



Cannock Chase SAC Visitor Impacts Mitigation Report



John Underhill-Day & Durwyn Liley

Forest Office
Cold Harbour
Wareham
Dorset BH20 7PA
Tel/Fax: 01929 552444
info@footprint-ecology.co.uk

connecting wildlife and people
www.footprint-ecology.co.uk

Cannock Chase SAC Mitigation Report



Date: December 21st 2012

Version: Final

Recommended Citation: Underhill-Day, J. & Liley, D. (2012). Cannock Chase Visitor Impacts Mitigation Report. Footprint Ecology. Unpublished report.

“The analysis and recommendations in this report will form the basis for future discussions between the partners on a way forward to develop a Mitigation Strategy and Implementation Plan. The partners will develop a Mitigation Strategy and Implementation Plan which is grounded in a common understanding of: the visitor recreation pressure factors that currently combine to cause a significant impact on the integrity of Cannock Chase SAC; the type, amount and location of development that is likely to, in combination, significantly increase these pressure factors in the future; the package of measures required, over a given time period, to mitigate the significant impacts on the integrity of the SAC caused by additional visitor pressure arising from development and; the most practical and effective mechanisms to secure these measures.”



Summary

This report follows on from an earlier report on possible mitigations for increases in visitors to Cannock Chase SAC. Since the earlier report, additional information has become available on the condition of the SAC, the behaviour of visitors and the patterns of visiting.

The SAC is important for its dry heathlands, valley mires, broadleaved woodland and invertebrate assemblages particularly on old trees, fungi and bare sand. There are a number of important species, including the main British population of a hybrid bilberry, important populations of butterflies and beetles and breeding nightjars.

It is apparent that the SAC is already suffering significant damage from existing visiting levels and that additional visiting from new developments will add to this. Such additional visiting is likely to increase levels of damage without mitigation. The main problems are fragmentation of habitat from a multiplicity of paths and tracks, track and path widening with erosion, trampling and compaction and horse riders and cyclists going off the bridleways, eutrophication from dog mess and disturbance from people and dogs.

Much management on the SAC is ongoing, but a report strongly recommending grazing has not been adopted, partly due to concerns over grazing animals spreading *Phytophthora*. Any grazing scheme that contemplated fencing on the common would require a substantial public consultation, although this could be part of a wider consultation which is in any case desirable on the future management of the SAC.

Based on a recent visitor survey, it was found that cyclists come from a wide area, with horse riders and walkers with or without dogs coming from areas closer to the SAC. Cyclist numbers seem to have been increasing more rapidly than other groups. Most visitors come by car with some 75% of all visitors coming from a zone 15km or less from the edge of the SAC. Some local visitors arrive on foot from Cannock and Brocton. The majority of visitors are walkers or dog walkers, but there are also significant numbers of horse riders and cyclists. In general, those visiting to dog walk make up a greater proportion of visits to the car parks off Chase Road in the north than off Camp Road to the South; most cyclists come from other parts of the Chase to visit the SAC; while horse riders visit the SAC with from a few car favoured car parks adjoin the SAC boundary and indirectly from other areas within the Chase.

The visitor report (Liley 2012) summarises the new housing allocations with a projected increase of some 78,000 new homes, an increase of 10%, with the largest percentage increases in housing within 1km bands at 1km, 5km, 8km-10km, 13km, 16km and 19km.

The increase in new housing may result in an increase in access levels of around 15% over the next 15 years, with the greatest numbers originating from north and south of the SAC but the highest visiting rates originating from housing to the north, east and west.

The main mitigation measures recommended to offset these expected increases in the number of visitors are:

1. No new housing development should be permitted within 400m of the SAC boundary

2. Increasing the size of the heathland and improving connectivity between the different blocks of the SAC.
3. Continuing current management practices and introducing extensive grazing by cattle and ponies or possibly sheep.
4. Reviewing track, path and firebreak systems.
5. Carrying out a comprehensive public consultation, education, awareness and information campaign, supported by additional staff.
6. Progressively closing lay-bys over a five year period.
7. SCC, FC and AONB jointly reviewing the size, location and distribution of car parks across the Chase with the aim of reducing pressure on sensitive areas together with a review of car park charges as a revenue stream.
8. Providing Suitable Alternative Natural Green Space, largely for walkers and dog walkers, in the form of a minimum size of 30ha in four locations around the SAC.
9. Examining the provision of a hopper bus service and the introduction of traffic calming measures on some roads.
10. Review the possibility of traffic calming on some roads close to the SAC.
11. Undertake a comprehensive biological, habitat condition and visitor monitoring programme

Funding for such mitigation measures will need to come from developer contributions. A framework for collecting developer contributions and for prioritising and dispersing funds for mitigation projects will need to be established. We suggest that such contributions should be established within a 15km radius of the SAC. A differential rate could be applied, with housing in the 400m-8km zone be required to contribute at a higher rate.

Contents

Summary	4
Contents	6
Acknowledgements	7
1. Introduction	8
2. Cannock Chase SAC	10
3. Earlier Reports	15
4. The evidence base.....	20
5. Past and present habitat and visitor management	22
6. The 2011 visitor survey	26
7. Additional Housing, people and visitors	28
8. Habitat Management.....	29
Size and fragmentation.....	29
Habitat condition and management	30
9. Recreation Management	36
Car parks and parking.....	36
Cycling	39
Walkers and dog walkers.....	40
Education and awareness measures for all users.....	42
General recommendations	43
10. Off-Site Measures	46
Background and options.....	46
Zone of influence and SANGS.....	49
Other initiatives.....	52
11. Monitoring	54
12. References	56
Appendix 1-Indicative Costings	58
Appendix 2 Impacts and Mitigation.....	63

Acknowledgements

Particular thanks to Ali Glaisher and Sue Sheppard for their help in supplying information and discussing issues dealt with in this report. Thanks also to our colleagues at Footprint Ecology, Jim White and Rob McGibbon for commenting on an earlier draft and for helpful discussions on a number of the measures proposed in the report.

1. Introduction

- 1.1 An earlier report by Liley et al (Liley et al. 2009) provided the evidence base and material relating to Cannock Chase Cannock Chase Special Area of Conservation (SAC) to assist four district authorities to ensure that their core strategies were compliant with the requirements of the Conservation (Natural Habitats &c.) Regulations 1994, by completing an assessment of their strategy's' implications for European wildlife sites. The report followed on from a joint screening opinion produced by Stafford Borough Council and Cannock Chase District Council Local Development Frameworks (in respect of Cannock Chase SAC) that was undertaken in June 2007. This has since been updated to include Lichfield District and South Staffordshire District and also to reflect housing figures in the Regional Spatial Strategy Phase 2 revision.
- 1.2 The European Habitats Directive 1992¹ increased the protection afforded to plants, habitats and animals other than birds, through stricter protection of species and by the creation of 'Special Areas of Conservation' (SAC). The Conservation (Natural Habitats &c.) Regulations 1994 transpose the requirements of the Habitats Directive into UK law. The EC Habitats Directive and UK Habitats Regulations afford protection to plants, animals and habitats that are rare or vulnerable in a European context.
- 1.3 Until recently, the assessment of the potential effects of a spatial or land use plan upon European sites was not considered a requirement of the Habitats Directive. A judgment of the European Court of Justice² required the UK to extend the requirements of Article 6(3) and (4) of the Directive to include the assessment of the potential effects of spatial and land use plans on European sites. The Habitats Regulations have been amended accordingly².
- 1.4 Depending on the outcome of the Habitats Regulations Assessment, the LPA may need to amend the plan to eliminate or reduce potentially damaging effects on the European site through avoidance or mitigation measures. If adverse effects on the integrity of sites cannot be ruled out, the plan can only be adopted in accordance with Regulations 85C to 85E, where there are no alternative solutions that would have a lesser effect and there are imperative reasons of overriding public interest sufficient to justify adopting the plan despite its effects on the European site(s).
- 1.5 There have been a number of reports in recent years which have examined the potential threats including recreational pressures to the integrity of the Cannock Chase Special Area of Conservation (the SAC)³ (Liley *et al.* 2009), the impacts on lowland heathland from recreational pressures generally and the direct impacts on the fabric of the SAC (White, McGibbon, & Underhill-Day 2012), patterns of behaviour and visitor use (Liley 2012)(Liley

¹ Council Directive on the conservation of natural habitats and of wild fauna and flora of 21st May 1992 (92/43/EEC)

² The addition of Part IVA (Regulations 85A-85E) to the Habitats Regulations in 2007, under the title "*Appropriate Assessments for Land Use Plans in England and Wales*".

³ <http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0030107>

& Lake 2012) and what potential mitigation for visitor impacts could be put in place (Liley *et al.* 2009)(White, Underhill-Day, & Liley 2009). This report builds on these earlier studies but is based on the latest available information and is intended to be a stand-alone report with recommendations on mitigation for increased recreational impacts on the SAC.

2. Cannock Chase SAC

- 2.1 The Site of Special Scientific Interest (SSSI) at Cannock Chase was notified in 1987 and covers 1264.3 hectares. Almost all of this area (1236.93 ha) subsequently has been designated on 14 June 2005, as a Special Area of Conservation (SAC) under the provisions of the European Habitats Directive. Cannock Chase represents the largest area of heathland habitat surviving in the English Midlands and though much diminished in area from its original extent, as with all lowland heathland zones, the habitat and dependent species are of very high nature conservation importance. Map 1 shows the extent of the SAC, the AONB and provides geographic context for areas referred to later in the report.
- 2.2 The primary reasons for the designation of the SAC are the European dry heaths and the Northern Atlantic wet heaths with cross-leaved heath *Erica tetralix*. The designation also notes that Cannock has the main British population of the hybrid bilberry, *Vaccinium intermedium* and important populations of butterflies and beetles as well as European nightjar *Caprimulgus europaeus* and five species of bats.
- 2.3 Any mitigation strategy must have regard to the Conservation Objectives and definitions of favourable condition for designated features of interest whether within the SSSI or SAC. The Conservation Objectives for Cannock Chase SAC/SSSI (Natural England 2008) are:
- 2.4 “Subject to natural change, to maintain the dwarf shrub heath, broadleaved mixed and yew woodland and fen marsh and swamp in favourable condition with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated.”
- 2.5 The Conservation Objectives listed for the Cannock Chase SSSI/SAC are to maintain (or to restore) the following habitats in favourable condition, with particular reference to any component special interest features for which the land is designated SSSI or SAC:
- Dwarf Shrub heath
 - Broadleaved mixed and yew woodland
 - Fen, marsh or swamp

Specific designated features include:

- European dry heaths with heather, western gorse and wavy-hair grass communities
- Valley bog/fen with cross-leaved heath and the moss *Sphagnum compactum*.
- Semi natural broad-leaved woodland (NVC W5 and W7 alder woods and W16 oak woods)
- Invertebrate assemblages of heartwood decay, fungal and fruiting bodies and bare sand

- Also mentioned as Annex II species on the Natura 2000 SAC data form⁴ are the native white clawed crayfish *Austropotamobius pallipes* and great crested newt *Triturus cristatus*.
- 2.6 Natural England has also produced more generalised advice as ‘Views about Management’ (VAMS) of Cannock Chase SSSI. This suggests that suitable management of dry and wet lowland heath would be by low intensity grazing using appropriate stock and stocking rates to maintain variation of vegetation composition and structure and create bare ground; and that cutting or mowing and prescribed burning could also be useful options. It also suggests that there is some benefit in retaining some trees and scrub; that bracken invasions may need to be controlled; but that small stands of gorse can be beneficial.
- 2.7 On valley mire, VAMS also considers grazing and trampling by livestock to be to be an important management as well as maintenance of water quantity and quality. The recommendation for wet woodland is minimum intervention, while management of deciduous woodland and wood pasture varies according to circumstance on individual sites.
- 2.8 Of the 30 SSSI units of Cannock Chase (based on the compilation from 1 August 2012), eight and part of a ninth are outside the Country Park. All units have been assessed at different times between 2006 and 2011. Of the 21 units comprising lowland heathland, 18 (953.14 ha) are reported to be in “unfavourable recovering” condition and three (68.26ha) in “favourable” condition. Of the 7 units comprising lowland broadleaved and mixed woodland, 2 (17.8 ha) are reported as “favourable” and 5 (206.49 ha) as “unfavourable recovering”. Of the 2 units of lowland fen, marsh and swamp, 1 (11.7 ha) is reported as “unfavourable recovering” and 1 unit (23.7 ha) as “unfavourable no change”. The overall condition thus is that Cannock Chase SSSI is reported in 2012 as being 91.43% in “unfavourable recovering”, 1.85% in “unfavourable no change” and 6.72% in “favourable” condition. Together this means that 98.15% of the SSSI is assessed currently as meeting the target for SSSI condition.
- 2.9 The majority of the SAC is common land and under the Countryside and Rights of Way Act 2000 and there is a right of open access on foot over most of the area. In addition, there are numerous public bridleways across the SAC open to those on foot, on horseback or on bicycles. The SAC is within the Cannock Chase Area of Outstanding Natural Beauty and is also, in part, designated as a Country Park. Map 2 shows the extent of the Public Rights of Way across the SAC and AONB.
- 2.10 With all these designations and open access on foot, horseback and bicycle over large parts of the adjoining land owned and managed by the Forestry Commission; it is not surprising that Cannock Chase is a popular visitor destination. In addition, Liley et al 2009 recorded over 1,100,000 properties within 30 km of the SAC and Liley 2012 estimated

⁴ <http://jncc.defra.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030107.pdf>

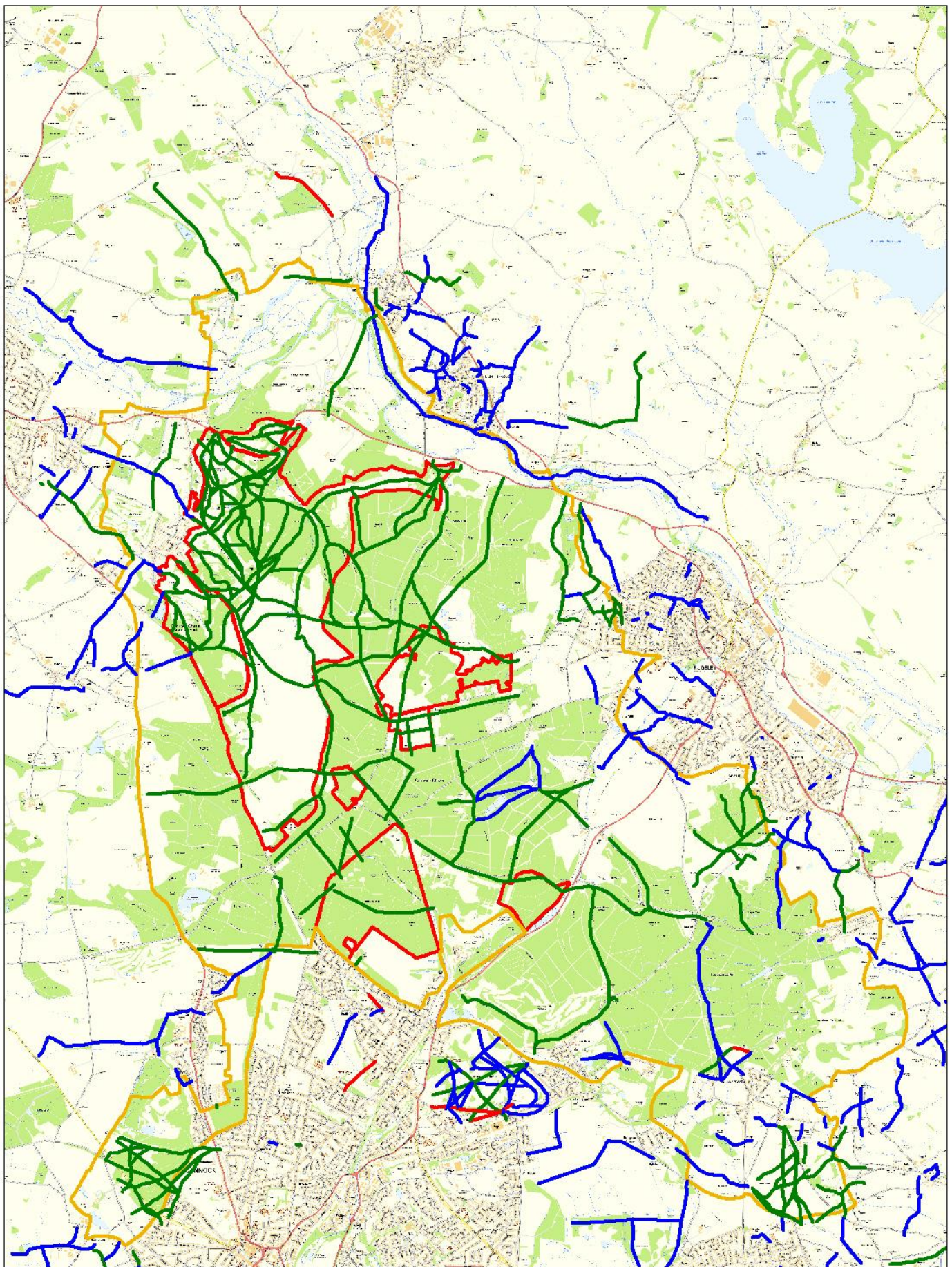
that there are nearly 1,200,000 residential properties within the eight Local Authority⁵ areas closest to the SAC, and from the visitor surveys in 2010/11 that the highest level of visits per property are from those within 10-15km from the SAC.

