

Effectiveness of specific measures

3.50 During interviews, the SAMM team identified some locations in which they have observed access restriction measures being more or less successful. These included the following:

Effective measures

3.51 Fencing:

- Temporary fencing of clear cut areas e.g. at Bramshill, Warren Heath & Heath Warren, thought to reduce impact on ground nesting birds; and
- Permanent fencing of MOD areas (e.g. Ash, Barossa, Long Valley / Bourley, Pirbright) and at Lightwater Country Park reduces public footfall.

3.52 Type and quality of footpaths:

- Wide tracks – effective at drawing people away from smaller paths e.g. at Bramshill, Barossa, Caesars Camp, Folly Bog, Whitmoor Common, Warren Heath & Heath Warren;
- Boardwalk – provides focal point for walking at Whitmoor Common and Wildmoor;
- Self-guided trail at Yateley Common - contains new visitors to designated route; and
- Horse track surrounding heathland at Tweseldown - reduces footfall inside the track.

3.53 Signage:

- Signage on desire lines¹⁷ at Hazeley RSPB and Brookwood – encourages people onto main paths;
- Dogs on lead sign e.g. at Castle Bottom; and
- Signage promoting self-guided trail e.g. at Chobham Common.

3.54 Other factors (e.g. that could be effective alongside access restriction):

- Car parking restrictions e.g. at Yateley South (small car parks/layby on busy road), West End Common (no car park, although there is a small car park nearby at Bisley Common), and Horsell Common (reduced parking on western units).

- Commercial dog walking licences e.g. on all MOD land (except where using public rights of way)¹⁸ and at Horsell Common.

Issues reducing effectiveness

3.55 Vandalism:

- Damaged boundary fencing e.g. at Bourley & Long Valley, Broadmoor Bottom, and Wildmoor;
- Damage to fencing to prevent desire line¹⁹ use, e.g. at Chobham, Turf Hill and Wildmoor; and
- Vandalism of MOD ranges (and disagreements with access) at Ash Ranges.

3.56 Ignoring signage:

- Dogs control signage, e.g. at Lightwater where many people are compliant after engagement with a warden, but otherwise not; and Sheets Heath, where there are high levels of commercial and standard dog walking, regardless of signage.

3.57 Leaving paths:

- Desire lines through valuable heathland, e.g. at Whitmoor and Turf Hill; and
- Areas mown for habitat management used as desire lines e.g. at Chobham Common (lines mown for grazing fences are used); and Brookwood (scrapes and heather mowing very close to path are used).

3.58 Other issues:

- Yateley - large gorse bushes on tracks reduce access to heath but are also fire risks; and
- Lightwater - some areas of heath are fenced and others not. Sends confused message to public that unfenced heath does not have areas that are sensitive for wildlife.

¹⁷ Desire lines are formed by erosion from people taking a direct route between two points, where no formal path exists.

¹⁸ You and Your Dog on MOD Land (2019):

<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/att>

achment_data/file/771262/20170728_-_Dog_Walking_Leaflet_Tri_fold_Final_Version.pdf

¹⁹ 'Desire lines' are informal unplanned paths created by people frequently using a route between two places, for example by cutting a corner to link two paths

Chapter 4

The potential for further access restriction

Exploring different ways in which further access restriction could be applied

4.1 Based on what is known about existing access restriction measures and their effectiveness (**Chapter 3**), this section explores measures that could be introduced to provide further mitigation for recreation pressure. The effectiveness of those measures is then appraised in **Chapter 5**.

What would access restriction need to achieve within the SPA?

4.2 The ultimate aim of this project is to identify measures that could be used to further mitigate recreation pressure (bird disturbance), so that new homes can be built in Hart, Rushmoor and/or Surrey Heath without adverse effects on the integrity of the TBH SPA.

4.3 Reducing the disturbance of birds by people and dogs needs to involve one or more of:

- Reducing the overall numbers of people / dogs at the SPA;
- Increasing the distance (or screening) between people / dogs and birds;
- Changing people's behaviour so that they or their dogs are less likely to cause disturbance; or
- Increasing the resilience of bird populations to disturbance.

4.4 Access restriction is about physical measures within the SPA itself and so is better suited to measures that result in increased distance or screening between birds and visitors, but may also have a role in reducing overall numbers at the SPA and behaviour change. These last two approaches are explored further in the other C3 Access studies (car parking, dog control and access management) and in relation to SANGs (C1 study).

4.5 Increasing the resilience of the bird populations through habitat restoration is being explored as an option in its own right in the C2 Habitat Restoration Feasibility Study.

Priority areas for further access restriction

4.6 The whole of the SPA has the same level of protection under the Habitats Regulations and its mosaic of habitats, taken together, are all important for the qualifying bird species. Access restriction should be focussed on areas where it would have the most benefit to birds and/or where it is most likely to be effective. Priority areas for further access restriction could therefore be identified by taking into account the following.

Proportion of the SPA

4.7 From the point of view of the SPA's qualifying bird species, the most effective way of mitigating visitor pressure through access restriction would be to restrict access to the whole SPA. However, in practice this would be extremely difficult as the SPA is made up of a number of sites and preventing access to these would involve many kilometres of fencing. This would also be difficult to enforce and undesirable, as the SPA is a popular and valuable resource for local residents. Similarly, although restricting access to an individual SSSI unit would be more achievable – the MOD prevent access to large areas of some of the SSSIs, for example – this would also be likely to be met with resistance.

4.8 As the whole SPA is protected, a legal view may be required to take forward any measures that could involve benefits only in certain areas of the SPA or cause displacement within the SPA.

4.9 The 'most effective' mitigation is therefore something that is workable, as well as something that reduces overall disturbance to birds. Therefore, we have assumed that access would be restricted to areas that still allow visitor access to other areas within the same SSSI. It makes sense, also, to consider potential locations for mitigation at the SSSI scale as the different components of the SPA have different characteristics and conservation objectives (for their SSSI designation, in addition to the SPA), that need to be taken into consideration.

4.10 The size of the area over which access is restricted will influence the scale of mitigation; but other factors are also relevant, for example the degree to which those areas were previously disturbed, and where people would displace to. This is discussed further in **Chapter 4**.

Areas currently under the most pressure from visitors

4.11 As set out in **Chapter 3**, most of the SPA is subject to visitor activity at some time, with the exception of areas without public access.

4.12 Prioritising access restriction in areas of the SPA that are currently hotspots of visitor activity could reduce visitor pressure and prevent adverse effects from occurring at those locations. However, access restriction in popular areas would be likely to be met with resistance from SPA visitors and the displacement effects would need to be considered (both within the SPA and to other sites); see **Chapter 5**.

4.13 Because of the higher risk of displacement and non-compliance with restrictions, it is likely that focussing on areas that are not the most popular areas of the SPA will be more acceptable to the public. However, to achieve the desired effect of reducing disturbance, there needs to be some existing visitor pressure.

4.14 A visual analysis of GIS data, looking at sites that have no public access (from 2018 visitor hotspot mapping) and bird data between 2015 and 2019 does not reveal a correlation between lack of visitors and an increase in bird numbers, but the 'visitor hotspot' data from the 2018 visitor survey does not provide a comprehensive picture of visitor distribution across the SPA.

4.15 On some sites where there is no access, bird data is notably absent, perhaps because the access restriction has also restricted bird surveys from being undertaken on these sites, or because habitats were unsuitable at the time of survey.

4.16 The correlation has, however, been proven in other previous studies. A literature review²⁰ on the effects of human disturbance on bird breeding found that 36 out of 40 studies reported reduced breeding success as a consequence of disturbance.

