone has not been discussed in the main body of this report but it has a very important role to play in mitigation delivery. Development directly adjacent to the SAC poses a much higher risk, while mitigation measures are likely to be less successful.

7.11 Risks are higher as recreation use is much greater from homes directly adjacent to the SAC (see Figure 4 in this report). Fire risk, fly-tipping and other urban effects are also likely to be more acute for development in close proximity to the edge of the heath.

7.12 Mitigation through SAMMM (i.e. access management and wardening) are likely to be less relevant to development in close proximity to European sites as it is harder to intercept visitors who enter from multiple informal access points (e.g. back gardens) and are likely to use the heath at a wide range of times of day (and even during the night). Indeed, the SAMMM approach is very much focussed around parking. For those who live within 400m of the SAC (a short walking distance) the SAC will provide the de facto greenspace to use and potentially seen as an extension to their garden. That will differ from the use by people who travel to the site and make an effort to visit, potentially driving and arriving at a main car-park. Very local visitors will be less likely to use the main entry points (car parks etc.) where it is easy to engage with them. Mitigation is therefore much harder if not impossible for development adjacent to SAC and as such it is important that the 400m zone is firmly established and continues. The approach is used at multiple other SAC sites where mitigation through SAMMs is only for development that is set back from the European site, beyond 400m (or in some cases even 500m).

Role of SANGs

7.13 SANGs were suggested as a potential approach for mitigation for residential growth and recreation impacts in the original Cannock Chase visitor impact

[14] See para 4.89 pf Cannock Chase Local Plan
https://www.cannockchasedc.gov.uk/sites/default/files/local_plan_part_1_09.04.14_low_res.pdf

mitigation strategy work (Underhill-Day and Liley, 2012). SANGs have not been taken forward to date, due to the concerns that Cannock Chase has a particular draw that is hard to replicate, and because SANGs are often costly. The strategic mitigation approach at Cannock Chase is, however, relatively unique among heathland mitigation schemes in the relative focus on SAMMMs type approaches.

7.14 It is noteworthy that in Dorset, and indeed some other areas, off-site mitigation approaches have evolved and encompass a range of off-site mitigation works aimed at deflecting use away from the sensitive European site. For example, options include:

- New dedicated greenspace sites managed by local authorities or others and funded through contributions from multiple developments scattered over a wide area ('strategic SANGs'). These might be new country parks or similar with a range of facilities and wide draw;
- New greenspace directly linked to a single new development, particularly large sites, whereby it is integrated into the development or directly adjacent;
- Improvements to existing greenspace sites to increase their capacity, for example through additional parking or improving safety;
- Changes to local green infrastructure to make it work better for local residents, for example improving local footpath networks or creating new path linkages;
- Setting recreation back from the European site, for example shifting car-parks or access points or opening up land for access around the site boundary;
- Creating dedicated facilities for particular user groups, such as BMX jumps.

7.15 The car parking detailed implementation plan rationalises parking and shifts the focus away from the SAC, and as such deflects access away from the SAC. Looking to the future there is potentially a greater role for these kind of approaches, and should high levels of growth continue around Cannock Chase, securing options for greenspace and effectively utilising the range of countryside access opportunities should be explored in more detail. A scoping study to review green infrastructure options and reassess SANG type approaches around Cannock Chase is therefore recommended prior to the next future review (potentially in 5 years) of the mitigation approaches or tariff.

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