⁵ Stafford Borough, Cannock Chase, Lichfield District, South Staffordshire, Birmingham City, East Staffordshire, Sandwell.



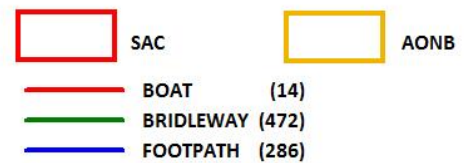
Map 1: Cannock Chase SAC and AONB boundaries shown with geographic areas referenced in the report

SAC
 AONB



Map 2: Public Rights of Way around the AONB

Contains Ordnance Survey Data.
 ©Crown copyright and database right 2012.



3. Earlier Reports

- 3.1 This section summarises earlier reports in so far as the findings are relevant to recreational impacts on the SAC.
- 3.2 An evidence based report which looked at the likely impacts from the increased recreation from residents of additional housing was produced in 2009 (Liley et al. 2009). Based on the available figures from respective core strategies at that time, an increase of 9% in the number of visitors to the SAC was predicted from increases in housing in the Districts of Cannock Chase, Lichfield, South Staffordshire and Stafford Borough. The report noted that some 2.7 million people live within a 30 mile radius of the SAC with the largest volumes of housing close to the SAC in Stafford and Cannock.
- 3.3 A 2000 visitor survey of the AONB found the estimated number of visits pa was 1.5 million, with 60% of visits at least fortnightly, most visits less than 2 hours and the commonest activity walking with or without a dog. Over 80% arrived by car and 70% came from within a 10 mile radius. Impacts from visitors and from increased urbanisation recorded elsewhere were summarised under the headings of soil erosion and compaction, fragmentation of habitat, disturbance to ground nesting birds, trampling and increased bare ground, dogs and nutrient enrichment, the spread of disease, increased fire risk and restrictions on management.
- 3.4 The report drew attention to the small size of the SAC compared to the heathland SACs in Dorset and the Thames Basin and compared the number of car parking spaces (an estimated 1085 at Cannock), and the current visitor densities at 1024/ha/pa at Cannock compared to 680 and 842 on the Dorset and Thames Basin Heaths respectively. The report noted that recreational impacts had been identified as an issue in earlier reports (Treweek & Ursus Consulting Ltd. 2008)(Baker Shepherd Gillespie 2009)and that the impacts from various growth scenarios could not be determined not to have an adverse impact on the SAC. The report suggested that the impacts from visitors from new housing would be strategic and related to widespread growth at multiple locations over an extended time period, and the need for adequate provisions and strategies to avoid further impacts or mitigate for the expected increase in recreation related pressures.
- 3.5 It went on to consider possible mitigation measures, and based on Liley et al (2009), and concluded that even small scale developments within 400m of the SAC could collectively have an adverse effect on integrity. The report noted that a model for avoiding adverse effects had been developed jointly by Local Authorities, supported by Natural England, on both the Thames Basin and Dorset heaths, based on the assumptions that adverse effects could not be avoided within 400m of the designated sites and that outside this inner zone, a zone of influence within 5km of the designated sites (which covered 75%of visits to the designated sites) would require mitigation.
- 3.6 Such mitigation included wardening, on-site management, education and awareness measures, support for fire and emergency services and the provision of suitable alternative natural green spaces (SANGS). Such measures, it was believed, if properly

applied, would mitigate for the adverse effects from additional housing from small developments within the zone of influence. Large developments, the size of which was to be defined by the circumstances and locality of each proposal, were to be considered on a case by case basis. Residential development was defined as dwellings within Use Class C3 or staff residential accommodation within Use Classes C1 and C2.

- 3.7 On the basis of the information then available, Liley et al (2009) recommended a 400m zone around the Cannock SAC in which any residential development (C1, C2 and C3) would have an adverse effect on integrity, with a zone of influence 12 miles as the crow flies from the SAC boundary where mitigation measures would need to be applied prior to developments taking place. Such avoidance measures were to be generic for smaller developments but larger developments, which were defined as over 50 houses would need to contribute to the generic mitigation measures and provide alternative green space within or close to the development site. Outside the zone of influence, it was recommended that developments larger than 100 dwelling would need to be individually assessed, either as part of the HRA of any development plan document or at a project level.
- 3.8 Liley et al (2009) also noted that new development and mitigation measures would need to be considered strategically by all the affected local authorities. On site measures will need co-ordination between the bodies involved in the whole of Cannock Chase including the AONB, SCC and FC.
- 3.9 Finally, the report went on to consider potential mitigation strategies under the headings of habitat management on the SAC, access management and visitor infrastructure, publicity, education and awareness raising, and provision of SANGS, and briefly listed a range of potential mitigation and monitoring measures, to be funded by developer contributions.
- 3.10 Following on from the Liley et al report (2009), mitigation measures to enable the delivery of additional dwellings whilst avoiding adverse effects on the SAC were considered in more detail by White et al (2009). They recommended a number of mitigation measures, under the headings of habitat management; access management and visitor infrastructure; publicity, education and awareness raising; and alternative sites. They also considered monitoring and further research. Their mitigation measures were presented within the context of the recommended zones of influence and other parameters put forward by Liley et al (2009) and summarised in 2.17 above.
- 3.11 Under habitat management, the report recommended an assessment of the potential followed by an extension of the existing area of heathland, the re-introduction of grazing onto the SAC, a review of the provisions for the prevention and management of wild fires and a continuation of existing management for prevention of scrub and woodland encroachment and bracken control.
- 3.12 Within the section on access management and visitor infrastructure the report recommended a strategic review of car parking, with enhancement of car parks and access away from the SAC and appropriately, to existing car parks and a consistent

approach to parking charges. In relation to users it recommended provision of dog walking areas outside the SAC, enforcement of policies for dogs on leads and for dog walkers to pick up after their dogs, that cyclists and horse riders be encouraged to stay on designated routes but with further dedicated facilities for horse riders away from the SAC. At Marquis Drive the report recommended redesign and enhancement to encourage visitors away from Brindley Heath, a review of events and activities promoted within the AONB, and the introduction of a bus route around the Chase.

- 3.13 In the section on publicity, education and awareness raising the report suggested an education pack and local school visits and enhanced local community links. A range of awareness raising measures were suggested including an enhanced web presence, leaflets and maps for user groups, giving information of likely contentious issues such as grazing or car park closures, and promoting alternative sites. It was also suggested that awareness of nature conservation importance and sensitive areas should be more widely promoted through interpretation and programmes of guided walks and events, and the desirability of promoting bus routes was noted. The need for an increased staff resource was recognised if these measures were to be adopted.
- 3.14 Based on the information available at the time, the report also recommended an audit of potentially available sites which could function as SANGS and the phased creation of alternative Greenspace provision.
- 3.15 Finally, the White et al (2009) report made a series of recommendations for vegetation monitoring, annual surveys of Annex I breeding birds, ongoing monitoring of Phytophthora, recording of fires and other incidents, further repeatable visitor surveys and monitoring and the maintenance of a database of new housing within a zone of influence. All their recommended mitigation and monitoring measures have been re-appraised for this report.
- 3.16 A further report on the impacts of recreation was produced in 2012 (White, McGibbon, & Underhill-Day 2012) which included an on-site impact assessment, a questionnaire survey of local experts and a literature review of the effects of recreational activities on sites.
- 3.17 This reported that the main physical visitor pressures noted from a site inspection on the SAC included the creation of desire lines and new paths causing fragmentation of habitats and disturbance to wildlife, path widening and vegetation damage, surface erosion/deposition and compaction, trampling of vegetation and invertebrate nesting sites and wildfires. The report noted that the multiplicity of paths and desire lines, coupled with research showing higher levels of disturbance closer to paths suggested that disturbance to Annex I birds could be a problem. It reported that a mapping exercise had disclosed that there were 86km of tracks and firebreaks and 104km of paths on the SAC.
- 3.18 The amount of the SAC that is path or track is significant. If a conservative estimate of the path width and influence zone (the area affected by trampling damage, eutrophication etc.) is taken as 2m (and many of the paths and firebreaks are considerably wider), the total area affected by paths is some 36ha. This represents 3.1% of the SAC, a significant area of damage.

- 3.19 The designated features of the SSSI include the oak and alder woodlands which contain the old and veteran oaks of Brocton Coppice constituting another very special and important feature. In several instances damage from recreational pressures was noted in Brocton Coppice especially from the use of mountain bikes. This is a recent trend, possibly linked to vegetation removal required for Phytophthora control (Sue Sheppard pers. comm.). Such damage can be more serious where tracks pass very close to the old oaks, causing soil compaction and erosion well within the area most likely to contain the roots of individual trees. Among the adverse impacts caused by this practice will be reduction in the oxygen-carrying capacity of the soil with damaging effects on soil micro-organisms, and inability of the compacted soils to properly absorb water. For ancient trees, well past their most vigorous growth, such impacts could cause their early and untimely demise.
- 3.20 The report was accompanied by target notes and photographs of the impacts noted during the site inspection, together with some observations of user behaviour where this helped to explain the observed impacts, groups of walkers or riders travelling abreast and causing path widening or groups diverting round obstacles or corner cutting, for example. The report noted that eutrophication from dog waste had led to non-heathland species alongside many paths and that very few paths lacked evidence of depositions of dog waste such that the evidence suggested that many dog walkers did not pick up after their dog. Some slight evidence of vandalism to signs and barriers and, (apart from signs of a large wild fire in 2010) signs of a few small fires were also noted.
- 3.21 Based on a consultation with site managers and others White et al (2012) reported that although there was no consensus on whether walkers have increased in numbers over the last ten years, there was a more consistent view that numbers of horse riders have increased slightly (perhaps linked to an increase in trekking centres), but a unanimous view that there has been a marked increase in cyclists, although some of this increase has taken place away from the SAC. The view was that cyclists were the group most responsible for creating new paths, although most users stay on paths.
- 3.22 There was a consistent view that increases in visitor numbers could lead to increases in all the impacts listed in earlier reports, including damage to soils, litter, fires, disturbance, problems with dogs, path creation and widening, habitat fragmentation, enrichment and conflicts between users. This led to the view that any increase in visitors would require mitigation. However, not all problems are equally spread either temporally or spatially across the Chase. It was noted, however, that the SAC had suffered particularly from heavy use causing local soil erosion/deposition and compaction with additional trampling damage to vegetation. Heathlands and wetlands were seen as being particularly vulnerable in this respect.
- 3.23 The view was that visitor management using signage, interpretation, press articles, prohibited access and asking that dogs be kept on leads have been generally unsuccessful. The expert panel did not see car park closures as being successful in countering unsocial behaviour (although night time closures might do so but would be very expensive in staff time and inconvenience) but that barriers to prevent roadside

parking can work. There was support for an overall car parking strategy with charging in selected car parks but mixed views on car park charging everywhere.

- 3.24 The literature review in White et al 2012 was a comprehensive summary of studies of the impacts of access, with relevance to heathland habitats. This included litter, nutrient enrichment, non-native introductions, disease, trampling damage including erosion/deposition and compaction to soils. It also included impacts from wild fires and disturbance on habitats and species.
- 3.25 A vantage point survey was undertaken in August 2011, with visitor numbers and observations recorded from 8 fixed locations in the Sherwood and Oldacre Valley, on Brindley Heath, Moors Gorse and a single roving surveyor in Brocton Coppice. (Liley & Lake 2012). During 144 hours, 1201 groups of people were observed on the heaths and 90 in the woodland. Of these 44% were accompanied by dogs, 24% were cyclists and 22% were walkers without dogs. There was some variation between points with the highest numbers of dog walkers at points 1 (Firewatch Point), 8, (Brindley Heath), 2 (Oldacre Valley, west bank) and 5 (Aspens). Cyclists were in highest numbers at points 1 and 4 (Katyn firebreak), and Horse riders at point 1 and 6 (Brocton Field). Overall the highest numbers of visitors were along the Sherbrook Valley, and heart of England Way, near Aspens, at Brocton north of the Oldacre Valley and near Glacial Boulder.
- 3.26 Most dogs were with walkers, 87% were off leads and about half were seen to stray 15m or more from their owner (30% in the woodland observations), although the proportion of these which might be considered to have been under control was not known and the proportion off paths was not recorded. Forty-six instances of dog fouling were observed with no pick-up, some 8% of all groups, however this is believed to be an under-estimate. Six percent of groups were seen to drop litter and one or more people were seen to stray off the paths in 8.6% of groups. Both cyclists and horse riders were recorded away from the bridleways.

4. The evidence base

4.1 The evidence base for the impacts of recreational use on the Cannock Chase SAC is grounded in the following:

- Information increases in recreational use in Liley et al 2009
- The comprehensive literature search in the White et al report 2011
- The on-site recreational use condition survey in White et al 2011
- The views of the expert panel in White et al 2011
- The observational study of recreational users in Liley & Lake 2012
- The latest visitor figures from Liley 2012

4.2 In their updated HRA Assessment Report of the Regional Spatial Strategy (now abolished by the Localism Bill 2011) Baker Shepherd Gillespie (2009) stated that:

“These sites (Cannock Chase and others) are currently adversely affected to a degree by recreational pressure and are at risk from an increase in households and improved accessibility in the region. The pathways by which recreational pressure impacts each site needs to be examined to understand the mechanisms by which further risk can be avoided in the RSS”.