4.17 Liley, D. and R.T. Clarke (2002²¹) examined the relationship between the amount of urban development, adjacent to heathland sites in Dorset, and the numbers of three Annex 1 bird species (nightjar, woodlark and Dartford warbler). The results of this study demonstrated that the number of nightjars present on a heathland site was linked to the measure of urban development around the periphery of the site, with sites surrounded by a high amount of development supporting fewer nightjars.

4.18 Two further studies considered the impact of human disturbance on nightjars on heathlands in Dorset (Murison,

²⁰ Hockin, D., M. Oundsted, M. Gorman, D. Hill, V. Keller and M.A. Barker (1992) Examination of the effects of disturbance on birds with reference to its importance in ecological assessments. *Journal of Environmental Management*, 36, 253-286

²¹ Liley, D. and R.T. Clarke (2002) Urban development adjacent to heathland sites in Dorset: the effect on the density and settlement patterns of Annex 1 bird species. *English Nature Research Reports*, No. 463.

2002²² and Liley and Clarke, 2003²³). In the former, the breeding success of nightjars was compared on several sites in Dorset with varying levels of public access. Sites with no public access showed significantly higher breeding success than sites with open access. On sites with public access, territory centres and nest sites occurred at a distance from urban development. In addition, nests that did succeed were located at a distance from paths. The probability of nest survival was 12%, with the key cause of nest loss being predation.

4.19 A comparable study in Northamptonshire²⁴ modelled the spatial distribution of visitors, which predicted visitor numbers for individual access points. This demonstrated that:

- The number of people arriving at a given access point is dependent on the amount of housing surrounding the access point and the amount of parking available.
- People arriving on foot can be predicted from the amount of housing in the surrounding area.
- Parking capacity was the best single predictor of visitor numbers arriving by car.
- Appeared that parking capacity was not limiting visitor numbers, but the distribution of current parking reflects patterns of access and the locations that people prefer to visit.
- Sites surrounded by high densities of housing do not necessarily also have the most parking, and therefore high visitor pressure is sometimes not associated with housing

4.20 The predicted number of visitors and distance people 'penetrate' on to the heath allowed the mapping of visitor pressure in each area. This demonstrated that nightjar territories, compared to areas outside territories, are located in areas of low visitor pressure and that nightjars therefore appear to avoid areas of high disturbance within sites.

4.21 Potential locations in which there is some visitor presence but that are not the most popular areas of the SPA include the northern edge of Ash to Brookwood Heaths SSSI and the eastern edge of Broadmoor to Bagshot Woods and Heaths SSSI. These are examples of areas shown by the 2018 EPR visitor pressure data²⁵ (**Figure 3.15**) as having some routes used by surveyed visitors but at a low density. Because of the limitations of this data (i.e. only a selection of access points were surveyed), this information is only useful

where there are no other major access points (e.g. large car parks) where a large number of unrecorded visitors could be contributing to visitor pressure. Surveys would therefore be required to confirm existing use at any areas where access restriction is proposed.

Areas where habitat could be managed to benefit bird populations

4.22 Limited information is available on which locations within the SPA are most sensitive to recreational disturbance from an ecological point of view. However, it is reasonable to assume that areas with high quality suitable habitat for the SPA bird species would be most sensitive, as these areas are most likely to support higher population densities. High quality suitable habitat for nightjar, woodlark and Dartford warbler comprises a mosaic of habitats, as described in **paragraph 3.47**.

4.23 These ground-nesting bird species favour more open habitats and it is likely that open areas also have a higher density of footpaths, leading to increased chance of disturbance. Large land parcels within the SPA with a low density of footpaths may have overall lower levels of recreational pressure, due to the availability of larger areas of less disturbed habitat. Habitat fragmentation may also play a role, particularly for nightjar, which requires a large foraging area (average of 3km from nesting sites). All three species need to be able to move around areas of well-connected habitat, in order to respond to changes and threats, such as habitat succession, rotational woodland felling, fires, severe winters, etc. There is evidence that nightjar, woodlark and Dartford warbler densities within the TBH SPA are correlated with heathland habitat which is shown by the mapped bird data.

4.24 The SSSI condition assessments, summarised in **Appendix A**, for the most part correlate with the management and maintenance of suitable habitat for the SPA bird species, with targets for habitat percentage cover and condition designed to meet the requirements of these species. Most summaries did not include comments on recreational pressure, but where these were included, they are provided in the table.

4.25 Key management issues identified in the SSSI condition assessment summaries, which lead to a reduction in suitable habitat, were:

²² Murison, G. (2002) The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. English Nature Research Reports, No. 483.

²³ Liley, D. & Clarke, R. T. (2003). The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. *Biological Conservation*, 114, 219-230.

²⁴ Lowe, A., A. C. Rogers, and K. L. Durrant. 2014. Effect of human disturbance on long-term habitat use and breeding success of the European Nightjar, *Caprimulgus europaeus*. *Avian Conservation and Ecology* 9(2): 6.

²⁵ Visitor access patterns on the Thames Basin Heaths SPA – visitor questionnaire survey 2018, 2018 (EPR)

- Lack of broadleaved and conifer plantation woodland management, leading to the development of mature woodland with a dense canopy cover. Selective thinning/clearance of woodland and rotational clear-fell and re-stocking of conifer plantations are required to ensure that young, open areas of woodland (providing the habitats listed above) remain available.
- Scrub encroachment and overgrowth of gorse and bracken, leading to a loss of open habitats.
- Lack of management of heather and gorse, leading to a dominance of over-mature specimens and a low structural diversity within these habitats.
- Lack of management of bare ground and low-lying vegetation, leading to loss of these habitats.
- History of uncontrolled heathland fires in some areas, leading to loss of suitable habitat.
- Unmanaged recreational disturbance, leading to increased risk of nest abandonment, predation, increased energy expenditure due to increased flight, and desertion of supporting habitat.

4.26 Therefore, access restriction measures that can minimise one or more of these in addition to recreation disturbance, could be prioritised. For example, large open areas where scrub encroachment can be controlled and access by people can be restricted could help improve the resilience of bird populations as well as reduce disturbance. Examples of large open areas of heathland that are crossed by desire lines, where visitors could be steered around the heathland instead, include:

- The northern part of Long Valley, south of Aldershot Road (Bourley & Long Valley SSSI). This is within the MOD's Minley & Aldershot Dry Training Area and subject to temporary access restrictions, but this could be extended; and
- The heathland south of Yateley Common and the A30 (Castle Bottom to Yateley and Hawley Commons SSSI), outside the Country Park.

4.27 The suitability of these areas for mitigation will depend on the potential capacity and catchments they could provide (see **Chapter 5**) as well as the willingness of landowners / managers and ecological suitability (see **Chapter 6**).

4.28 There are also areas of Horsell Common, Whitmoor Common, and Chobham Common that are suitable ecologically, but which are access land. It could be possible to

temporarily restrict access in these areas (see **paragraph 3.19**) but it could not be prevented.

4.29 Because some habitats within the SPA (for example rotationally managed woodland) change faster than others and birds favour different areas of the SPA at different times, 'priority areas' may change. Priority areas could therefore be defined in terms of their ecological characteristics rather than specific geographical areas, in some cases, for example recently felled woodland. Further discussion on how this could work is provided in **Chapter 6**.

Areas where measures could be more easily implemented

4.30 The SAMM team has suggested areas where local communities have previously opposed access restrictions/changes. These include Turf Hill, Ash Ranges, Bourley and Long Valley, Chobham Common and Wildmoor. On these sites, where access restrictions have been suggested, there has been strong vocal opposition and/or physical restrictions have been vandalised (such as logs to prevent use of desire lines at Chobham Common, or cattle fencing at Wildmoor).