And:

“Recreational pressure is currently affecting the site. Approximately 58% of the AONB is open access and some of the well-used habitats are already noted to be fragile. More than 1 million visitors a year. Levels of recreational use are expected to increase with implications for levels of disturbance and associated vegetation damage. The additional housing under the RSS Phase 2 and this may increase the number of people using the site for recreational purposes”.

4.3 The recent evidence based report (Liley *et al.* 2009) viewed the increase in recreational impacts from additional housing within 12 miles of the SAC boundary as likely to result in an adverse effect on the integrity of the site.

4.4 White et al (2009) recognised that a range of measures had already been put in place by SCC, FC and the AONB Team to try and reduce pressures and resolve conflicts, including joint working between land owners and others, liaison with user groups, establishment of dedicated cycle routes, education and awareness programmes, on-site management work, the creation of habitat corridors and the development of ‘honeypot’ areas.

4.5 These pressures were also recognised when the site was designated as an SAC. Under the heading of vulnerability, the SAC Natura 2000 data form⁶ lists visitor pressures, including dog walking, horse riding, mountain biking and off-track activities such as orienteering, all of which cause disturbance and result in erosion, new track creation and vegetation damage. The form also notes that high visitor usage and the fact that a significant proportion of the site is common land, (requiring Secretary of State approval before

⁶ <http://jncc.defra.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030107.pdf>

fencing can take place), means that the reintroduction of sustainable management in the form of livestock grazing presents many problems.

- 4.6 Liley et al (2009) estimated from the 2000 visitor survey that 1.27 million recreational visits were made annually to Cannock Chase, and, based on the additional housing figures available at that time conservatively calculated that the increase in visitors would be of the order of 10%.
- 4.7 In a later report based on a 2011 visitor survey (Liley 2012) estimated that the increase in new housing might result in an increase in access levels of the order of 15% (see section 7 for fuller details).
- 4.8 White et al 2012 presented data from a site inspection that showed observed impacts on the fabric of the SAC including path widening and destruction of adjoining heath vegetation, heavy trampling on paths and the creation of new paths causing the destruction of heath vegetation, with soil erosion and the creation of stony surfaces unsuitable for heathland plants and invertebrates. The extension of the path network by widening and the creation of new paths cause fragmentation of the heathland habitat and increases in disturbance to heathland fauna.
- 4.9 White et al also reported localised and intense impacts of eutrophication from dog waste resulting in replacement of heathland vegetation by non-heath species and widespread evidence that this is occurring across the SAC. Surveys have also shown increasing grass cover on the SAC with a greater frequency of bramble close to paths and roads (S. Sheppard pers. comm.).
- 4.10 They also reported a few instances of wild fires, and concerns that necessary fire breaks were being heavily used as access routes by walkers, riders and cyclists
- 4.11 These observations by White et al were supported by the observational study (Liley & Lake 2012), who noted that nearly all dogs were with walkers; that 90% of dogs were not on leads and slightly more than half of these were 15m or more were away from their owners. About 8% of groups were seen not to pick up after their dog, over 8% of visitors were seen to leave the paths and both cyclists and horse riders were noted away from the bridleways, and about 5% of groups were seen to drop litter.

5. Past and present habitat and visitor management

- 5.1 It is recognised that much of what follows is not new and that FC, the AONB Team and the County Council have been wrestling with the problems of management of habitat and visitors for many years. Many of the recommendations within this report have been tried in the past or are ongoing, but have been included for completeness.
- 5.2 The first management plan for Cannock Chase Country Park was published in 1980. Prior to 1999 Staffordshire County Council (SCC) had undertaken some habitat management with the creation of fire breaks, bracken spraying and heather cutting and burning, together with general maintenance and safety inspections. In 1997, a new management plan was prepared, following consultation with a wide range of interests and other statutory bodies.
- 5.3 In 1999 SCC was successful in a bid for Heritage Lottery Funds under the title “Saving Cannock Chase”, and embarked on a significant programme of scrub clearance, heathland re-creation from woodland, and bracken and heather management. This initiative also enabled SCC to carry out educational and awareness programmes including the production of a regular newsletter, engagement with volunteers and events such as ‘Heath Week’.
- 5.4 In 2008, SCC entered into a Higher Level Environment Stewardship Scheme, managed by Natural England and covering a ten-year period. This has provided funding for a continuation of the habitat management measures to maintain and diversify the heathland and carry out some management of the key woodland and historic features. The volunteer programme has also continued carrying out such tasks as scrub clearance, coppicing and wetland management.
- 5.5 The 1997-2007 management plan (Staffordshire County Council Countryside Services 1997) proposed broad conservation objectives for: maintaining and enhancing the landscape and biological interests of the Country Park with appropriate heathland and woodland management; minimising public pressures on sensitive habitat and species and fostering public support for suitable management regimes.
- 5.6 Broad recreation objectives were: To contain activity levels and types to those compatible with a use zoning based on use levels and habitat sensitivity; to restrict activities to those defined as low key and minimise conflicts between users; to minimise visitor penetration to the most sensitive areas compatible with legal access and to provide information and guidance to visitors. It was also proposed to investigate the provision of a bus service and the closure to through traffic of Chase Road.
- 5.7 Proposed conservation management included thinning and clearance of woodland and scrub together with conservation and replacement of veteran oaks, bracken control, gorse clearance and coppicing, heather cutting, burning and seeding, grass mowing and creation of bare ground. Ponds were to be maintained and created and firebreaks maintained.

- 5.8 Following the construction of the new visitor centre in 1994, the Park would continue to cater for B-B-Qs, carry out path and track maintenance and re-alignment, and provide information through, inter alia, leaflets, events and signage.
- 5.9 During this time SCC has worked closely with partners including the AONB and FC and the Staffordshire Wildlife Trust, RSPB, Butterfly Conservation and the West Midland Bird Club. Projects have included local and landscape projects to improve heathland connectivity, enhancement measures for small pearl-bordered fritillary butterflies and regular five year breeding bird surveys by local ornithologists through the Bird Club.
- 5.10 The SCC Countryside Service has been providing facilities and help for visitors to the Country Park and wider area of the Chase for many years. There have been major improvements to the visitor facilities at Marquis Drive and Milford, and visitors have been encouraged to use these honeypot areas in preference to the more sensitive areas of the SAC. The SCC website provides information and maps of cycling and less mobile routes, education facilities and guided walks and events. Interpretation, planning, permission for events and other land use policies have also sought to draw pressure away from the SAC.
- 5.11 SCC has also commissioned several reports in recent years to look at aspects of management of the Country Park. Notably these include a report on the feasibility of re-introducing grazing on the SAC (Penny Anderson Associates Ltd. 2005) and an investigation of the attitudes of users of the Country Park to heathland management practices and the re-introduction of grazing animals.(Resources for Change Ltd 2007).
- 5.12 The first AONB management plan was produced, after extensive consultation with the public and partners in 2004 covering the period 2004-2009. The plan noted the national and international importance of the AONB for the abundance and variety of its wildlife and supported the maintenance and enhancement of the heathlands, woodlands and wildlife of the AONB. It recognised the threats to the heathlands coming from recreational pressure including habitat damage, disturbance, fragmentation from new visitor routes and introduction of invasive species.
- 5.13 The latest management plan for the AONB 2009-2014 (Cannock Chase AONB 2009)recognises the priority to be attached to the management, restoration and protection of heathlands and the need to maintain the long-term viability of key species. It proposes policies for encouraging recreation towards areas that are less vulnerable, improving access networks to minimise degradation of sensitive areas, providing information and education together with clear signage and a range of interpretation.
- 5.14 The AONB also proposes the development of a car parking strategy which will consider location, capacity and provision of alternative means of access, the production of a co-ordinated visitor management strategy and a draft cycling strategy and has produced an AONB Interpretation Strategy and Action Plan (Cannock Chase AONB Partnership 2006). The recommendations which follow in this report are consistent with these aims.
- 5.15 The AONB has commissioned a number of reports including the State of the AONB, Tranquillity Mapping and a Peace and Tranquillity Report e. g. (Land Use Consultants

2007)(Red Kite Countryside Training Partnership 2010) , as well as a visitor survey in 2000 and the organisation of the major volunteer input into the visitor survey in 2011. In 2004, a hopper bus service was initiated although this was not as well supported as had been hoped and has now been suspended.

- 5.16 In recent years the AONB has also organised education and awareness measures and events including the production of regular newsletters, leaflets, workshops, children's activities, guided walks and activities for volunteers including management work and litter picking.
- 5.17 The Forestry Commission provides a range of activities and facilities which helps to draw visitors away from the SAC. At Birches Valley (BV) this includes a large car park, a play area for children, picnic tables, a Forest Centre, an education centre with classrooms and room hire, toilets, bike hire and café.
- 5.18 Advertised mountain bike routes include the "Follow the dog" and "Monkey" trails, both well away from the SAC and a family bike route that keeps to the edge of the SAC. Other organised activities in the FC Forests include education programmes for adults and children, a range of family events and outdoor concerts, activities for children in the forest and organised orienteering, running and other competitive events.
- 5.19 An FC visitor survey based on questionnaires for on-site visitors and those within 2.5 km of Birches Valley looked at a range of visitor characteristics and patterns during 2008-2010 (Morris, Doick & Cross 2011). Of those questioned on-site, 87% arrived by car, 3% walked and 4% came by bike. Of those who lived up to a ½-2 miles from BV, 33% and 40% respectively came weekly while of those living more than 20 miles away, 16% did so. Mean length of site visit was 2hrs 48 minutes, with 66% of visitors staying between 2-4 hours. Eighteen percent of on-site visitors came to walk dogs, 1% to ride a horse, 36% to play with kids and 18% to see wildlife.
- 5.20 Visitors to BV rated quality of their visit as depending most highly on trails and paths, nature conservation and site maintenance, with the most adverse factors being litter and fly tipping, and dogs and dog dirt. Factors which prevented people visiting local parks, woods and open spaces were lack of time (61% of responses), lack of information (19%) and lack of public transport (18%). Other questions related to the gender, age, income, disability and ethnic profiles of visitors.
- 5.21 Despite the best efforts of the three organisations to encourage people away from the most sensitive areas, and to manage those who come to the Country Park, recent studies have reported significant impacts from recreational activities on the SAC, and the likelihood that these will increase with further housing development and more residents in the area.
- 5.22 The strategy for visitor mitigation will need to sit alongside the wider suite of plans and strategies relating to Cannock Chase, particularly the AONB Management Plan, the Forest Design Plan and the Country Park Management Plan as well as the aspirations for landscape, archaeology, tranquillity and biological diversity off the SAC. However the

specific role of the mitigation plan is to avoid or mitigate for adverse effects from new housing development within the context of the Habitats Regulations.

5.23 A summary of the suggested mitigations and the range of impacts to which they apply is included as a table in Appendix 2.

5.24 In the recommendations which follow the largest area of the SAC, which encompasses the parts of the Sherbrook and Oldacre Valleys, Brocton Coppice and areas to the north and south of these, is referred to throughout as the Sherbrook Valley. When referring to all five areas of the SAC the text refers to the SAC, or qualifies this where only some parcels are relevant. When referring to the whole of Cannock Chase, the text will refer to the Chase.

6. The 2011 visitor survey

- 6.1 The recent visitor survey (Liley 2012) was based on a visitor questionnaire, largely from locations chosen to be representative of large and small car parks, and horse rider, cyclist and pedestrian access points to the SAC. Counts were of people entering or leaving the survey locations (tally data) and eighteen comprehensive counts of cars in 105 different locations in car parks and lay-bys. From the visitor survey locations (Map 1 in Liley 2012) it can be seen (from N to S) that numbers 17, 18, 21, 19, 12, 20, 6 and 14 are around the open heathland in the Sherbrook Valley and 9 is within it. Numbers 5, 8, 7, 3, 16 and 15 are on the northern and north-western boundary of the SAC which in this area is largely woodland, scrub and bracken (Environment and Countryside 2007), 11 is on the boundary of Whitehouse, and 22, 23, 24, and 25 are on the perimeter of Brindley Heath.
- 6.2 Table 14 of the Liley report indicates that at almost all the locations around the open heathland, most visits are made by car. Exceptions are at West Cannock Farm, where nearly half of all visits, and at Oldacre Valley, where a quarter of all visits, are made on foot from the adjoining residential areas. It would therefore be probable that any change in the number of car parks or spaces in these car parks, or the lay-bys along the western boundary of the SAC would have an effect on the distribution of users.
- 6.3 From the tally data in Table 2 of the Liley (2012) report, between 66-87% of all observed visitors to the heathland areas of Sherbrook Valley are walkers or dog walkers, with the highest proportions at the Commonwealth Cemetery and Duffields, and the lowest at Spring Slade Lodge (56%). The highest percentage of observed horse riders was at Spring Slade Lodge and West Cannock Farm. Cyclists used all locations (between 10-19% of all observations) except Chase Vista CP at and with the highest percentage of visits at Brindley Bottom and Brocton Coppice CPS (19 & 18% respectively).
- 6.4 On the main parcel of the SAC, the tally data (Table 2 of the Liley report 2012) revealed that the main group using the car parks off Chase Road are dog walkers (40-50%) and that dog walkers make up only 16% of visits to Spring Slade Lodge. Cyclists make up about 12-13% of visits to the Chase Road car parks except Chase Vista with only 3%. In the Sherbrook Valley at point 9, cyclists made up 34% of those questioned (although this point was on a promoted family cycle route) with 7% horse riders, 35% dog walkers and 22% walkers. Cyclists were also a substantial proportion of those who visited White House CP (24%). Dog walkers also used this car park in significant numbers (38%). About half the visits to the Commonwealth Cemetery and Aspens CP were from walkers without dogs.
- 6.5 Of those sites surveyed around Brindley Heath, there were 18% walkers at Duffields and 26% at West Cannock Farm. Duffields was most popular with dog walkers (69%) and Brindley Bottom CP was least popular with this group (26%) but popular with cyclists (19%). At the other three points (excluding Brindley Bottom) around Brindley Heath cyclists made up some 10-11% of observed visits.

- 6.6 Horse riders made up 9% of visits to West Cannock Farm, 8% of visits to Spring Slade Lodge CP, 5-6% of visits to Stepping Stones and Chase Road Corner CP and 3% to Glacial Boulder and Brindley Bottom CP. At other locations they made up only 1-2% while White House CP seemed little used by horse riders. Within Sherbrook Valley 7% of visits were by horse riders, and at Abrahams Valley this increased to 31% of visits.
- 6.7 Only general conclusions on potential impacts can be drawn by looking at the percentages of different users as their effects are different. For example, a single horse can cause more damage to soils and vegetation, but a dog walker can cause more disturbance to wildlife species, especially mammals and birds.
- 6.8 From these figures tentative conclusions are:
- Those visiting to walk a dog form a greater proportion of visits to the car parks off Chase Road in the north than off Camp Road to the south.
 - Cyclists are visiting Sherbrook Valley from car parks further away, including, Abrahams Valley and Kingsley Wood Road, with above average numbers at Stepping Stones, White House CP and with 93% of all visits to Moors Gorse.
 - Access by horse riders seems to be largely from fewer points than other users. The greatest numbers were reported arriving via Abrahams Valley in the east, Stepping Stones and Seven Springs in the north, Spring Slade Lodge in the west and West Cannock Farm in the south.
- 6.9 The high numbers of cyclists visiting Moors Gorse reflects the access from this point to the FC mountain bike trails. It also reflects FC car park charges which encourage bikers to use this car park rather than Birches Valley. Improvements to the Network Rail crossing could also facilitate better access to the SAC for bikers.
- 6.10 Horse riders may also be visiting Sherbrook Valley from the east, particularly Abrahams Valley with lesser, but still significant percentages from Spring Slade Lodge, Stepping Stones and Chase Road Corner.
- 6.11 The Liley (2012) visitor report (Figure 5) also noted that attractive scenery was the most popular reason for visiting particular places, followed by 'good for walking' and 'close to home'. Visiting heathland (33% of answers) and forest (27% of answers) had a similar level of response, perhaps indicating that other things being equal, visitors are attracted to both in similar proportions. This could have implications on efforts to persuade new visitors to go to forestry areas rather than to SAC heathland.
- 6.12 The distribution of visitors across the area may have been influenced by the Phytophthora outbreak and the signs asking visitors to stay away from certain areas, resulting in other areas being more heavily visited than would normally be the case.