4.31 Fencing any areas of common land has been met with fierce opposition in the past (and would potentially be more so during the pandemic). For example, Surrey Wildlife Trust (SWT), which manages conservation at Chobham Common on behalf of Surrey County Council, applied to install fencing to allow extensive grazing to restore habitats across the Common. While the proposals were supported by Natural England, proposals to install fencing were met by strong public opposition following a three year public consultation period. The case went to Public Inquiry in 2012, with permission eventually granted for temporary electric fencing for seasonal grazing for a limited four year period, which is now over. Smaller exemption enclosures were allowed before the four year period and have been used since, with fencing typically only present from March to October and does not prevent access to people (there are either squeezes or gates that still permit entry to fenced areas). The three small enclosures are moved each year. The management of this grazing is relatively time and resource intensive for SWT.

4.32 Similarly, the MOD are currently (2020) reviewing the Aldershot and District Military Lands Byelaws 1976, to modify access to their ranges. Public opposition has been strong with petitions²⁶ and large public meetings, due to rumours that the MOD is intending to restrict access, although this is not the case.

4.33 Restricting access to the whole SPA or in areas of strong opposition, therefore, would be expected to be met with

²⁶ Petition against change in byelaws: <https://www.change.org/p/ministry-of-defence-maintain-public-access-to-mod-land-in-aldershot-district-areas>

resistance and would be difficult to enforce, but there may be areas in which access restriction is easier to implement, subject to agreement with landowners or managers and assessment of the mitigation potential (see **Chapters 5 & 6**).

4.34 Horsell Common is owned and managed by the Horsell Common Preservation Society. The Preservation Society has two employees and is accountable to a Board of Trustees. This management approach provides greater autonomy over decisions than other sites and therefore, with agreement, a site such as this could provide a good location to trial new access restriction proposals.

4.35 It may also be straightforward to extend the area of temporary fencing used to surround areas of Forestry Commission clear-felling. The SAMM team reports that this approach works well although this is thought to be because there are wide clear tracks through the forestry and the fenced areas being restocked do not offer inviting walking terrain as they have rough ground with brash (cut branches) and other obstacles. A similar approach could be taken in woodland not managed by the Forestry Commission, where there is appropriate habitat to do so, as a lack of forestry management is highlighted as an issue in relation to SSSI condition.

Triggers for access restriction

4.36 In order to be considered 'mitigation' under the Habitats Regulations, access restriction would need to be in place and effective before any adverse effect on integrity were caused by recreation pressure. A trigger is something that sets in motion the implementation of an access restriction measure.

4.37 Some access restriction measures (e.g. a fence) could be effective immediately, whereas measures based on habitat management, for example, may be only possible to implement at certain times of the year/management cycle, or may require time for habitats to mature before they are effective. Some measures are suitable for seasonal/temporary use, whereas others may be more long term. The responsiveness and intended duration of different measures needs to be taken into account when considering which triggers are appropriate.

4.38 The difficulty with using temporary measures as mitigation is that it may be difficult to demonstrate that mitigation will be in place and effective 'in perpetuity', and that it is linked to specific development. For example, if an area of the SPA is restricted solely during bird nesting season, then visits during winter could mean that visitors use the area habitually and create desire lines; and are therefore more resistant to restrictions in the summer. Access restrictions that affect visitors' daily habits (for example dog walkers) over the long term will be more easily seen as effective than temporary measures, but temporary or seasonal measures enable a more rapid response to ecological conditions. Temporary restrictions could be implemented in perpetuity, for example

by ensuring that they are in place every year but with a suitable location being identified annually, in response to local conditions. It may also be possible to influence the daily behaviour of visitors by making alternative areas more attractive (within the SPA or as a SANG/SANG alternative, and subject to assessment and legal view on any effects of redistributing visitors elsewhere), and then to use access restriction seasonally as an additional measure to provide further certainty of mitigation.

4.39 For each of the mitigation options compared below, we have considered the physical measures that would enable them and triggers that could be appropriate for each.

4.40 Triggers could include:

- Bird numbers;
- Bird location;
- Bird breeding season;
- Visitor numbers;
- Number of cars using car parks;
- Visitor behaviour e.g. as reported by wardens;
- Appearance of desire lines;
- Habitat characteristics;
- Stage in forestry rotation cycle; and/or
- Number of new homes within 5km; or
- No trigger, i.e. a one-off measure put in place as soon as possible.

Types of access restriction measure

4.41 Access can be restricted through a number of physical measures that either prevent people from accessing certain areas or steer them away by encouraging them into other areas. For example;

4.42 'Carrots' (measures that encourage behaviour change by providing positive alternatives) could include:

- Habitat management to make certain areas more attractive;
- New or improved footpaths e.g. circular routes with surfaced paths or boardwalks near car parks and main entrance points;
- Promoted routes, e.g. waymarked trails; and/or
- Providing other ways to enjoy areas where access is restricted e.g. viewpoints.

4.43 'Sticks' (measures that encourage behaviour change by making the original behaviour less appealing or impossible) could include:

- Habitat management to prevent access, e.g. screening using impenetrable scrub;
- Fencing (long/short term) e.g. around key areas of breeding habitat;
- Blocking paths or desire lines e.g. with logs; and/or
- Removing paths.

4.44 It is likely that a combination of the above physical measures would be required, and that they would need to be in combination with access management e.g. education/wardening, and/or measures such as car parking restrictions etc

4.45 For each of the options compared below, we have therefore considered the range of physical measures that might be appropriate for each.

Identification of access restriction options for comparison

4.46 Assessing the potential effectiveness, means of implementation and cost of different mitigation measures requires identifying distinct options that can be considered in their own right. This is difficult for individual physical measures, for example removing paths versus a promoted route, as it is likely that measures would be used in combination and could be put in place in a variety of locations.

4.47 Instead we have compared options based on the approach that they would take to mitigate visitor pressure, as discussed above. Then within each option, we consider the locations in which the approach could be taken, the types of physical measures that would be appropriate, and the duration (i.e. whether it would work best as a seasonal measure or more long term). An appraisal of each option is summarised in **Appendix B** and expanded upon in **Chapters 4 & 5**.

4.48 Three potential mitigation strategies have been identified, guided by the information set out in the 'priority areas for access restriction' section above:

1. Steer people away from visitor hotspots:

- Temporary/seasonal restriction of access to reduce visitor pressure around hotspots; using fences, brash or logs to block desire lines and signage and information to encourage visitors onto alternative routes, for example as carried out by Hart District Council at Hazeley Heath during the Covid-19 pandemic (**Figure 3.14**).

- Hotspots are by definition popular areas; the aim would therefore be to reduce pressure rather than prevent access. The potential for displacement/dispersal and non-compliance would need to be considered and the need to provide mitigation in perpetuity.
- Could be triggered by monitoring, for example observations of increased usage or changes in behaviour (e.g. dogs off leads / paths).
- This approach could be implemented in combination with car parking restrictions or closure.
- Visitor hotspots include the area around the Lookout Discovery Centre (Broadmoor to Bagshot Woods SSSI).

2. Increase area of open undisturbed heathland:

- This option could include blocking desire lines through open habitat (heath/grassland) and improving and/or promoting routes around the perimeter of the habitat. Managing scrub to maintain open area and screen desire lines.
- Could be achieved on a seasonal basis e.g. with signage explaining sensitivity of area for birds; or as a longer-term measure e.g. allowing vegetation to block access.
- This option therefore would not require a specific trigger but could be implemented wherever suitable habitat exists.
- Locations that may be suitable for this option include: the northern part of Long Valley and heathland south of Yateley Common.