7. Additional Housing, people and visitors

- 7.1 The visitor report (Liley 2012) summarises the new housing allocations with a projected increase of some 78,000 new homes over 757,000 existing homes, an increase of around 10%.
- 7.2 The report considers the distribution of existing and new housing in 1km bands within each Local Authority area which shows that the largest percentage increases in housing will be within 1km, between 9-11km and within 15-16km from the SAC.
- 7.3 Just over 88% of visitors come from Cannock Chase, Stafford Borough, Lichfield District, Wolverhampton, South Staffordshire, Birmingham City, East Staffordshire, and Sandwell , with 84% from the first five of these (Map 8). The greatest numbers of existing visitors come from north and south of the SAC (Map 25) but the highest visit rate per household come from the north, east and west (Map 26) and a similar pattern might be expected from new residents.
- 7.4 It is not possible to calculate from the visitor survey whether the 10% change in housing levels (around the SAC) will translate into an increase of 10% in visitors⁷ from the same area, it may be more or less, but it will undoubtedly increase the visitor levels and therefore impacts on Cannock Chase and the SAC. Using the ratio of new to existing housing within 1km bands from the SAC and applying this to the existing visitor numbers from within each band, an estimate of likely change has been derived of 15%. Excluding mountain bikers also produces an estimate of a 15% increase.
- 7.5 In summary therefore, the increase in new housing may result in an increase in access levels of around 15%, this figure representing the cumulative impact of development within 20km of the SAC.

⁷ See visitor report for full explanation

8. Habitat Management

- 8.1 It is generally accepted that those heaths that are in good condition and less fragmented are better able to support a greater richness and abundance of heathland plants and animals (Joint Nature Conservation Committee 2009). The earlier report suggests that Cannock Chase SAC is at risk of degradation from existing recreation pressures (White, Underhill-Day, & Liley 2009), and this is confirmed by more recent studies. Mitigation could therefore serve to reduce impacts from either existing or new recreational pressures by improving the resilience of the heathland. This could be achieved through an increase in the size and a reduction in the fragmentation of the existing heathland habitats and by improving and diversifying the heathland habitats to increase the variety and extent of habitat niches for heathland flora and fauna.

Size and fragmentation.

- 8.2 The SAC heathland is bounded most closely on the east by conifer plantations, many of which are Corsican Pine. There are wide tracks along the edge of the SAC to access the forest but their frequent mowing contributes to a reduction in the area of mature heath and encourages intensive use by walkers, riders and cyclists with multiple paths and local erosion. It is understood that due to red band needle blight, which in the UK mostly affects Corsican pine, there is currently a moratorium on planting this species when the existing plantations are felled, and future plantings may be of Scots pine, which is more resistant. However, as Scots pine is a native species, seed blown across the heath is more likely to regenerate and cause scrub encroachment.

Recommendation Box 1

1. When felled, that in accordance with the felling programme, a width of 50-75m of existing plantation along the eastern edge of the SAC, should remain unplanted, and be managed as open heath with some scrub to give a 'soft' edge. The existing fire break on the SAC should be migrated onto this 50-75m strip and regular mowing of the wide SAC break should cease, retaining just a narrower management track here. Recreational users should be encouraged to use the new route along the edge of the plantation. The felled strip should be carefully designed to give areas of undisturbed woodland/heathland interface for breeding nightjars.

- 8.3 The SAC covers five separate blocks of heathland of which Sherbrook Valley is by far the largest, followed by Brindley Heath and Rugeley Quarry. An existing partnership which includes the AONB, Natural England, Butterfly Conservation and the RSPB is working towards identifying and establishing linkages between different heathland fragments and enlarging these. FC has already established three heathland corridors between fragments and these are currently the subject of a bid to SITA for financial support to manage these areas by: Clearing scrub, bracken, gorse and bramble; creating suitable habitat for the small pearl-bordered fritillary butterfly; and putting in place the necessary infrastructure

to allow the introduction of cattle grazing on one of the three areas; and monitoring the condition of the grazed and ungrazed compartments. This grazing project could be used as a pilot for a larger grazing project on the wider heathlands and as a means of gauging public reactions to the presence of stock. These compartments could also become links in a scheme to graze the wider heathlands. It is recognised that it is impractical to connect the most easterly SAC parcel north of Furnace Coppice to the remainder.

- 8.4 Despite these advances, and bearing in mind that 90% of Staffordshire's heathland has been lost since the 1800's, a longer term and more ambitious programme of heathland re-creation should be considered. It is recognised that investigation will need to be made of a number of potential limitations for heathland re-creation when considering locations including soil conditions and seed bank survival. However large seed banks can survive under planted conifers for many years and although there may be some changes in soil nutrient status compared to the adjoining heaths, studies have concluded that the main limitation on heathland regeneration is likely to be burial of the seed bank by conifer litter, which can be mechanically removed (Pywell *et al.* 2002). Where the seed bank has been seriously depleted it is also possible to reinforce it with seed from harvested heather shoots (Pywell, Webb, N. R., & Putwain 1996).
- 8.5 Assuming that investigation finds that most of the soils in the area east of the SAC are suitable for heathland restoration, then increasing the size of existing heathland areas and improving links between them would give the greatest ecological benefits (Webb 1989)(Webb & Vermaat 1990). Pushing back the boundaries of the forest on the eastern edge of the SAC and establishing a further link between Rugeley Quarry and the heath at White House as well as creating a wider and more direct link between Rugeley Quarry and Brindley Heath should all be considered. It is accepted that detailed discussions would be needed and that as the landowner, the views of the Forestry Commission will be central to any scheme for further enlargement of the heathlands.

Recommendation Box 2

1. Complete the open heathland connections between the Sherbrook Valley and the SAC parcels at Brindley Heath, White House and Rugeley Quarry, and between Whitehouse and Brindley Heath. These connections should be at least 200m wide and consist of open heath with or without scattered trees but with no continuous woodland.
2. Pursue discussions and seek further funding for the 'Connecting Cannock Chase' project to enlarge existing heathland blocks and improve connections between them.

Habitat condition and management

- 8.6 Earlier reports drew attention to the effects of atmospheric nitrogen inputs, which over time, and in the absence of management, can mediate a change from dwarf shrub (heather and its allies) vegetation to grassland on nutrient poor soils. Atmospheric

nitrogen inputs are being monitored on Brindley Heath and a report on the findings is due out in May 2012.

- 8.7 Burning and cutting can reduce the nutrient build up but without follow-up management can also encourage grasses at the expense of dwarf shrub vegetation. Most heathland, including much of Cannock Chase was grazed until early in the 20th century (Staffordshire County Council undated), with grazing and trampling maintaining a balance between dwarf shrubs and grasses, helping to control scrub and creating a mosaic of vegetation structures and heights which provided niches for other plants and animals. While in the past grazing of cattle and sheep took place, there is now a fear of sheep worrying by dogs, a growing problem wherever there are sheep on open access land. Sheep are also less effective grazers of tall purple moor grass vegetation and bramble.
- 8.8 Grazing seems to have been first recommended in 1994 in a report by Land Use Consultants. A more recent detailed report on the feasibility of grazing (Penny Anderson Associates Ltd. 2005) concluded inter alia:
- 8.9 Grazing has been identified as a desirable management mechanism on the Chase in various report going back to 1994:
- Vegetation in all units on the Chase is 'in desperate need of grazing'
 - That grazing is feasible and that the whole site should be grazed
 - Conflict with dogs is the main reason to exclude sheep from a grazing scheme
 - That initially 58 cows and 16 ponies be used to graze the SAC with cattle in the summer and ponies all year round
 - That studies have shown very low levels of incidents between cattle and people with almost all these involving people with dogs in fields and most with suckler cows accompanied by young calves
 - That a cost/benefit analysis showed more benefits than costs from the introduction of grazing
- 8.10 This report was followed by a further report on the feasibility of a shepherded grazing system using sheep (Swanson, Silcock, & Kiernel 2008). This report recommended:
- A no-frills shepherded system using a pedigree breeding flock of in-hand sheep as the best option.
 - A sheltered holding off the heaths for lambing in the spring and to take stock to at nights
 - Employment of a single shepherd, with other staff delegated to look after sheep at weekends and when the shepherd was on leave or away
 - Sheep would be walked onto the heath and back to the holding area each day all year round and will be accompanied by the shepherd or other staff
 - Sheep would not be put on the heath at weekends or when the shepherd is on annual leave, sick or away.
 - Control and protection of sheep would be by trained dogs

- Problems with dogs attacking sheep would be mainly dealt with by avoiding busy times and areas, publicity, advertising location of sheep, closing paths and having a guard dog.

- 8.11 The proposal to introduce grazing as a pilot project (see 3.3 above) onto re-created heathland on Forestry Commission land on the Chase will, if implemented, have a number of benefits if later a larger scheme is taken forward. These include familiarisation by the public to the presence of livestock on the Chase, a dry run to resolve any problems which might not be foreseen in a larger scheme, and the provision of a heathland grazing operation locally for referral during consultations for a larger scheme. The pilot will however be on a small area away from the most heavily used public areas and efforts will need to be made to engage the public if it is to act as a demonstration of grazing practice.
- 8.12 There are concerns that the introduction of grazing animals will further the spread of *Phytophthora pseudosyringae*, which has seriously affected bilberry on parts of the Chase. SCC survey and monitoring evidence strongly suggests that *Phytophthora* has been spread within the SAC by deer, humans, dogs and horses (Ali Glaisher pers. comm.).

Recommendation Box 3

1. Start to take the necessary steps as soon as possible to reintroduce extensive grazing onto the whole of the SAC beginning with the Sherbrook Valley and Brindley heath and in line with the recommendations of the Anderson report. The preparatory steps will need to include a costed implementation plan, and a strategy for consultation with the public and other stakeholders.

- 8.13 While there might be a place for sheep grazing on the SAC, it is not recommended as the main grazing mechanism. Shepherded grazing would, in our view not achieve comparable species and structural diversity as extensive grazing by cattle and ponies, would require two staff together with back-up land and buildings, would lead to under-grazed areas close to roads and in thick vegetation or broken ground and would result in major problems with dogs and dog owners and possibly other users. Whilst the initial costs of an extensive grazing scheme with fences would be higher, running costs would be considerably lower and fencing, as noted in 3.15 below could have other advantages.
- 8.14 Shepherding of cattle has not been demonstrated to be effective and is impractical with ponies. Enclosures can be effective as they allow precise grazing pressures to be achieved and can be sited to avoid as far as possible paths and tracks. However they are labour intensive, are intrusive as fenced enclosures when used and as grazed squares, circles or other shapes in the landscape, when taken down. Enclosed animals have little room for manoeuvre when chased by dogs or in the event of fire, and are unable to follow natural patterns of behaviour on small areas.

- 8.15 Perimeter fencing would allow extensive grazing of the whole area, allows animals to move between feeding, resting and watering areas freely, to seek natural shelter and shade and avoid close contact with humans and pets and vice versa.
- 8.16 Most of the SAC is common land over which the public have rights of access on foot, so that pedestrian gates or bridle gates would need to be provided at all access points through a perimeter fence. Access gates for horse riders and cyclists would be required only on bridle ways. A perimeter fence could also define the edge of the SAC, providing a natural point for signage and guidance to visitors, preparing them for entering an area that is different from the rest of the Chase with sensitive and protected flora and fauna, and with signs advising of harmful activities or behaviours.
- 8.17 Any fencing scheme will require public consultation in accordance with the guidance in 'A Common Purpose'-a guide on consultations on common land prior to a submission to the Planning Inspectorate for approval. Such a consultation will need to be targeted at the SAC and a specific grazing scheme if this is proposed. However, normally, a consultation should begin with no decisions taken and should allow the public to express views on all practical management measures for both wildlife conservation and recreation by people, based on the provision of comprehensive information. It is noted that a wide ranging consultation exercise was carried out in 2006 (Resources for Change Ltd 2007) and that this revealed that there was substantial support for the re-introduction of grazing. However, although valuable, this report would now, in our opinion, be too old to constitute the basis for a first consultation in accordance with "A Common Purpose".
- 8.18 Consultations on future management, whilst intended to garner the views of stakeholders on management options, can also be used to educate, inform and engage with the public and other stakeholders about the ecological importance of the heathlands, access impacts and other issues. While a separate awareness programme could also carry out these functions, there would in our view be advantages in including this within a single consultation. This could include the availability of funding and the communication of contentious issues and problems as part of a general consultation on wider issues, rather than appearing to pick on particular issues or user groups and could result in some generic solutions linked to proposed management activities on which a general consensus has been obtained.
- 8.19 There are direct benefits to be derived from grazing the major parts of the SAC in terms of habitat improvement and robustness. These, coupled with the indirect benefits of any fencing and grazing scheme on public perceptions and behaviour, make such a wide consultation potentially one of the most valuable mitigation measures.

Recommendation Box 4

1. Carry out a full consultation on management of the SAC to include both habitat and visitor management options. The former should include the option of re-introducing grazing on the four westerly parcels of the SAC. The consultation should follow the guidance in 'A Common Purpose' where this is relevant, and should be used not only to obtain the views of stakeholders to inform decision making, but also as a way of informing and educating them on the existing and potential future problems faced by the SAC and the options for addressing these.

- 8.20 Existing conservation management of the habitats on the SAC by SCC follows guidance provided by Natural England on the Conservation Objectives for the designated features of interest and Views about Management (sections 2.5-2.8 above). Previous management is summarised in sections 2.25-2.34 above.

Recommendations Box 5

1. Seek to achieve favourable condition across the SSSI/SAC
2. Carry out a continuing programme of heather management by cutting and burning to create an uneven mosaic of heather ages and structures
3. Maintain a continuing programme of bracken and scrub control on the SAC
4. Continue to manage gorse for invertebrates and birds
5. Create and manage suitable bare ground surfaces for invertebrates
6. Maintain and where appropriate create ponds
7. Carry out a site inspection to identify areas suffering, or at risk from, erosion and divert or repair paths, bridleways and tracks as necessary
8. Continue to manage area of bilberry affected by *Phytophthora*
9. Take account of likely visitor behaviour in the timing and location of management to minimise potential fragmentation of habitat and disturbance to wildlife.
10. Continue programmes to eliminate invasive introduced species and monitor for any further introductions

- 8.21 Fire breaks are intended to prevent the spread of fires but they are not infallible. They are a first line of defence for fire fighters and more importantly, provide a recognisable network of driveable access routes for emergency vehicles and personnel. A narrow path can stop a slow moving fire, whilst a 15m firebreak may not stop a fire driven by a strong wind. However, in practice annual mowing of firebreaks means that they become used as access routes by walkers. Cyclists and horse riders. The network of firebreaks therefore fragments heathland blocks and can be a source of disturbance.