3. Extend the area of temporary fencing around clear-cut forestry:

- Temporary fencing is currently used by the Forestry Commission around recently cleared areas of woodland, while newly planted trees establish. This could be extended by taking the same approach in areas of woodland not currently managed by the Forestry Commission. This might require rotational felling of woodland to manage it for the qualifying bird species in a way that is not currently undertaken.
- Suitable areas would be areas of woodland not currently under Forestry Commission management, where the landowner is willing and the woodland is suitable (for example not ancient woodland). These might be areas under different ownership, for example MOD land (e.g. Bourley & Long Valley SSSI) or Crown Estate Land (e.g. large areas of

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Broadmoor to Bagshot Woods & Heaths SSSI). If there are areas that could be subject to rotational felling and management that are not already, this would need to be compatible with any other designations e.g. SAC/SSSI, as rotational felling would not be appropriate for some species/habitats.

Chapter 5

Measuring the effectiveness of access restriction

How to quantify the success of access restriction options

5.1 This section considers what might happen if each of the three access restriction options (see **para. 4.48** above and **Appendix B**) were implemented, how their effectiveness could be measured, and the scale of mitigation that they could achieve in terms of the number of new homes that could be built within 5km of the SPA.

5.2 Effectiveness has been considered in terms of the following criteria (as set out in the blank proforma in **Appendix B**):

- HRA implications e.g. can option be considered 'mitigation' (may be difficult to determine without legal advice);
- Relationship to other options being considered i.e. would it only be effective in conjunction with another of the options;
- Likely outcomes of implementing option e.g. scale of potential effectiveness; and
- Monitoring i.e. how effectiveness can be monitored / measured.

5.3 How each of the options being considered performs against these criteria is discussed below. Deliverability (implementation method, relevant stakeholders, potential sources of funding and costs) are set out in the proforma and considered in **Chapter 6**.

HRA implications

5.4 In order to meet the requirements of the Habitats Regulations, access restrictions (and any associated mitigation) would need to be in place before adverse effects occurred, i.e. before new development resulted in additional recreational disturbance at the SPA. Additional capacity provided by access restriction measures would also need to be linked to new development to enable those developments to be approved. This could mean identifying suitable locations for access restriction once new development proposals are confirmed and then implementing the restrictions before the developments are occupied.

5.5 The three access restriction strategies are broadly similar in this regard, although there are some differences between them:

- Steering people away from visitor hotspots: temporarily restricting access in visitor hotspots could be used as a rapid response to observations of increasing visitor numbers (e.g. automatic counters at car parks), but only if measures could be implemented quickly enough to give confidence that adverse effects on integrity would be avoided. Likely displacement effects mean this would be difficult.
- Increasing areas of open undisturbed heathland: this is a 'slower' approach than restricting access at visitor hotspots and it would be easier to demonstrate that mitigation was in place before harm occurred. This approach has a habitat restoration element, which is explored further in the separate habitat restoration study.
- Extending the area of temporary fencing around clear-cut forestry: this is similar to increasing areas of open undisturbed habitat, in HRA terms, and could have a habitat restoration element if new areas of woodland are brought into rotational management.

5.6 Habitat restoration has been assessed as a separate mitigation option as part of the main study and the degree to which it could contribute to the scale of mitigation (e.g. by increasing the resilience of bird populations and provide 'headroom' for additional visitor numbers) has not been assessed here.

Relationship between options

5.7 All of the access restriction strategies being considered would work best in conjunction with access management (wardening / education), to improve the acceptability of the measures to the public.

5.8 Steering people away from visitor hotspots could be more effective in conjunction with parking controls, to reduce the number of visitors entering the SPA at popular locations, but car parking controls will also have associated displacement risks.

5.9 The strategies involving habitat management potentially overlap with the habitat restoration approach being considered as a separate mitigation option. Where fences or path closure is used (for example if extended area of fenced forestry), there may be opportunities for dog controls to be implemented, although this is less likely to be effective where open areas of habitat are being created as these are attractive to dog walkers.

5.10 Any access restriction measures could also be implemented in conjunction with SANG alternatives, to provide

a draw away from the SPA in addition to managing visitors within the SPA.

The likely outcomes of access restriction

5.11 The intention behind any access restriction measure would be to protect the qualifying features of the SPA (nightjar, woodlark and Dartford warbler) in such a way that an increase in visitor numbers would not increase disturbance of the bird species and adversely affect the integrity of the SPA. In practice, this means either:

- Reducing the numbers of people accessing the SPA;
- Increasing the distance between people and birds; or
- Influencing the times at which people are in proximity to birds.

5.12 However, unless access is prevented to the whole SPA, restriction of access is likely to redistribute visitors to other parts of the SPA as well as to other sites. Anecdotally, when access was previously restricted due to car parking restrictions at Chobham Common, visitors were displaced to other areas of the SPA. Measuring the effectiveness of access restriction measures needs to take into account the effect in proximity to the intervention, but also the wider effects on the SPA (see below).

Displacement

5.13 The selection of the appropriate access restriction measures should be informed by an understanding of the ecological characteristics of the SPA. For example, the condition of habitats and presence of breeding bird populations together with the size of the SPA, extent of recreational pressure and the extent of the path network. If not considered carefully, the restriction measures could have a detrimental impact on areas within the SPA which do not currently receive a significant amount of disturbance or result in visitors moving to other locations within the SPA. This is more likely for the access restriction strategy that aims to steer people away from visitor hotspots than the other two strategies, but modelling would be required of specific proposals for this to be quantified or confirmed.

5.14 The potential for displacement has been raised previously for other measures affecting visitors to part of the SPA. For example, in 2012 Bracknell Forest Council was considering implementing parking charges at the Lookout Discovery Centre (Broadmoor to Bagshot Woods and Heaths

SSSI, within the SPA). Natural England disagreed²⁷ with the conclusions of HRA work for the proposals, citing concerns about displacement of visitors either within the SPA or to nearby SANGs (which could affect the ability of SANGs to provide required mitigation). Ultimately, the charges were implemented, along with SANG capacity provided at an existing SANG nearby to mitigate potential displacement effects, SAMM contributions, and daily monitoring at the car park. Monitoring has identified some displacement effects²⁸.

5.15 This example highlights some of the difficulties in undertaking a robust assessment of displacement prior to measures being implemented but suggests that access restriction measures could be trialled with close monitoring and mitigation in place in case unforeseen displacement occurs.

5.16 Prior to trialling an access restriction measure, consideration would need to be given to the displacement of recreational pressure along with ensuring that alternative routes are attractive to visitors and that restriction methods will not unduly impact their behavioural attitudes. For example, consideration should be given to retaining a range of types of walking routes (e.g. distances and routes). Management of the SPA should also consider how restrictions may cause potential conflicts between visitor groups (e.g. visitors will be forced to use a reduced number of paths).

5.17 Modelling would be required to understand likely extent of displacement of recreational pressure prior to implementation of an access restriction measure. This could be achieved through applying bird nesting territories to existing point data for birds and modelling where visitors may be displaced to if an access restriction measure is implemented. This technique would enable an assessment of numbers of territories which could be affected and potential conflicts between user groups.

5.18 Footprint Ecology has employed a similar method to assess the potential effects of displacement from measures such as parking controls. The model estimates visitor numbers at access points, rather than on paths and rights of way, therefore cannot currently be used to model displacement of access restriction within the SPA. Adding footpaths to this model would allow potential displacement effects to be tested for various scenarios including combinations of access restriction, parking controls and dog controls.

Quantifying scale of mitigation

How is the effectiveness of SANG & SAMM currently quantified?

5.19 The Thames Basin Heaths Delivery Framework states that SANG should be provided on the basis of at least 8ha per 1,000 population. This was based on the recommendations of the South East Plan Technical Assessor, with the formula used to determine the capacity based on the number of potential visits to the SPA from the increase in population in the affected local authorities.

5.20 Whilst visitor surveys suggest there has been a slight reduction in the number of visits to the SPA, possibly due to the increase in SANG, the results of the SANG Surveys conducted in 2018 suggest that people would continue to use an SPA location as an alternative site due to factors such as variety, large open area, proximity to home, bigger/long walks and being able to walk dog off lead/safe to walk dog off lead.

5.21 Therefore, the delivery of SANG should be coordinated with an effective approach to SAMM. As set out in the Delivery Framework this should include:

- A consistent SPA/SANG message, which may include signage, leaflets, educational material etc.
- Guidance on access management on the SPA e.g. rangers, seasonal restrictions, campaigns etc.
- Guidance on access management on SANG e.g. provision of attractive facilities.

5.22 The Delivery Framework also notes that monitoring the success of the avoidance/ mitigation methods should be carried out by local authorities, Natural England and existing landowners and managements, and funded by ensuring the charge levied on the developer contributions includes an allowance for the costs of this work. The charge collected in relation to monitoring should be pooled for strategic allocation. Monitoring should address:

- Habitat condition and bird numbers.
- Provision of SANG and delivery of dwellings.
- Access management.
- Visitor surveys.

5.23 Monitoring should be carried out strategically in line with a strategy that has been agreed by the Joint Strategic Partnership Board (JSPB). Monitoring work should be carried

²⁷ Natural England's letters to Bracknell Forest Council in May 2012: <http://democratic.bracknell-forest.gov.uk/documents/s56055/Car%20Park%20Charging%20at%20The%20Lookout%20-%20HBA%20Annex%201.pdf>; and August 2012: <http://democratic.bracknell-forest.gov.uk/documents/s56056/Car%20Park%20Charging%20at%20The%20Lookout%20-%20HBA%20Annex%202.pdf>

²⁸ Minutes of: The Look Out Car Park Charging HRA Mitigation and Monitoring Meeting held at Bracknell Forest Council 6 June 2016, provided by Natural England

out on an annual basis and where necessary amendments to the Delivery Framework be made to address identified problems. Any agreed amendments by the JSPB should be considered by individual local planning authorities.

Comparative scale of various options

5.24 The scale of each access restriction option identified in this study will vary according to the characteristics of a particular location, together with the associated recreational pressures.

5.25 Access restriction measures to steer people away from visitor hotspots could be delivered across the SPA where the SAMM team operate and therefore have an understanding of recreational pressures together with a presence on site to monitor visitor compliance. Temporary/seasonal measures could be delivered in a number of locations at any one time with the timing of implementation dependent on peak visitor levels and bird nesting productivity (providing that they ensure mitigation in perpetuity; see **paragraph 4.38** above).

5.26 Measures which aim to increase areas of undisturbed heathland or to increase the area of temporary fencing around clear-cut forestry will be reliant on the presence and extent of suitable habitats across the SPA. These projects could be easier to plan and could form part of a longer-term strategy to increase the quantity of undisturbed heathland. The scale of intervention will be guided by a robust understanding of likely displacement of visitor pressure.

5.27 Depending on the location and nature of the proposed measures, different visitors may be affected to varying extents, either by design or as an unintentional consequence, for example:

- Geographical area: access restriction measures would need to be implemented in an area that would be affected by visits from new development, but the effect on existing users (in terms of inconvenience and/or acceptability) may depend on the availability of alternative locations for recreation nearby.
- Visitors undertaking different activities: access restriction measures could exclude dog walkers but not other visitors, i.e. with signs excluding dogs used in conjunction with physical measures such as fences (note that this overlaps with other forms of access management, studied separately). This would be easier where a defined area is being created, and where it would be possible to enforce the measures.
- Visitors with accessibility requirements: access restriction involving path closure and/or the creation of new paths should maintain or enhance the routes available to people with wheelchairs or buggies (and, similarly, bicycles or horses).

5.28 All measures could be trialled to assess effectiveness of the measure and to inform an understanding of any unintended effects.

How would the number of homes that could be mitigated be estimated for each option?

5.29 Quantifying the effectiveness of access restriction measures applied at the SPA, and therefore the number of homes that could be mitigated, requires a robust understanding of current condition of habitats, data on the presence of breeding bird populations, and information on recreational pressure, as well as an understanding of how visitor behaviour could change and where people would displace to. Existing baseline data may help with this calculation but there appears to be some gaps in the existing evidence which limits the ability to accurately quantify the number of homes that could be delivered through a specific access restriction measure.

5.30 The existing data that could be drawn upon to assess the capacity that specific measures could provide includes the following:

- Broad habitat types across the SPA.
- SSSI condition surveys and recommendations on management.
- Annual bird survey data (point data).
- Annual visitor survey data (hotspots).
- Access points and car parking locations and capacity.
- Landownership and management.

5.31 Although there is some survey data noting the presence of bird populations and separate data regarding the number of visitors to sites within the SPA (e.g. visitor numbers and access points), to date this has not been analysed in terms of any correlation between visitor numbers before and after access restrictions, and bird distribution and nest productivity. It is therefore not possible to measure the success of specific projects which have been trialled within the SPA or to form a robust baseline from which effectiveness of future projects (and estimates of number of homes that could be delivered) can be measured.

5.32 Assessments could therefore be carried out to understand the effectiveness of the interventions that have already been delivered within the TBH SPA, and the impacts of these on nesting bird populations together with any changes to visitor numbers, behaviour and the extent of penetration. Interventions which could be assessed include:

- Management of habitat to restrict access.
- Installation of temporary fencing at Chobham Common.

- Delivery of the pawprint scheme in Hampshire.
- Introduction of a site manager at Horsell Common.
- Other mitigation approaches (SAMM team measures, new SANG, car parking charges or dog controls), in order to distinguish which changes are due to access restriction and which are due to other methods.

5.33 An assessment of environmental factors (e.g. weather) would also need to be carried out to understand the influence these may have on bird nesting populations and visitor patterns.

5.34 Further survey data would also help understand the effectiveness of access restriction measures. Survey data could include:

- Nesting bird productivity on sites which are currently not accessible to public, which would help to further understand the impact of recreational pressure on the SPA.
- How visitor hotspots change through the year, which would help the SAMM team or land manager observe potential triggers for implementation of an access restriction measure.
- Detailed analysis of displacement effects of access restriction measures.

5.35 With the recent appointment of a data officer within the SAMM team, this kind of analysis should be possible, and will improve understanding of the effectiveness of current measures.

5.36 Given the need for further study and therefore the uncertainties around displacement, access restriction would not currently be considered an effective mitigation measure in its own right. It may therefore be appropriate to use access restriction as a means of supporting other mitigation approaches (e.g. supporting habitat restoration or managing visitors close to areas where parking controls have been implemented), while using monitoring and data analysis to appraise the effectiveness of access restriction.

Monitoring effectiveness

5.37 With robust baseline data it would be possible to measure any changes which may be brought about through the implementation of a specific intervention.