- 8.22 The size of most wild fires is a function of how quickly they are reported and such reports acted upon, and the advent of the mobile phone means that fires are now reported far

more quickly than in the past. Despite this, occasionally where there are ideal conditions of wind and dryness, fires can still get away, and when this happens, even wide firebreaks can provide little barrier to a hot and fast moving fire. In some circumstances, previous heather management by cutting or burning can provide temporary firebreaks but this should not be the primary goal in the locations of these forms of management. Firebreaks should generally be about 5m in width including any paths or tracks that run alongside (and allowing for wider firebreaks where there are good strategic for doing so) and wherever possible, firebreaks should be sited on adjoining land rather than on the SAC itself.

Recommendations Box 6

1. Review the existing firebreak network on the SAC based on a risk assessment which takes account of the fire history of the site, the high risk areas adjoining roads and honeypot areas, topography and vulnerable features (e.g. power lines, nearby housing) and the patterns of sensitivity and inflammability of the vegetation.
2. Review contacts with Fire and Emergency services and fire plan including the need for additional on-site equipment and water supplies.
3. Review arrangements for the public to be made aware of the danger of fires and the means of reporting them.
4. Review restrictions on, and provisions for, picnic fires and B-B-Qs

9. Recreation Management

- 9.1 Recreation management on-site can be broken down into point of arrival (which in turn is influenced by mode of transport), type of activity on site and location of activity on site. There is a right of access under the Countryside and Rights of Way Act to the open heathland on foot, but horse riders and cyclists should be keeping to the official bridleways or permissive routes. There is open access to most of the Forest Estate as a matter of FC policy.
- 9.2 Measures to mitigate for increased numbers of visitors to the SAC as a result of new housing provision in the area will achieve their objective either by diverting new users away from the SAC or by ensuring suitable behaviour should they visit. The same objectives will be achieved if the visiting patterns and behaviour of existing visitors can be changed as well, such that their combined impact does not increase from existing levels. Outside of these mitigation measures, it is necessary to reduce existing impacts on the SAC, but resources to do this would not be part of the mitigation package funded by developer contributions.
- 9.3 The White et al (2009) report noted that demand for car parking at Marquis Drive has increased and outstrips provision, that at times the Cannock Forest Centre car park is at capacity and that lay-by parking tends to develop in an unplanned way from informal parking. It also noted that some car parks are little used or remote from visitor centres, others (particularly those that are isolated or screened) suffer from anti-social behaviour and theft, and entrances and exits from some car parks can be hazardous or have long rutted and potholed entrance roads.
- 9.4 In the recommendations that follow it is assumed that close liaison between SCC, FC the AONB and other relevant bodies will be necessary on most initiatives including the preparation of strategies and reviews.

Car parks and parking

- 9.5 Earlier work by Liley et al (2009) showed that the distribution of car parking and laybys around the Chase is heavily biased towards the perimeter of the SAC parcels in the Sherbrook Valley and at Brindley Heath with a total of c. 1086 car parking spaces distributed around 86 car parks and lay-bys.
- 9.6 Possible options in relation to the distribution and capacity of car parks and unofficial parking provision include closing car parks, providing new car parks, reducing capacities and introducing charging. Where car parks or unofficial parking is restricted or closed, visitors will move elsewhere. Some closures might be seen as so restrictive as to lead to widespread opposition and an abandonment of plans. However it is apparent that there are clusters of car parks around the SAC and areas of the Chase where car parks are few and far between.
- 9.7 Car park charging is inherently problematic as the car parks where access is best discouraged by charging are mostly those smaller car parks in sensitive areas. Here revenue would be minimal, costs could exceed revenue and vandalism could also be a

problem as a number of these car parks are isolated. Where no mains electricity is available, solar panels might be needed but these are also vulnerable to vandalism. Charging in large heavily used car parks whilst likely to provide the most revenue, will encourage visitors to divert to the smaller car parks in more sensitive areas.

- 9.8 If a more widespread system of car parking is envisaged it will need to be applied to most car parks, and should be seen as a revenue raising measure rather than as a way of diverting visitors from one car park to another. Other measures which could be considered would be a parking charge across all car parks on Bank Holidays and at weekends, with a system of annual permits for locals, and a voluntary charging system at other times. Clearly to agree any overall policy and put in place the necessary equipment would take some time.
- 9.9 Although the latest visitor analysis (Liley 2012) suggests that car numbers do not correlate with car park capacity this result could be due to over-capacity generally, a skewed distribution towards small and remote car parks, the inclusion of lay-bys in the analysis and other factors. It is considered that the progressive reduction in the capacity of car parks, in some places linked to improvements in surfacing and access to some car parks but not others, is a better way of manipulating visitor distribution across the area than parking charges.
- 9.10 The closure of Chase Road or restrictions in its use (e.g. turning it into a toll road) has also been considered. This is not recommended at the present time due to the likelihood of a strong adverse public response, because it would entail a long and difficult bureaucratic process and because it would not address one of the main current problems on the SAC which is extensively used by bike riders, and to a lesser extent, horse riders. However a review of the options for the future of Chase Road is desirable as measures may be required and some steps such as additional surveys and preliminary measures might need to be pursued. Surveys have shown that the main users of the Chase Road parks and lay-bys are dog walkers and walkers.
- 9.11 However parts of southern end of the Sherbrook Valley contain some of the least fragmented and disturbed areas of heathland with some of the highest levels of use associated with the Heart of England Way (Liley & Lake 2012). The public bridleway network here is also at a much lower density than further north, offering the opportunity to reduce pressures if visitors can be persuaded to more consistently stay on the rights of way. The progressive re-siting of some of the car park capacity in this area towards the visitor centre would help to maintain this as a quieter area within the SAC.
- 9.12 The outright closure of car parks is not generally recommended (although it has been considered), but rather a gradual reduction in parking provision, backed up in some places by improvements to car park surfaces and approaches. It is suggested that these measures, if adopted, be reviewed in two years' time and if they are not working, then additional measures be considered.
- 9.13 Other authorities managing large sites with a number of car parks have also sought to deal with these problems, and may have examples of workable solutions and good

practice. In the Malvern Hills a precept, levied through the Council Tax provides some funding in this area (Natural England pers. comm.).

Recommendations Box 7

Many of the recommendations which follow should be taken forward in partnership with the AONB, FC and the Highway Authority.

1. Review the use of Chase Road to consider closure to through traffic, closure of the central section and restriction of parking to car parks at each end, restrictions to existing car park size or other measures to limit increases to visitor numbers into Sherbrook Valley from this area.
2. Review the car parking provision at the south western and southern end of Sherbrook Valley with a view to re-siting some car park provision nearer the visitor centre.
3. Plan for the progressive removal of lay-by parking on the whole of the Chase over the next five years, with priority given to laybys on Chase Road and Camp Road between Chase Road and Penkrige Bank Road and, and take steps to encourage all visitors to use car parks only. This will facilitate future visitor management over the whole of the Chase.
4. Produce a long term strategy for car parking across the Chase. This could include:
5. A gradual re-distribution of car parking from around the SAC to areas further away where local access is to less sensitive areas.
6. Contact with other authorities managing similar large sites with multiple car parks to look at best practice elsewhere. Ashdown Forest, The New Forest and the Malvern Hills are possible examples
7. A review of the distribution and capacity of car parks
8. A review of safety and condition of access to all car parks
9. Reviewing the need to improve access tracks to car parks close to the SAC and to change the distances of car parks from the highway to make them more or less attractive to visitors
10. A review of car parking charges to reflect costs of management
11. Consideration of the provision of additional car parks adjoining under-used areas of the Chase combined with the closure of some car parks adjoining the most sensitive parts of the SAC.
12. Identification of any necessary works to ensure safe car park exits/entrances onto roads
13. Identifying car parks where surfacing access tracks and providing improved signage could encourage visitors away from the SAC
14. Review the success of these measures in reducing access to the more sensitive parts of the SAC and if necessary take additional steps (e.g. by reducing car park size) to encourage diversion to less sensitive areas
15. Periodically review car park provision in the light of changes in visitor patterns and numbers

Horse riding

- 9.14 It is clear from White, McGibbon & Underhill-Day (2012) that one of the problems on the SAC is the impacts from ridden horses. This is one of the user groups whose activities can result in damage to vegetation path widening, soil erosion and compaction and the creation of new paths. However, horse riding has, in the opinion of local experts, increased far less than cycle use over the last ten years and much of the increase that has taken place is from local stables.
- 9.15 Ridden horses are small in numbers compared to other users and appear to access the SAC from fewer points. Nearly 40% of horse riders visit daily, most (57%) spend two hours or less and they travel a median distance of just over 5km. Many horse riders will be associated with local stables which are identifiable and in limited numbers, making contact with horse riding users potentially easier than with other groups. Those horse riders who bring their horses from outside the area are also more easily identifiable than some other groups as they will be towing horse boxes.

Recommendations Box 8

1. Visit all local stables/trekking centres as part of a consultation to explain the importance of the SAC and the need to keep to bridleways, hear concerns and discuss solutions
2. As part of these discussions examine with owners and managers of stables which routes they normally follow and what alternatives off the SAC would be available and are, or could be made, more attractive
3. Set up an invitation meeting with local stables and horse riders to explain and discuss as above, including whether additional permissive paths or links are needed
4. Review car parking provision for horse boxes in relation to the SAC. Consider providing better provision for parking and manoeuvring horse boxes at sites away from SAC.

Cycling

- 9.16 Damage from individual cyclists to soils and vegetation is probably less than from horses but greater than walkers due to differences in ground pressures (White, McGibbon, & Underhill-Day 2012). Promoted cycle routes use firm and robust tracks but many mountain bikers seek out more adventurous routes and do not stay on the marked routes and bridleways (Liley & Lake 2012). There also seems to be a new practice of off-road night time cycling using powerful lamps. No research has been carried out on the effects of this on wildlife. Cyclists can travel much further than walkers in a shorter time and are more likely to spend longer in the area than either walkers or dog walkers. Mountain bikers spend substantially longer in the area than all the other main users with nearly 40% spending 2-3 hours and 20% half a day (Liley 2012).
- 9.17 It is clear from the data from the latest visitor survey, and from the views and observations of local experts that cycling has been and still is a rapidly growing activity

across the Chase. The median distance travelled by mountain bikers to reach the Chase is 11.2 km, further than for any other group (Liley 2012). It has been suggested that 80% of cyclists using the Chase bring their own bikes. Cyclists constitute over 10% of all users in all the car parks surveyed in the 2011 visitor survey (except Chase Vista Car Park).

- 9.18 Cyclists represented about a third of all users recorded within the Sherbrook Valley. The promoted family cycle route across Sherbrook Valley may be encouraging cyclists to use the other official and unofficial routes and to spread out across the SAC. National cycle route 5 is planned to cross the SAC between Marquis Drive and Brocton. Information is not available as to whether this will increase pressure on quieter parts of the SAC to the south, or whether the proposal can be used to divert existing pressures onto a new route. To the north of the SAC there is a multiplicity of bridle ways and a review and rationalisation of these could reduce impacts.
- 9.19 Evidence from the visitor survey (Liley 2012) found that mountain biking stands out as the activity that many have started on the Chase in the last five years, and whose participants visit now more than in previous years. There has also been a more recent change with cyclists riding at night off-road with powerful lights to guide them (White, McGibbon & Underhill-Day 2012), an activity which as far as is known has not been assessed in terms of potential disturbance to wildlife.

Recommendations Box 9

1. Contact cycle groups including Chase Trails to establish a forum for cyclists where information can be exchanged, views expressed and regular contact maintained.
2. Establish methods for informing cyclists on site about the SAC and the need to keep to bridleways. These would be via contacts in car parks and distribution of printed material, including periodic campaigns with material under windscreen wipers for those vehicles with bike racks, and distribution from visitor centres, local bike hire facilities and the Birches Valley CP. Particular attention should be paid to car parks known to be heavily used by cyclists (including Moors Gorse, Stepping Stones, Whitehouse, Brook Lane Corner, Kingsley Wood Road and Brindley Bottom) and to attending any major cycling event.
3. Discuss with Sustrans whether there is a need for a scoping study on the effect of the new cycle route on the SAC
4. With FC examine the provision of alternative routes away from the SAC which could attract families and long distance cyclists away from the designated sites. Reduce any active promotion of routes on or across the SAC.

Walkers and dog walkers

- 9.20 Walkers and dog walkers make up the majority of users visiting the surveyed car parks around the SAC. Walkers travel a median distance of 6.6 km and dog walkers 4.2 km, the

latter, the shortest distance of any user group, showing that dog walkers tend to be more local than other users. A higher proportion of dog walkers spend up to one hour and less than two hours on site and a higher proportion visit every day than any other users.

- 9.21 The observation study (Liley & Lake 2012) found that most dogs are off leads, some of which stray well away from their owners, and that some groups did not pick up after their dog.
- 9.22 An earlier report by Jenkinson (2009) suggested a structure for the management of dog walkers including clear guidance on how dog walkers should manage their dogs, what restrictions are in force and what enforcement measures have been adopted and when these will be executed within a framework where the interests of dog walkers are recognised and their needs met as far as possible.
- 9.23 White et al (2009) noted that the main issues on the SAC linked to dogs were enrichment from dog waste, uncontrolled dogs off leads and the training of gun dogs in inappropriate locations or times.

Recommendations Box 10

1. Set up regular liaison with local dog walkers to the SAC, building on work already carried out with dog walkers by the AONB team.
2. In cooperation with FC, the AONB team and dog walkers representatives consider further initiatives with respect to dog walkers on the SAC. These should include consideration of inter alia:
 - The possibility of setting up volunteer groups with local dog walkers to encourage them to police themselves via peer pressure.
 - Review existing websites to promote locations for dog walking – with live information on each site (i.e. livestock presence, management or forestry works taking place) and use of colour coding indicating at which locations dogs are currently welcomed.
 - Setting up an enclosed and safe dog training area and enlisting help from professional dog trainers to offer classes
 - Improvement to particular dog walking routes.
 - Encourage reporting of irresponsible dog owners with dogs scaring other users, chasing deer etc.
 - Leaflets for dog walkers, signs in car parks and wardening explaining issues of disturbance and fouling by dogs and asking dog owners to keep dogs under proper control (particularly during the bird breeding season and in sensitive areas) and pick up and take away dog mess. Keep records of observations of unacceptable behaviour and dog walkers ignoring these provisions.
 - Wardening approaches to commercial dog walkers and gun dog trainers to move to less sensitive areas off the SAC.

Education and awareness measures for all users

- 9.24 The aim will be to raise awareness of the importance of the SAC and to underline that this area is different from the rest of the Chase and requires different behaviours from users.
- 9.25 The publicity attached to the Phytophthora outbreak has shown that some measures to engage the public are more successful than others and that the methods used require constant review to remain effective. It has also shown that there is a small minority who will ignore all requests and guidance.
- 9.26 Some publicity methods will have disadvantages e.g. notices attached to windscreens can lead to litter problems (S Sheppard pers. comm.) but this might be a price worth paying if the method works. To be effective, regular switching between different methods of engaging the public will be desirable (along with monitoring the results) so that such disadvantages will be short lived.