5.38 Mechanisms for monitoring the effectiveness of access restrictions could include measuring the following:

- Quantity of open heathland within the SPA which is in a favourable condition.
- Extent of bird nesting productivity including nesting territories.
- Recreational pressure at hotspots identified during 2018 visitor survey together with distribution of visitor numbers across the SPA.
- Visitor numbers arriving at car parks together with other access points, and the activities undertaken by those people.

5.39 The capacity that access restriction measures could provide in terms of numbers of new homes could be calculated based on the number of additional bird territories that are created. For example, when habitat restoration was considered as a potential mitigation option in 2014²⁹, a change of habitat from woodland to open undisturbed habitat was found to have a rough capacity around 9+ha per 1,000 residents. A similar approach could be used for access restriction measures.

5.40 Consideration should be given to environmental factors and any other mitigating factors (e.g. changes to the surrounding open space network), which may influence the effectiveness of a particular access restriction measure.

5.41 Monitoring of the effectiveness of an access restriction measure could be carried out annually and phased to coincide with bird nesting.

5.42 Adopting a robust approach to the monitoring of the access restriction measures will give an informed assessment of the success/impacts of interventions and provide the justification for restricting access to visitors as well as help secure external funding streams. Monitoring will also enable flexibility to amend management techniques as required.

²⁹ Forest Enterprise & Natural England (2014) Heathland restoration from conifer plantation as mitigation of the likely impacts of housing development

Chapter 6

Implementation and enforcement

How to ensure that mitigation is effective

6.1 Restricting access on common land and publicly accessible open spaces is an emotive issue. The importance of being able to access public open space has only heightened over the last year due to Covid-19 lockdown measures and limitations on movement.

6.2 It is clear from discussions with the SAMM team that past access restriction measures implemented at some of the SPA sites have been met with significant resistance. It is therefore important that any measures taken forward to implementation are based on a robust assessment of each potential mitigation location, and that any projects identified are carefully planned, designed and consulted upon. The programme of implementation measures should be aligned with, and follow on from, a programme of sensitive communication and engagement.

6.3 Ongoing management and regular monitoring will be required to ensure measures are functioning as intended and to ensure measures are not having a detrimental impact on other parts of the SPA where access has not been restricted. Visitor usage should also be monitored to assess the impact of the measure on visitor movement, usage and enjoyment.

Implementation process

6.4 The success of measures to restrict access will be reliant on an understanding of the condition of the SPA (e.g. habitats and breeding season) together with the current/ predicted visitor pressure. The extent of the area where access is restricted will be informed through understanding areas of the SPA which are of greatest importance for bird nesting productivity together with careful consideration of the potential impacts of channelling visitor movement to other parts of the site.

6.5 The following steps should be taken to ensure the success of mitigation measures:

- Detailed analysis of where access restriction measures should be implemented and which developments will be able to make use of the capacity provided.

- Assessing suitability of alternative routes for visitors (e.g. access, length of route and movement flows).
- Ensuring visitors are aware the access restriction measure is in place when they enter SPA.
- Ensuring visitors understand the reasons for the access restriction measure being in place.

6.6 The potential for displacement of recreational pressure onto areas where access is currently limited will need to be assessed on a site-by-site basis. This would feed into an assessment of the potential mitigation capacity and decisions about which developments can make use of any capacity provided. Modelling the access restriction measure should be carried out prior to implementation to understand the potential for recreation pressure to be displaced to other territories. Visitor surveys have noted that visitors tend to create a web-like network of walking routes from access points, with greatest visitor pressure being some distance from individual access points where the network of paths converge; therefore modelling of formal and informal footpaths would be required. A legal view may also be required on whether any redistribution of visitors (spatially or indeed temporally, if temporary/seasonal restrictions are considered) would meet the requirements of the Habitats Regulations.

6.7 It is unlikely that access restriction measures alone will be sufficient to mitigate impacts of increased visitor pressure on the SPA. A coordinated approach to visitor access may therefore be required, drawing on the findings of the studies on dog walking, visitor management and car parking.

6.8 It is suggested that a bespoke management strategy is prepared for any SSSI unit of the SPA where access restrictions are being considered (or where there is an appropriate cluster of SSSI units). The management strategy should clearly set out the significance of each site(s) (e.g. presence of habitats and species, including locations) as well as understanding visitor numbers, flows and reasons for visits. An adopted strategy could form a useful mechanism to bring together a number of complementary measures (e.g. dog walking, car parking and visitor management).

6.9 It is recommended that management strategies plan for the following five years. The amount of time that the habitat remains suitable for the SPA birds is likely to be site-specific as it is dependent upon many factors including soil conditions, vegetation present and the degree of post-felling treatment. Some areas could remain useful breeding habitat for 6-20 years, although at Bramshill SSSI 5-7 years is estimated and at Broadmoor to Bagshot Woods & Heaths SSSI 5-10 years is

estimated. Five years therefore allows changes in habitat to be taken into account when updating the strategies.

6.10 A site-specific management strategy could therefore also inform the identification of specific locations for access restrictions and could take into account the dynamic nature of habitats. A five year strategy could therefore plan appropriate locations for access restriction around a 5+ year forestry cycle or heathland scrub management but also set in place a means for annually identifying priority areas for access restriction during that year's bird breeding season.

6.11 Anecdotal evidence suggests that visitors to the SPA are passionate about 'their' green space. The process towards defining the management strategy should be a collaborative process where all stakeholders are able engage proactively to shape the future of the SPA and agree on a vision and supporting management objectives.

6.12 Natural England's 'A Common Purpose'³⁰ sets out a process for ensuring effective engagement with community during the development of management strategies. This guidance could be a useful guide for a process to develop access restriction measures for SPA sites.

6.13 SAMM wardens could play a key role in implementing (and enforcing; see below) the management strategy in partnership with the landowners and managing organisation, subject to agreement and funding. Delivery partners should be those included within the Thames Basin Heaths Partnership along with other landowner/ managers (where applicable) and representatives of visitor groups, surrounding communities and other key stakeholders.

Enforcement

6.14 It may be difficult to enforce access restrictions, particularly if restrictions are not permanent. By taking a collaborative approach to developing a strategy and engaging with the public, measures are more likely to be acceptable to visitors of the SPA and require less enforcement; however, some means of enforcement will be required.

6.15 Public Space Protection Orders (PSPOs) can be created to control behaviour within and access to defined public areas, for example by preventing access by dogs. However, they are intended to address unreasonable behaviour that has a detrimental effect on the quality of life of local people; it may therefore be difficult to justify for the purpose of reducing bird disturbance due to new housing development.

6.16 Public rights of way can be stopped up or diverted, in certain circumstances. Under the Town and Country Planning

³⁰ Natural England (2012) "A Common Purpose" Second Edition [Accessed: <https://historicengland.org.uk/images-books/publications/common-purpose/common-purpose-guidance/>]

Act 1990, local authorities can divert or extinguish footpaths, bridleways or restricted byways, if necessary to enable development that has been granted permission and in accordance with that permission. This might be appropriate in some situations if permanent changes to access are required, and it would enable access restrictions to be linked to specific developments, but would not be appropriate for access restrictions that change in response to ecological conditions or involve restricting access away from public rights of way.

6.17 It may also be possible (subject to legal advice) to implement local bylaws that enable access to be restricted, depending on the ownership and status of specific areas of the SPA. For example, under the Forestry Act 1967 (on Forestry Commission Land), the Countryside Act 1968 (within Country Parks), or the Commons Acts 1876/1899 (within areas of Common Land). These may enable greater flexibility than footpath closure or diversion orders.

6.18 Where access is restricted alongside measures to make other areas or routes more attractive, or alongside community engagement by the SAMM wardens to explain the purpose of access restrictions, it may be that legislative approaches are not required. Signage and physical barriers may be sufficient to ensure compliance; however, follow up monitoring would be required to ensure that this is working, to ensure mitigation has been achieved.

6.19 If agreeable to the SAMM Team, wardens could play a key role in enforcing access restriction, in partnership with landowners and managers, by speaking with people seen to be not complying with restrictions (although their 'powers' to enforce would depend on the presence of underlying legislation).

Monitoring

6.20 Management strategies should be practical documents which can be reviewed and updated annually to reflect changes at the SPA and ensure the forthcoming actions are in accordance with the agreed vision and objectives.

6.21 Monitoring can be used to confirm the effectiveness of a strategy and update the future strategy, for example in response to:

- Changes in habitats or habitat management;
- Changes in bird populations or breeding success; or
- SAMM team observations of patterns of visitor distribution or changes in behaviour around the SPA.

6.22 The SAMM team already undertake monitoring of this type, although additional monitoring (by the SAMM team if this is expanded, or by others) may be required to provide a more fine-grain assessment of access restriction measures, and analysis of the data would be required.

6.23 The annual review should involve engagement with representatives of key stakeholder groups and should be informed by annual ecological and visitor observation surveys. Monitoring and surveys would need to be tailored to the location and funding available, for example to choose between automated people counters versus user surveys.

Estimated costs

6.24 Tables 6.1 to 6.4 provide outline estimates for the anticipated costs of developing and implementing access restriction measures for the SPA. For the purposes of the costing it is assumed that the access restriction measures will incorporate an area of 1ha. Costs are provided for the delivery of the initial cycle of each intervention. For example if the intervention is temporary, costs are provided for the initial capital works (year 1), followed by the annual management costs (say years 2 – 5) and then by the costs associated with the removal of the intervention (e.g. removal of fencing) (year 6). An estimate of perpetuity costs is also provided for each measure to give an indication of the total life costs. These totals have been estimated through consideration of the average yearly costs over the 80-year period, including the cyclical process of each intervention (e.g. initial capital costs for set up, annual management, followed by the removal of the intervention).

6.25 Table 6.1 considers the costs associated with developing a management strategy for each SSSI unit of the SPA (or SSSI cluster).

6.26 Table 6.2 considers the costs for implementing projects relating to Option 1 of the proposed access restriction measures. This is focused on temporarily restricting access to known visitor hotspots at peak times or during key seasons. The measures would therefore be in place for a limited period and the works would need to be repeatedly annually. Access restriction measures would need to be inspected regularly whilst in operation.

6.27 Table 6.3 considers the costs for implementing projects relating to Option 2 of the proposed access restriction measures. This is focused on permanently restricting access to defined sections of the SPA to increase the area of open undisturbed land. Once the measure has been implemented, management would consist of regular inspections and carrying out repairs as required.

6.28 Table 6.4 considers the costs for implementing projects relating to Option 3 of the proposed access restriction measures. This is focused on extending the area of temporary fencing which has been erected through management of habitat mosaics (e.g. clear-cut forestry). This measure would be in place for up to three years to allow for the vegetation and trees to establish. Management during this period would consist of regular inspections and carrying out repairs as

required. Once the vegetation and trees have established, the restriction measures will be removed and could be implemented elsewhere as required.

6.29 The estimate of costs suggests that creating a permanent area of undisturbed heathland would initially be the most expensive option to implement. However, the cost of management of the required infrastructure to enclose and protect the heathland over subsequent years would be significantly less than the temporary access restriction measures. This is primarily due to the repeated costs associated with the temporary enclosure of land such as the repeated erection and dismantling of fencing. It is possible that permanently restricting access to heathland may also offer the greatest benefit to bird nesting productivity.

Funding, and linking mitigation to new development

6.30 It is envisaged the Access Management and Monitoring Partnership (which includes land managers) will be central to the identification of where and when access restriction measures should be implemented. The SAMM team may then be key to ensuring the measures are observed by visitors together with the ongoing monitoring of the effectiveness of the intervention.

6.31 The existing mechanisms to secure contributions from developers as part of the SPA avoidance and mitigation

strategies should be considered first as there may be scope to increase them to cover additional interventions.

6.32 Funding for additional access restriction interventions could be secured through increasing SAMM contributions already required of developers. An agreement could be drawn up in collaboration with all 11 LPAs through the JSPB for the increases in SAMM contributions to be taken up across all LPA areas; however, this could result in a very small level of additional mitigation per dwelling, which may not be needed for all developments. Instead, any capacity provided by access restriction measures could be utilised only for specific developments where it is agreed that traditional SANG cannot be delivered and an alternative mitigation package is required. This capacity could be held in a separate, optional SAMM tariff; and individual local authorities could choose whether to make this available as an option or not.

6.33 The Community Infrastructure Levy (CIL) could also offer some potential to collect additional contributions from development, although consideration will need to be given to how this would relate to the TBH SPA avoidance and mitigation strategies. For example, in Surrey Heath a significant proportion of CIL already goes to SANG. S106 contributions relating to individual development proposals might also be an alternative, if the development location is in proximity to a specific access restriction intervention.

Table 6.1: Identification of site-specific access restriction measures, monitoring and evaluation

Ref	Proposal	Cost per annum - Year 1	Cost per annum - Years 2 – 10
A.1	Provision of a warden service for liaison with visitors and specialist habitat maintenance and restoration. Assumed 1 person/ per year assume 0.5 of full time equivalent.	£25,000	£25,000
A.2	Preparation of management strategy for each site (or cluster). Scope of works to include gathering of a robust understanding of the significances of site and current visitor levels (including numbers, flows and impact on SPA). The robust baseline will be used to underpin future monitoring and evaluation of management as well as to enable the swift identification of triggers for delivery of access restriction measures. Management strategy to be prepared by the TBH Partnership organisation but with close collaboration with visitors, community representatives and other key stakeholders. Assumed plan to be operational for 10-year period before being fully re-written. Costs are per site / cluster.	£30,000	-
A.3	Annual review of management strategy for each site (or cluster). Assumed officer/ warden time including annual meeting with partnership and key stakeholders (e.g. visitors and other user groups).		£5,000
A.4	Public engagement to inform annual work programme prior to delivery of interventions. Including onsite and digital material.		£5,000
A.5	Monitoring and evaluation of access restriction measures including visitor observation surveys. Assumed visitor observation surveys to be led by wardens with support of volunteers. Cost includes small allowance for annual celebration of volunteers.		£5,000

Ref	Proposal	Cost per annum - Year 1	Cost per annum - Years 2 – 10
A.6	Monitoring and evaluation of bird populations.		£5,000
	Cost per annum	£55,000	£45,000
	In perpetuity costs (e.g. 80 year period)		£3,920,000

Table 6.2: Option 1: Steer people away from visitor hotspots

Ref	Proposal	Cost per annum - Years 1 - 10
1.1	Temporary/ seasonal fencing Assumed cleft chestnut pale fencing to enclose an area of 1ha. Allowance for inspection, removal and making good.	£15,000
1.2	Inspection of fencing and/ or dead hedges (assumed two hours per week)	£2,500
1.3	Improvements to alternative routes/ pathways (may include trimming back vegetation and localised/ sensitive filling of surfacing to provide level and access).	£2,000
1.4	Temporary interpretative signage Assumed simple laminated paper sign (similar to those used at Hazeley Heath during the Covid-19 pandemic). Allowance for removal.	Warden time
1.5	Temporary wayfinding signage including information to help avoid conflicts between visitor types. Assumed timber knee high posts driven into ground, based on x4 posts with waymarking disc. Allowance for removal and making good.	£3,000
	Cost per annum	£22,500
	In perpetuity costs (e.g. 80 year period)	£1,800,000