Recommendations Box 11

1. Discuss with FC and AONB the insertion of text and illustrations in management plans, promotional literature and signs etc. to raise awareness of the issues by drawing attention to the special nature and fragility of the SAC and the need for responsible visitor behaviour and to encourage visitors to go to areas away from the SAC. Review promotional material encouraging cyclists or horse riders to go to Sherbrook Valley and the promoted routes.
2. With the AONB and FC review the desirability of producing some of the educational and promotional material as collaborative productions with joint branding.
3. Produce and promote printed material which includes clear maps showing bridleways in the Country Park and on Brindley Heath, together with an explanation of the importance of the SAC and need for cyclists and horse riders to keep to bridleways. Material should include contact details for reporting incidents, fires etc.
4. Redesign and enhancement at Marquis Drive to focus visitor routes and access away from Brindley Heath
5. Review the funding and resource issues across SCC, FC and the AONB to scope any potential savings or fund raising initiatives through further joint working

General recommendations

- 9.27 Although SCC, FC and the AONB are all carrying out liaison, education and awareness programmes, these are not generally specifically aimed at explaining the importance of, and recreational impacts to, the SAC, nor are they targeted at those who visit the designated site. Some existing activities may be capable of amendment or new initiatives either as single or temporary events or more permanent measures may be appropriate. In some cases measures will be aimed at a single user group or may be more generic and hope to influence all users.
- 9.28 A strategic approach to explaining the importance and vulnerability and highlighting the difference between the SAC and the rest of Cannock Chase needs to be agreed between the partners and expressed consistently across all the media used to engage with the public. The average member of the public can consult much of the literature and website information available from various bodies, and can visit the area without realising the special nature of the SAC, which is also designated as a Country Park.
- 9.29 The changes in emphasis and new initiatives recommended in this report will require additional resources. It is understood that discussions between land managers have suggested the need more staff resources although this is not necessarily the view of SCC. A good working relationship exists between SCC and FC on visitor management and closer liaison is already under discussion (S. Sheppard pers. comm.).
- 9.30 If a consultation over future long term management of the SAC, including grazing is undertaken in accordance with A Common Purpose, a number of the recommendations made here could be subsumed into this process.
- 9.31 The successful implementation of on-site measures and wardening, liaison with user groups, initiation of awareness and education initiatives and other measures described here will require additional resources of staff and finance. Additional staff may be needed not only within the organisations managing visitor access across the Chase but also to liaise between the three organisations. To be effective such liaison will need to be more frequent than occasional formal meetings and may need to be via a dedicated staff member on a daily or weekly basis. Once measures have been agreed, an implementation plan with resource implications will need to be prepared (see later).
- 9.32 The issue of funding will be an important element in any mitigation plan. It is envisaged, however, that much of this will come from developer contributions.

Recommendations Box 12

a Communications and liaison

1. Review existing contacts and where necessary carry out a programme of visits and presentations to raise awareness with local schools and organisations (e.g. Parish Councils, community groups, residents associations etc.) most likely to visit the Chase.
2. Establish regular contact with local communities via liaison groups, and give these a role in decision making on expenditure on issues such as path maintenance, car park improvements and signage
3. Produce an education pack for schools on heathland wildlife and the need to protect it and promote this through web sites, blogs, twitter etc.
4. Review existing websites for those visiting Cannock with information and advice for each user group on walking, dog walking, riding and cycling in the SAC
5. Maintain contact with orienteering, geo-caching and other specialist outdoor recreational groups and steer their activities away from SAC heathland areas, particularly (but not only) during the bird breeding season
6. Liaise with schools/colleges/universities to give advice and guidance on their requirements for site based activities whilst safeguarding the SAC.
7. Accompany the above initiatives with suitable press releases, articles in local newsletters, local and national specialist magazines for horse riders (e. g. BHS newsletter) and cyclists (e.g. Adventure Cyclist magazine).
8. Liaise with the AONB and FC on any events to be held to minimise impacts on the SAC from additional visitors to the area. Re-scheduling some events to times outside the spring and summer may reduce disturbance to wildlife.

b Routes and Signage

9. Review existing bridleway network within the SAC to examine existing use levels and whether rationalisation and changes which reduce heathland fragmentation and disturbance could be made without detriment to the enjoyment of users.
10. Review the path and bridleway routes within the AONB with a view to providing alternative routes and encouraging visitors to walk or ride on routes away from the SAC.
11. Experiment with imaginative ways of diverting visitors from the unofficial paths across the SAC and back onto official rights of way and monitor results
12. Carry out a detailed inspection of the paths and tracks in Brocton Coppice and divert those that are causing erosion or damage to the root plates or bases of veteran trees.
13. Make especial provision for signage and path networks that encourage visitors arriving at the Country Park visitor centre to travel away from Brindley Heath and visitors to the eastern edge of the Sherbrook Valley to travel onto the path and track networks to the north-east.
14. Establish that main paths and bridleways offering a route away from the SAC remain attractive and passable to users.
15. Install easily replaceable signs at main exits to all car parks around the SAC with information on the need to keep to bridleways, with contact details and suitable maps, and with encouragement to use of routes away from the SAC.
16. Maintain a way marking system on SAC for bridleways

Recommendations Box 13

c Monitoring and review

1. Maintain a careful record of any observations of cyclists or horse riders ignoring requirements to keep to bridleways including any exchanges with wardens
2. Monitor methods of encouraging visitors to keep to rights of way, observe desirable behaviours (e.g. picking up after their dogs, keeping dogs under control) and build up a data base of their effectiveness including with particular users, at particular seasons, events etc.
3. At the end of 2012 and 2013 review the success of these measures and consider whether further measures (e.g. bylaws, selective prosecution) is necessary to control persistent or serious breaches of the provisions to protect the SAC.

d Resources

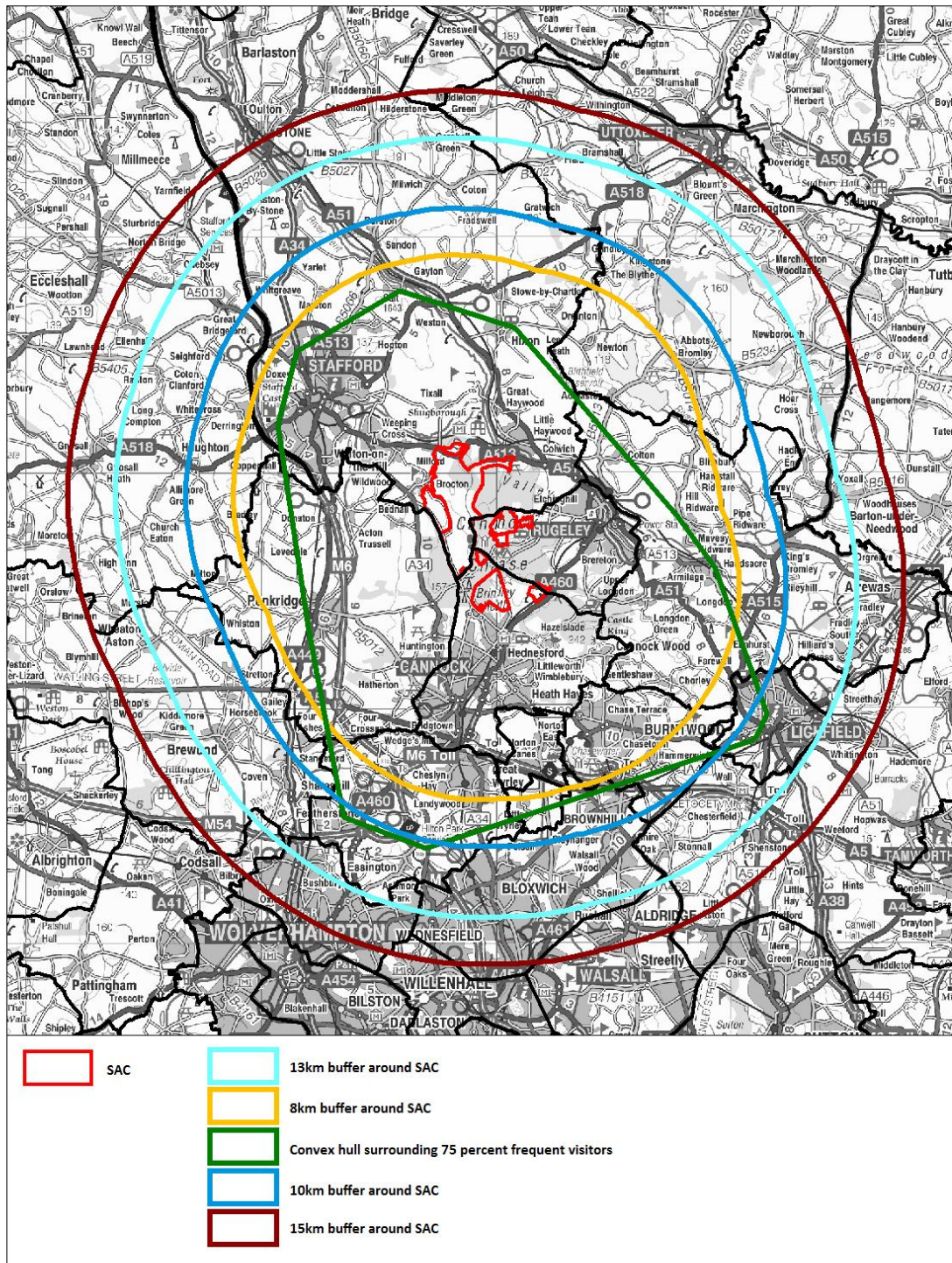
4. Review the need for the appointment of a post to be responsible for additional informal and frequent liaison between the AONB team, SCC and FC on visitor issues across the Chase
5. Increase wardening activity on the SAC to manage access and to increase face-to-face contact with visitors on the SAC, to police undesirable activities, liaise with police and emergency services as required and to promote and reinforce the messages from other literature and interpretation about site sensitivity and alternative facilities away from the SAC
6. Appoint additional staff to produce educational, interpretational and awareness raising literature, maps, signs and other material, to run events and liaise with local communities, schools and colleges and other organisations.

10. Off-Site Measures

Background and options

- 10.1 The main conclusions from the visitor survey (Liley 2012) of relevance to this report are:
1. Most visitors (83%) are walkers, dog walkers and cyclists
 2. The highest percentages of dog walkers come to the car parks in the north-west and west (Chase Road) of the Sherbrook Valley and from the east and south of Brindley Heath
 3. The highest percentage of cyclists and mountain bikers come to Moors Gorse and car parks to the north, north-west and south-east of Sherbrook Valley and the north-west and east of Brindley Heath
 4. The largest percentage of horse riders come from the west of Sherbrook Valley with some from the south-west and north. The highest percentage of horse riders to Brindley Heath come from the south.
 5. Users who were most likely to visit every day were dog walkers and horse riders, with about 30-40% of all other users visiting weekly
 6. About 80% of dog walkers, 60% of walkers and horse riders and 50% of cyclists visit for two hours or less
 7. Most people travel to the SAC by car except at Brook Lane Corner and Oldacre Lane (close to the village of Brocton) and West Cannock Farm (close to housing on the edge of Cannock). At Brook Lane Corner and West Cannock Farm, most arrivals by car have travelled 5km or less.
 8. For all interviewees, the median distance between home and the location where interviewed was 6.2 km (Table 16). Seventy-five percent of all interviewees lived within 15km of Cannock Chase.
 9. For all interviewees excluding mountain bikers the median distance between the home postcode and the location interviewed was 5.8km. Seventy-five percent lived within 13km.
 10. A line (convex hull) drawn around 75% of those visitors who visit the Chase weekly or more frequently includes most of Stafford and Cannock, the edge of Lichfield and areas to the south (Map 3).
 11. The line that most closely accords with this convex hull is an 8km buffer around the SAC (Map 3). Such a buffer therefore encompasses around 75% of the visitors who visit weekly or more frequently
 12. Median distance (from home postcode to interview location) by walkers and cyclists is similar at about 6.7km; dog walkers and horse riders travelled less far (4.3-4.5 km); and mountain bikers travelled furthest (11.2km).
 13. About 50% of visitors come from Cannock Chase District and Stafford Borough which with Lichfield District, Wolverhampton and South Staffordshire provide about 85% of all visitors
 14. Based on postcodes given by visitors, the number of visits per house declines to a consistently low level at around 10-15 km from the Chase
 15. Few people walk more than 2km to visit the Chase
 16. The best estimate suggests that there are about half a million car visits each year

17. Off-site mitigation measures could include:
18. Provision of Suitable Alternative Natural Green Spaces (SANGS) including dog walking areas off the SAC and close to settlements
19. A car parking strategy across the Chase with enhanced parking provision and access in areas away from the SAC
20. Alternative walking and dog walking areas on the Chase should be sought, and promoted (especially near housing areas). These will need to offer a suitable and attractive alternative to users
21. Provision of information to promote visiting to alternative destinations away from the Chase
22. New bus services around the Chase together with suitable promotional measures
23. Traffic calming measures on the roads across the Chase where these adjoin or run close to the SAC



Zone of influence and SANGS

- 10.2 In the Thames Basin and Dorset Heaths areas a zone of influence extending out 5km from the SAC/SPA heathlands (and at Ashdown Forest a zone extending out 7km from the SAC heathlands) has been defined, based on around 75% of visits originating within this zone, and within this 5km, developer contributions are required to fund mitigation measures. For all small residential developments these funds are collected on the basis of the house size (number of bedrooms) and paid into a central fund set up by the local authorities collectively. For larger developments (50+houses is the suggested threshold) mitigation funds are also collected but additional targeted green space would be provided with the development. Residential developments within 400m of the SAC/SPA are not permitted as the view is that these cannot be mitigated for, although other non-residential developments in this zone are not ruled out. Larger development of say 100 houses or more outside the 5km zone are required to provide information for an appropriate assessment to determine whether bespoke mitigation may be required.
- 10.3 Proposed mitigation measures are then submitted to a panel made up of representatives of the Local Authorities together with Natural England, and allocations made. One of the primary mitigation measures is the provision of alternative green space, known as Suitable Alternative Natural Green Space (SANGS). Various standards have been adopted for SANGS with provision being between 8-16ha per thousand additional residents within the zone of influence. Other mitigation measures can be funded by developer contributions, for example on-site management measures, or education and awareness programmes.
- 10.4 At Cannock Chase, an analysis of the latest visitor survey shows that 75% of those interviewed came from within 15 km of the survey point. Adopting the same principles as on the Thames Basin Heaths and Dorset Heaths, this suggests that developer contributions should be levied across a zone 15 km from the edge of the SAC. No new residential development should be permitted within 400m of the SAC boundary because of the difficulty of attracting people away from the SAC if they live very close by making it unlikely that mitigation can be effective.
- 10.5 However the patterns of visiting and the situation at Cannock Chase are different from those on Thames Basin and Dorset Heaths. In the latter, the designated site is made up of many parcels of heathland, mostly close to built up areas and generally with adjoining farmland or smaller areas of forestry. At Cannock, the SAC is largely within a very large area of forest, open to the public and constituting one of the largest areas of amenity land in the West Midlands.
- 10.6 As a result, those users looking for a substantial area of open country in which to roam, cycle or ride a horse, come considerable distances to Cannock and most visitors, once they arrive, make no distinction between the open access forests and the SAC heathland, seeing both as part of the same amenity area.

- 10.7 Visitors to the Dorset and Thames Basin heaths by contrast generally see these as their local green space and many residents will have a choice of heathland parcels equidistant from their homes to choose from. These differences are reflected in the 5Km buffer around the Dorset and Thames Basin heaths from within which 75% of visitors to the heaths originate, whereas at Cannock, 75% of visitors originate from a far larger envelope of 15km around the site. Without careful planning, visitors to the rest of the Chase can use it as a gateway to the SAC and there is evidence that, particularly horse riders and cyclists are already doing so.
- 10.8 This wider catchment for the majority of visitors to Cannock Chase is partly a function of the regional rather than local appeal of this large composite site, and partly a result of the different distribution of housing with a much lower density of houses nearby than the Dorset or Thames Basin heathlands. The scale of Cannock Chase, with its attractive scenery, range of habitats and open views cannot be easily replicated. In this situation, SANGs are most likely to be effective in providing an alternative for local green space users such as dog walkers, walkers and joggers.
- 10.9 Considering the different groups, it seems unlikely that mountain bikers, seeking a long bike ride (65% stay more than 2-3 hours according to the latest visitor survey) are going to be diverted from visiting the Chase by the provision of alternative, and almost inevitably, much smaller facilities. Most bike riders arrive at other parts of the Chase, and some of these then ride across to the SAC. It is therefore suggested that the main mitigation for cyclists, rather than the provision of new facilities away from the Chase, will derive from co-operative measures across the AONB between partners. Such measures should divert cyclists onto less sensitive areas and provide further long distance and suitable routes and to encourage them to stay on bridleways when on the SAC. An exception might be the provision of bike parks for youngsters or bespoke adventure courses for adults on sites on or off the Chase.
- 10.10 Similar considerations apply to horse riders, particularly those who are locally based or use local stables, who come to the area because of the size and variety of the routes offered. These are unlikely to be diverted by the offer of much smaller and less diverse rides on SANGS elsewhere.
- 10.11 Provision of SANGS would therefore be mainly for those undertaking shorter walks and dog walkers who make up nearly 70% of all reported users. These users mostly arrive by car, but visitors do access the SAC on foot from Brocton and Cannock.
- 10.12 The convex hull line on Map 3 shows the area from within which 75% of frequent users originate. To be effective SANGS would need to divert new or existing users from the SAC to other areas. These could be near Cannock and Brocton to the east, near Stafford to the north and Lichfield to the south-east. Studies elsewhere suggest that the minimum size for a SANGS for dog walkers should be about 30-35 ha. Four SANGS of this size would amount to some 120-140ha of additional open space away from the SAC and in locations that would divert some pressure away from this sensitive area.

10.13

Recommendations Box 14

1. With partners, including FC, AONB and Local Authorities, institute a framework for collecting and allocating developer contributions within an area between 400m and 15 km from Cannock Chase SAC but with a higher contribution rate within the 400m-8km zone. Contributions would be collected from all net new residential units falling within Use Class 3 or staff residential accommodation within Use Classes C1 and C2.
2. For development of more than 50 houses there should be a requirement for targeted additional open space associated with the development.
3. New residential development will not be permitted within 400m of the SAC boundary
4. Information for an Appropriate Assessment may be required for large developments of over 100 houses outside the 15km zone, subject to advice from Natural England
5. Four SANGS are provided for new residential development, each of 30-35 ha or more (well away from the SAC and spread around the SAC to the north, south-east, south-west and west).
6. That two of the proposed SANGS are targeted towards local visitors on foot. These should consist of two areas of approximately 30-35 ha each, close to the existing settlements of Brocton and Cannock.
7. Any proposed SANGS must be available for public access in perpetuity
8. Proposed SANGS comply with Natural England SANGS quality guidance
9. Funding should be considered from the developer contribution fund for mitigation on the SAC, educational, promotional and awareness initiatives, improvements to existing open space facilities and provision of new access facilities on currently owned or newly-acquired land. Contributions should be available for measures taken on the SAC, within the Chase and elsewhere within the 15km zone.
10. Carry out a survey of potential use by visitors to the Chase and provide bike parks for youngsters or bespoke adventure courses for adults, either off the AONB or within the Chase but well away from the SAC.

10.14 It is therefore suggested that SANGS provision is largely targeted at walkers and dog walkers but with some provision where appropriate for other groups, and that targeted initiatives (most of which are detailed earlier in this report) for all groups are carried out on site. All of these should be funded by developer contributions.

10.15 There are clearly a number of alternatives for zones which could be used to establish a charging structure for SANGS and other mitigation measures, and the clearest of these are shown on Map 3. It is suggested that in order to provide a simple, easily understood and straightforward structure for developer contributions, there should be only two zones within a distance of 400m to 15km from the edge of the SAC. Fifteen km represents a zone from within which 75% of all visitors originate and is in line with a similar measure adopted elsewhere on the Thames Basin heaths, the Dorset Heaths and the Breckland Heaths. It is suggested that an inner zone with a higher level of payments extends from

400m to 8km, a zone that includes 75% of all those visitors who visit weekly or more frequently and make up approximately 70% of users (Table 7 from Liley 2012).

Other initiatives

- 10.16 Car parking provision across the Chase and on adjoining land should be examined by partners. If the recommendation above, to progressively close all lay-bys over five years is adopted this will reduce parking provision by about 80 spaces or 7%. Reductions in the size of car parks on the western side of Sherbrook Valley would remove another 34 spaces, but closure and replacement of two car parks on the east side of Brindley Heath would have no overall effect on numbers. The total result of these measures would be to reduce car parking spaces on the AONB by about 10%, with most reductions around the SAC and the removal of most unofficial parking.
- 10.17 At the same time it would be helpful if the partners entered into discussions to institute a review of parking across and around the Chase with a view to making further adjustments in the light of developing visitor patterns and numbers. This could include car park closures in some areas and the opening of additional car parks in other areas.
- 10.18 Substantial parts of the AONB appear to be underused [see Map 15 attached to the evidence based report (Liley *et al.* 2009)]. These include large areas of forest, parts of which are to the north-east of Brindley Heath and to the east of Sherbrook Valley. In both cases, encouragement to visit these areas could draw pressure off the SAC. However the path and bridleway network on these areas appears in places to be disjointed, with only The Heart of England Way offering a long distance route. A review of the path and bridleway network off the SAC to explore the possibility of additional circular routes of sufficient length to attract walkers and horse riders might be helpful. (It is recognised that the Chase Trails and the FC have provided considerable facilities for cyclists, with two dedicated long distance mountain bike trails, and that this work is ongoing).
- 10.19 A similar review of walking trails off the SAC, with newly made or signed routes diverting walkers away from the Sherbrook and Brindley Heath parts of the SAC would also be helpful. The AONB team do carry out path inspections on a sample of paths as part of a scheme run by the County Council (Red Kite Countryside Training Partnership 2010). It would be helpful if information was available if any of the paths leading away from the SAC were included within this, and that the main paths were included by the County Council as part of their programme.

Recommendations Box 15

1. Produce leaflets and maps showing walking and riding routes outside the AONB and away from the SAC and encouraging the use of these by signage and way marking, and by the provision of other facilities if these are being considered in the area (e.g. seats, creation of open views).
2. Consider whether any further linkages can be made between the path and track networks on the Chase and the surrounding countryside.
3. Produce material to be distributed via Tourist Information Centres in their literature, sent to hotels and guest houses, restaurants and other outlets in the area, which encourage visitors to go to parts of the Chase away from the SAC

10.20 In the past a bus service has been provided (Cannock Chase Hopper bus service) in an attempt to reduce car traffic but this proved to be uneconomic. A further attempt should be made to examine this option. This could look into views and preferences for starting points and destinations, fare structures and daily and seasonal availabilities. The viability of re-introducing a bus service for visitors to Cannock Chase could be tested via a questionnaire approach to existing visitors to establish what support there would be for a service.

Recommendations Box 16

1. Examine the viability of re-introducing a bus service for visitors to Cannock Chase, via a questionnaire approach to existing visitors to establish what support there would be for a service.
2. Maintain the traffic calming measures on Chase Road.

11. Monitoring

- 11.1 Monitoring of changes in potential impacts to the SAC habitats and their causes is a necessary part of the mitigation process. In some cases it encompasses surveys at the beginning of the process and subsequent monitoring. In some areas the base line data is currently inadequate or unknown and monitoring will establish more accurate or reliable figures.
- 11.2 At present, biological recording includes an approximately five-yearly Phase 1 habitat survey together with surveys of heather age classes, density of bracken stands and scrub types. A five yearly breeding bird survey is undertaken by the West Midland Bird Club and Butterfly Conservation volunteers carry out an annual small pearl-bordered fritillary survey. The Phytophthora outbreak is also monitored annually to inform a continual treatment programme.
- 11.3 A record of the historic incidence of management burns and accidental or deliberately started fires has been secured going back to the late 1940s (S. Sheppard pers. comm.). This is to be stored electronically, and with GPS use, it should be possible to continue to record fires on an annual basis where these are reported.
- 11.4 Biological recording will continue to be needed to monitor potential impacts on habitats and species. This will include the need to monitor whether further degradation of soils and vegetation is occurring and to help identify new types of impact.
- 11.5 Condition monitoring by Natural England is based on a standard set of criteria which can be judged by a site inspection. On heathland, this will include habitat extent, cover by ericaceous plant species and bare ground, frequency of characteristic species and species indicating negative trends (Joint Nature Conservation Committee 2009). While such a site inspection will note signs of disturbance or erosion, the methodology and time available does not allow for a systematic record of human impacts such as path widening, creation of new paths, impacts from dogs etc. other than from any notes taken by the observer. The monitoring programme should be discussed with Natural England so that results can feed into the formal Condition Surveys carried out by NE staff at approximately six yearly intervals.

Recommendations Box 17**a Monitoring for habitat condition**

1. Set up and monitor vegetation transects across a sample of paths and tracks to check for path widening and vegetation damage
2. Set up a sample of long term quadrats across Sherbrook Valley, Whitehouse and Brindley Heath to establish a base line for the effects of any future management including grazing. Some of these quadrats should exclude large grazing animals such as deer or cattle.
3. Analyse soil samples from Brocton Coppice to determine soil nutrient levels particularly around veteran trees close to car parks
4. Record the condition and take a photographic record of a sample of veteran trees in Brocton Coppice and over a period of five years include all the veteran trees in the record. Particular regard to be paid to direct damage or vandalism, evidence of soil erosion or compaction around root systems, or the creation of new paths or tracks close to trees and measures taken to remove or reduce these.
5. Continue to monitor the distribution and extent of the Phytophthora outbreak

b Monitoring for visitor patterns

6. Following the work done in 2010/11, repeat car counts at regular intervals, providing repeat data over seasons and years to monitor changes in car visitors and impacts of mitigation measures on access patterns. Counts will need to cover a wider range of dates, times of day and times of year
7. Collate a map of all access points to the site – i.e. all formal car-parks, informal car-parks and foot access points. At a stratified sample of these some accurate counts of visitors should be made, through direct observation, automated counters or similar to give detailed information on the numbers of visitors. These counts should be designed to be repeated at regular intervals.

c Monitoring of visitor impacts

8. The extent of impacts should also be monitored. This will include: (Fuller details of some of these methods is contained in White et al (2009).
9. Recording all fires on a standard proforma together with a GPS record of the extent of each fire
10. Recording erosion/compaction on a sample of fixed points on paths/tracks using fixed point photographs and standardised methods and equipment. Repeating the measurements and photographs at intervals. (The existing fixed point photographic record maintained by the AONB team may form a good basis for this).
11. Establishing a regularly walked transect to record dog faeces
12. Using aerial photos to select a sample of areas to check path widening and rates of creation and abandonment of paths
13. Maintaining an incident record book and as far as possible standardise incident recording
14. Repeating the observational and condition surveys carried out by Footprint Ecology (Liley & Lake 2012)(White, McGibbon, & Underhill-Day 2012) at five year intervals

d Other monitoring

15. Five yearly checks of the distribution of new housing, with numbers and occupation dates. The former can be collected by GIS and the latter from planning and rating authorities.

12. References

Baker Shepherd Gillespie. (2009) Development of Options for the West Midlands RSS in Response to the NHPAU Report. Government Office of the West Midlands, Birmingham.

Cannock Chase AONB. (2009) Cannock Chase AONB Management Plan 2009-2014. Cannock Chase AONB, Stafford.

Cannock Chase AONB Partnership. (2006) Cannock Chase AONB Interpretative Strategy 2006. Cannock Chase AONB, Stafford.

Environment and Countryside. (2007) Cannock Chase Country Park 2005 Phase 1 Survey. Staffordshire County Council, Stafford.

Jenkinson, S. (2009) Project Report: Improving the Management of Access for Walkers with Dogs on Cannock Chase. Cannock Chase AONB / Natural England.

Joint Nature Conservation Committee. (2009) Common Standards Monitoring Guidance for Lowland Heathland. JNCC, Peterborough.

Land Use Consultants. (2007) Tranquility Mapping in Cannock Chase AONB. Cannock Chase AONB.

Liley, D. (2012) Cannock Chase Visitor AONB Survey. Unpublished Report, Footprint Ecology, Wareham, Dorset.

Liley, D. & Lake, S. (2012) Cannock Chase Visitor Observation Study. Unpublished Report, Footprint Ecology, Wareham.

Liley, D., Underhill-Day, J.C., White, J. & Sharp, J. (2009) Evidence Base Relating to Cannock Chase SAC and the Appropriate Assessment of Local Authority Core Strategies. Unpublished Report, Footprint Ecology, Wareham. Dorset.

Morris, J., Doick, K & Cross, D. (2011) The Contribution of Birches Valley Forest Centre to Quality of Life. Forest Research, Farnham.

Natural England. (2008) Conservation Objectives Cannock Chase SSSI (Staffordshire). Consultation draft, Natural England, Peterborough.

Penny Anderson Associates Ltd. (2005) Cannock Chase Grazing Feasibility Study. Countryside Agency / English Nature / Staffordshire County Council.

Pywell, R.F., Pakeman, R.J., Allchin, E.A., Bourn, N.A.D., A., W.E. & Walker, K.J. (2002) The potential for lowland heath regeneration following plantation removal. *Biological Conservation*, 108, 247–258.

Pywell, R.F., Webb, N. R. & Putwain, P.D. (1996) Harvested heather shoots as a resource for heathland restoration. *Biological Conservation*, 75, 247–254.

Red Kite Countryside Training Partnership. (2010) State of the AONB-Cannock Chase ANB. Report to the AONB Committee, Red Kite Training Partnership Ltd, Stonehouse, Gloucestershire.

Resources for Change Ltd. (2007) Consultation on the Management of Cannock Chase Country Park Heathland. Unpublished Report to Staffordshire County Council, Resources for Change Ltd, Welshpool.

Short, C., Hayes, E., Selman, P. & Wragg, A. (2005) A Common Purpose: A Guide to Agreeing Management on Common Land. Gloucester University, Gloucester.

Staffordshire County Council. (Undated) Cannock Chase Country Park Management Issues.

Staffordshire County Council Countryside Services. (1997) Cannock Chase Country Park Management Plan 1997-2007. Staffordshire County Council Countryside Services, Stafford.

Swanson, J., Silcock, P. & Kiernel, A. (2008) An Investigation into Shepherded Grazing on Cannock Chase Country Park. Staffordshire County Council.

Treweek, J. & Ursus Consulting Ltd. (2008) Screening Opinion for Stafford Borough, Cannock Chase District, South Staffs District, Lichfield District and Staffordshire County Councils Core Strategies in Respect of Cannock Chase Natura 2000 Site.

Webb, N.R. (1989) Studies on the invertebrate fauna of fragmented heathland in Dorset, UK, and the implications for conservation. *Biological Conservation*, 47, 153–165.

Webb, N.R. & Vermaat, A.H. (1990) Changes in vegetational diversity on remnant heathland fragments. *Biological Conservation*, 53, 253–264.

White, J., McGibbon, R. & Underhill-Day, J.C. (2012) Impacts of Recreation to Cannock Chase SAC. Unpublished Report, Footprint Ecology, Wareham.

White, J., Underhill-Day, J. & Liley, D. (2009) Cannock Chase Visitor Impact Mitigation Strategy. Unpublished Report, Footprint Ecology, Wareham Dorset.

Appendix 1-Indicative Costings

These costings are totalled at the end of the table to give an indicative range of mitigation costs. The largest single item is the SANGS, the figures for which have been taken from a range of bare land prices for properties currently for sale in Staffordshire. It is anticipated that the necessary funds to provide these mitigation measures will be raised via developer contributions. This could be from contributions per property built, per bedroom or some other measure. The amounts set could vary between different LA areas or sub areas, distance bands or other measure. Determination of the precise methodology and amounts will need to be agreed between partners and is beyond the scope of this report.

Para	Recommendations	Capital Costs*	Revenue costs (p.a. or p.a. equivalent)
	Heathland fragmentation		
8.2	Retain un-planted strip alongside existing plantations and manage as open heath and firebreak	Part of felling programme	£1500
8.5	Complete heathland connections		
	Grazing		
8.12, 8.19	Carry out a public consultation on the introduction of grazing and visitor management options on the SAC	£18,000	
8.12-8.19	If grazing and fencing scheme adopted, application to PINS and public inquiry	£20,000-30,000	
8.12-819	If scheme approved install fencing and gates	£260,000	
	Habitat management		
8.20	Continue heather management programme		Existing costs
8.20	Continue bracken and scrub control		Existing costs
8.20	Maintain gorse management for invertebrates and birds		Existing costs
8.20	Create bare ground habitat for invertebrates		£750
8.20	Repair eroded tracks and paths where appropriate		£950
8.20	Continue to manage Phytophthora affected bilberry		Existing costs
8.20	Eliminate other introduced alien plants		Staff & Volunteers
	Fire		
8.22	Review existing fire break network	Staff	
8.22	Review fire plan and emergency services contacts	Staff	
8.22	Review measures to raise public awareness of, and precautions against, fire	Staff	
	Car Parking		
9.13	Produce a long term strategy for car parking across the Chase, with an aim of reducing visitor pressure on the SAC including: <ul style="list-style-type: none"> A review of signage location, distribution and capacity of car parks 		

Para	Recommendations	Capital Costs*	Revenue costs (p.a. or p.a. equivalent)
	<ul style="list-style-type: none"> • A review of safety and condition of car park access • A review of the desirability of charges for car parking • A review of access and parking on and from Chase Road. • A review of car park provision to S and S-W of Sherbrook Valley • A plan for the progressive removal of all lay-by parking • A plan for works identified by the reviews 	Consultant £4500	
	Horse Riding		
9.15	Visits to local stables		Staff & new staff
9.15	Invitation meeting to stable and horse riders		Staff & new staff & partners
9.15	Review parking provision for horse boxes		Staff & partners
	Cycling		
9.17	Establish regular contact with cycling groups		New Staff
9.17	Improve communication with cyclists including production of literature, attending events etc.		New staff & partners
9.17	Discuss need for scoping study with Sustrans		Staff
9.17	Discuss with partners alternative facilities off the SAC and reduce promotion of SAC routes		Staff & new staff & partners
	Walkers and Dog walkers		
9.21	Set up regular liaison with dog walkers and consider <ul style="list-style-type: none"> • establishing volunteer dog wardens from dog walkers • reviewing web sites to promote dog friendly areas and acceptable behaviour • Production of leaflets on dog control and picking up • Setting up secure areas for dog training and encourage involvement of professional trainers • Improve wardening of dog walkers • Approaching professional dog walkers and gun dog trainers to encourage these uses in less sensitive areas 	2,000 3,000	Staff & New staff
	Education and awareness programme		
9.24	Review all existing promotional and educational literature with partners		Staff & new staff &

Para	Recommendations	Capital Costs*	Revenue costs (p.a. or p.a. equivalent)
			partners
9.24	Produce and promote printed material encouraging responsible behaviour on the SAC	5,000	Staff & new staff
9.24			
9.24	Review facilities and layout at Marquis Drive to focus access and activities away from the SAC		Staff & partners
9.24	Review funding and resource issues across partners to look for savings and joint fund raising		Staff & partners
	Communications and liaison		
9.30	Review contacts and carry out community liaison		Staff & new staff & partners
9.30	Produce an education pack on heathland for schools	3,000	Staff & new staff & partners
9.30	Review information on websites		Staff & new staff & partners
9.30	Maintain close contact with specialist activity groups		Staff & new staff & partners
9.30	Liaise with local schools and colleges		Staff & new staff & partners
9.30	Input to local press and national specialist magazines		Staff & new staff & partners
9.30	Liaise with partners on events		Staff & new staff & partners
	Routes and signage		
9.30	Review bridleway network on SAC and take steps to encourage cyclists and horse riders to keep to these		Staff & new staff
9.30	Review path and bridleway network on rest of AONB to encourage use away from SAC		Staff & new staff & partners
9.30	Carry out detailed inspection of paths in Brocton coppice and divert those causing damage to veteran trees	Consultant (see later under veteran trees)	
9.30	Review signage at Country Park and eastern edge of SAC and where necessary redesign to divert visitors away from SAC. Total cost of signage and way marking (see below)	6,000	Staff & new staff
9.30	Keep path condition under review		Staff & new

Para	Recommendations	Capital Costs*	Revenue costs (p.a. or p.a. equivalent)
			staff
9.30	Establish signage on main routes to SAC to encourage responsible behaviour and use of alternative areas		Staff & new staff & partners
9.30	Maintain a way marking system on SAC bridleways		Staff & new staff
9.30	Monitor visitor behaviour on SAC and responses to initiatives to encourage responsible behaviour or use of alternative areas and review measures annually		Staff & new staff
9.30	Review the need for additional staff to undertake actions listed above which could consist of Including support costs): <ul style="list-style-type: none"> • Full time visitor and partner liaison officer • Additional full time site warden • Part time site wardens for busy periods 		£41000 £35000 £21000
	Off-site measures		
10.15	Institute framework for collecting developer contributions		LAs
10.15	Institute additional open space standards for developments of 50 houses or more		LAs
10.15	Seek advice from NE on developments of 100 houses or more outside 15km zone		LAs
10.15	Research the establishment of four SANGS of 30-35 ha around SAC with two targeted at pedestrian visitors from Brocton and Cannock	Cost £1.75m-3.15m	
10.15	Research potential use of bike parks, adventure courses to divert visitors away from SAC	£200,000	
	Other initiatives		
10.19	Produce leaflets and maps encouraging use of routes outside AONB and review signage, way marking and facilities for these	£10000	£2000
10.19	Produce literature for wider circulation to hotels, restaurants etc. encouraging use away from SAC		£2000
10.19	Review linkages with paths, tracks etc. within AONB and wider countryside		Staff & new staff & partners
10.21	Examine the viability of re-introducing a bus service via a questionnaire to potential users	Consultant, staff & volunteers £3000	
	Monitoring		
	<i>Habitat</i>		
11.5	Set up vegetation monitoring transects across paths and tracks	Consultant	

Para	Recommendations	Capital Costs*	Revenue costs (p.a. or p.a. equivalent)
11.5	Set up vegetation monitoring quadrats across larger parcels of SAC	Consultant	
11.5	Carry out analysis of soil samples in Brocton Coppice	£1200	Staff & new staff
11.5	Record condition of veteran trees in Brocton Coppice		Consultant £2500
11.5	Continue to monitor Phytophthora outbreak		Staff
	<i>Visitor patterns</i>		
11.5	Carry out car counts during year		Staff & Volunteers
11.5	Carry out survey of all access points and carry out visitor counts on a stratified sample of these	£5000	£2500
	<i>Visitor impacts</i>		
11.5	Record all fires on a standard proforma		Staff & new staff
11.5	Establish fixed photographic and standardised recording of erosion/compaction of worst affected areas	£500	Staff
11.5	Establish regular recording of dog waste on set routes		Staff or volunteers
11.5	Select sample of paths and record path widths, and path creation/abandonment via aerial photos		Staff and volunteers
11.5	Maintain incident book		Staff
11.5	Repeat observation and condition surveys every five years	£25,000	
	<i>Other monitoring</i>		
11.5	Carry out five yearly checks of new housing and occupancy dates		Consultant £800
11.5			
	Total costs	£2.32-3.73 million	£107,500

Costs are approximate and have been derived from comparison with similar work where available. Costs of SANGS have been derived from an assessment of recent prices for bare farm and amenity land per ha within the Staffordshire area and are for guidance only.

Appendix 2 Impacts and Mitigation.

This table summarises the range of mitigation measures and relates them to particular impacts they relate to.

Mitigation	Disturbance to wildlife	Eutrophication from dogs	Fires	General	Habitat fragmentation, veg. trampling, creation of new access points & routes	Management	Spread of disease	Track & path widening, erosion, path creation, trampling, compaction	Vandalism and litter
Increase heathland area and connect heathland blocks (increase heather cover and connectivity).	✓				✓				
Carry out consultation on the introduction of grazing and use this as an opportunity for a wider education and awareness campaign on the other issues listed below.	✓	✓	✓		✓		✓		✓
Fence and graze SAC (reduce access points, encourage users to stay on bridleways, increase heather cover and resilience).	✓	✓	✓		✓			✓	
Review fire break network (reduce use as access paths and tracks).			✓		✓	✓		✓	
Create bare ground to improve provision for flora and fauna away from visitor routes (to increase resilience of SAC).	✓				✓	✓			
Reduce visitor pressure via the production and implementation of a car parking strategy including a review of all aspects of existing car parks and potential changes. (to reduce, focus and control access by car).	✓	✓	✓		✓		✓	✓	✓
Review access to the SAC and the wider Chase for horse boxes and ways to encourage all users away from the SAC.	✓	✓	✓		✓		✓	✓	✓
Review the desirability and practicality of the re-introduction of a bus service via a questionnaire survey (to establish demand and likely user. A bus service would enable measures to encourage visitors away from the SAC via location of routes, stops etc.).	✓	✓	✓		✓		✓	✓	✓
Liaison with local stables and horse riders, cyclists and walkers (encourage use off the SAC and reduce off-bridleway	✓		✓		✓		✓	✓	✓

Cannock Chase SAC Mitigation Report

Mitigation	Disturbance to wildlife	Eutrophication from dogs	Fires	General	Habitat fragmentation, veg. trampling, creation of new access points & routes	Management	Spread of disease	Track & path widening, erosion, path creation, trampling, compaction	Vandalism and litter				
use).													
Review promotional and educational activities and literature with partners (to reduce promotion of SAC and increase promotion of AONB and other areas).	✓	✓	✓		✓		✓	✓	✓				
Review facilities at Marquis Drive to focus attention away from SAC	✓	✓	✓		✓		✓	✓	✓				
Education and awareness programme (encourage users to stay on bridleways).	✓	✓			✓		✓	✓		✓	✓	✓	✓
Education and awareness programme (to encourage users to other parts of the Chase away from the SAC)	✓	✓	✓		✓		✓	✓	✓				
Liaise with local community (to encourage activity off the SAC and reduce impact on the SAC).	✓	✓	✓		✓		✓	✓	✓				
Input to specialist groups and the wider community via websites, national and local press and specialist publications (to encourage users away from the SAC and reduce impacts on the SAC).	✓		✓		✓		✓	✓	✓				
Liaise schools and colleges and events' organisers and produce education pack for schools (to encourage a greater understanding of the importance of heathland and the need to reduce impacts on the SAC).	✓		✓		✓		✓	✓	✓				
Liaise with specialist users and events' organisers (to encourage the use of bridleways and reduce activity on heathland).	✓		✓		✓		✓	✓					
Route way-marking and signage (to encourage users to keep to bridleways).	✓		✓		✓		✓	✓					
Routes and signage (to encourage users to other parts of the Chase away from the SAC).	✓	✓	✓		✓		✓	✓	✓				
Establish four SANGS (to encourage users to go to alternative locations).	✓	✓	✓		✓		✓	✓	✓				
Research bike parks and adventure courses (to encourage users to go to alternative locations).	✓		✓		✓		✓	✓	✓				
Community liaison (to reduce off bridleway use of SAC).	✓	✓	✓		✓		✓	✓	✓				

Cannock Chase SAC Mitigation Report

Mitigation	Disturbance to wildlife	Eutrophication from dogs	Fires	General	Habitat fragmentation, veg. trampling, creation of new access points & routes	Management	Spread of disease	Track & path widening, erosion, path creation, trampling, compaction	Vandalism and litter
Use of literature to encourage use of path and bridleway network outside AONB.	✓	✓	✓		✓		✓	✓	✓
Discuss Sustrans proposals (to reduce potential impacts on and off bridleways).	✓		✓		✓		✓	✓	✓
Reduce promotion of SAC routes with partners (to reduce potential impacts on and off bridleways).	✓	✓	✓		✓		✓	✓	✓
Keep under review and repair selected paths and tracks (encourage users to stay on bridleways).	✓	✓	✓		✓		✓		✓
General review of path and bridleway network (to reduce use of SAC routes).	✓	✓	✓		✓		✓	✓	✓
Inspect and divert paths in Brocton Coppice where veteran trees threatened by trampling and soil compaction.					✓			✓	
Way mark bridleways on SAC (to encourage users to keep to these)	✓	✓	✓		✓		✓	✓	✓
Review path and bridleway linkages between AONB and wider countryside.	✓	✓	✓		✓		✓	✓	✓
Liaison with dog walkers (to encourage them to keep to the bridleways and pick up after their dogs.	✓	✓					✓		
On site wardening and volunteer dog wardens (to encourage dog walkers to keep to bridleways and pick up.	✓	✓					✓		
Publicity, literature etc. (to encourage dog walkers to keep to paths and pick up.	✓	✓					✓		
Provide suitable signage at access points to SAC to reinforce message on dog control and picking up.	✓	✓					✓		
Facilitate dog training to encourage greater control of dogs and provide a suitable area.	✓								
Encourage professional dog walkers and gun dog trainers off the SAC (to reduce dog use on the SAC).	✓	✓					✓		
Continue to publicize the current Phytophthora outbreak and precautions to prevent spread and use as a platform to advise on the dangers of introducing other alien flora and fauna to SAC.							✓		

Cannock Chase SAC Mitigation Report

Mitigation	Disturbance to wildlife	Eutrophication from dogs	Fires	General	Habitat fragmentation, veg. trampling, creation of new access points & routes	Management	Spread of disease	Track & path widening, erosion, path creation, trampling, compaction	Vandalism and litter
Review existing fire break network and access for emergency services.			✓						
Review measures to increase public awareness of the dangers and consequences of wild fires and reporting procedures by the public.			✓						
Include measures to reduce vandalism and litter through the review of car parks and public awareness measures.									✓
Continue to advise the public on the need for management of heathland and on specific management tasks.				✓		✓			
Review staffing levels (to facilitate implementation of measures listed above).				✓					
Review partnership working (to facilitate implementation of measures listed above).				✓					
Review funding and resource issues with partners to look for savings and joint fund raising opportunities.				✓					
Establish base line recording to facilitate future monitoring.				✓					
Monitor effectiveness of mitigation measures and adjust accordingly.				✓					