Table 6.3: Option 2: Increase area of open undisturbed heathland

Ref	Proposal	Cost per annum - Year 1	Cost per annum - Years 2 – 5
2.1	Permanent fencing Assumed wire agricultural fence with timber posts to enclose an area of 1ha. Allowance for inspection and repairs during years 2 – 5.	£10,000	£2,500 warden time plus allowance for repairs £1,000
2.2	Gate installation (based on x2 gates). Allowance for repairs/ replacement during years 2 – 10.	£5,000	£500
2.3	Improvements to alternative routes/ pathways (may include trimming back vegetation and localised/ sensitive filling of surfacing to provide level and access).	£5,000	£500
2.4	Tree inspection and management for safety and biodiversity on paths where access is promoted.	£500	£500
2.5	Allowance for establishment and resulting management of scrub to form 'natural barrier' to restrict displacement of visitors to currently undisturbed territory in the surrounding area.	£1,000	£500
2.6	Carry out de-compaction and works to promote regrowth of heathland species.	£500	

Ref	Proposal	Cost per annum - Year 1	Cost per annum - Years 2 – 5
2.7	Permanent interpretative signage to educate visitors about why areas of heathland need to be protected to attempt to deter visitors from crossing sensitive areas (based on x4 interpretation boards). Allowance for repairs years 2 – 5	£10,000	£1,000
2.8	Permanent wayfinding signage including information to help avoid conflicts between visitor types and to encourage visitors to keep to footpaths. Assumed timber knee high posts driven into ground, based on x4 posts with waymarking disc. Allowance for repairs years 2 – 10.	£5,000	£500
	Costs per annum	£37,000	£7,000
	In perpetuity costs (e.g. 80 year period)	£1,040,000	

Table 6.4: Option 3: Extend area of temporary fencing around clear-cut forestry

Ref	Project	Cost per annum - Year 1	Cost per annum - Years 2 – 5	Cost per annum - Year 6
3.1	Semi-permanent fencing. Assumed fencing to be installed for approximately 5-7 years to allow for establishment of successional vegetation. Assumed wire agricultural fence with timber posts to enclose an area of 1ha. Allowance for inspection and repairs during years 2 – 35. Removal of fencing in year 4 to be installed at an alternative site.	£10,000	£1,000	£5,000
3.2	Gate installation based on x2 gates. Allowance for repairs/ replacement during years 2 – 5.	£5,000	£500	£500
3.3	Improvements to alternative routes/ pathways (may include trimming back vegetation and localised/ sensitive filling of surfacing to provide level and access).	£5,000	£500	
3.4	Tree inspection and management for safety and biodiversity on paths where access is promoted.	£500	£500	
3.5	Allowance for establishment and resulting management of scrub to form 'natural barrier' to restrict displacement of visitors to currently undisturbed territory in the surrounding area.	£1,000	£500	
3.6	Temporary wayfinding signage including information to help avoid conflicts between visitor types. Assumed timber knee high posts driven into ground, based on x4 posts with waymarking disc. Allowance for removal and making good.	£5,000	£500	£500
	Costs per annum	£26,500	£3,500	£6,000
	In perpetuity costs (e.g. 80 year period)			£573,250

6.34 The above costs are based on known industry rates but are exclusive of preliminaries and contingencies. No allowance has been made for any professional fees which may be required.

6.35 It is recognised that costs will vary depending on the precise scope of work.

6.36 As no programme dates have been confirmed for carrying out the capital works, no allowances for future

inflation have been made. A contingency of 12% is recommended.

6.37 Other exclusions to the costs include:

- Future inflation costs/changes in tendering climate
- Interest/finance charges
- Legal fees
- Loose fittings and equipment (unless noted otherwise)

Chapter 6

Implementation and enforcement

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- Value Added Tax

Chapter 7

Conclusions and recommendations

Summary of study findings, recommendations and next steps

7.1 There is insufficient certainty at present to be able to rely on access restriction alone to provide mitigation for recreation pressure on the TBH SPA. This is mainly due to difficulties in predicting the scale of mitigation that could be provided, as there are a number of variables that would need to be understood, and there has been no analysis to date of the effects of previous access restrictions on bird nest productivity or displacement.

7.2 It is likely that access restriction would only be effective in combination with other access management measures, for example dog controls, parking restrictions and SAMM wardening, as these help to influence visitor behaviour from the point where they access the SPA.

7.3 The current mitigation strategy (SANG plus SAMM) was proposed because the combination of measures gave certainty that mitigation would work, with SANG providing the more quantifiable measure to draw people away from the SPA, and SAMM managing the visitors that still visited the SPA. It is likely that access restriction, similarly, would be more effective in combination with SANG or SANG alternatives, or it could be used to support other mitigation approaches (e.g. habitat restoration or parking controls). It may be possible to demonstrate a measurable effect from access restriction in its own right with further data, which could either be analysed for measures that have been / are being implemented anyway or as a focussed trial.

7.4 An access restriction trial could be undertaken in part of the SPA (a single SSSI unit or smaller), where a management strategy can be drawn up for the whole area and monitoring can be undertaken by the SAMM team. Monitoring should include tracking visitors through automated counters and visitor survey, and a comparison with bird data to assess the impacts of interventions.

7.5 Existing bird survey data also needs to be analysed to see whether it shows the effects of recent changes in access restriction, particularly at:

- Long Valley, where visitors were permitted access prior to 2018 but are now restricted periodically using warning flags; and
- In Forestry Commission plantations e.g. Bramshill, where clear-felled areas have been fenced.

7.6 Most access restriction measures can be implemented relatively quickly, compared to new SANGs/SANG alternatives, therefore a trial of measures could be undertaken in the short term to gather data. This could also enable some potential 'mitigation' to be in place while longer term measures are being established; dead hedging to direct footfall, a flags system, or promotion of alternative routes, for example. If data indicates that access restriction is effective, then it could continue to be used as a faster-response mitigation method alongside other measures.

7.7 Access restrictions could also be used in combination with habitat restoration: increasing areas of open undisturbed habitat could be combined with scrub control, for example. Habitat restoration may provide mitigation in its own right (assessed as a separate mitigation option).

7.8 The next stage of the project will bring together the separate studies and consider how measures might be used together and whether any are more likely to be effective than others. The findings of this C3 study are that access restriction could play a part in mitigating visitor pressure if further evidence is gathered, in combination with other mitigation measures.

Appendix A

Condition of SPA SSSI units

**SSSI condition used to inform
identification of priority areas**

Site Name	Status	Summary of most recent SSSI survey
Ash to Brookwood Heaths SSSI		
Unit 12	Unfavourable no change	The unit is considered to be in unfavourable condition, as it provides a very limited area of rather poor quality 'open' habitat for heath land flora and fauna. The unit has the potential to be enhanced for heath land species, including the bird assemblage. At present there is no suitable nesting habitat for specialist heathland birds, though some of the woodland edge habitats are suitable for foraging by nightjar. There is significant amount of recreational visitor pressure, mainly dog walkers along the way leave.
Units 1, 3, 4, 5 and 20	Unfavourable recovering	Targets for habitat percentage cover and structural diversity are being met in some areas. In other areas, percentage cover of bare ground, structural diversity of heather, and dominance of pine trees and scrub needs to be addressed. There are areas of suitable habitat for all three species of SPA birds, with some units supporting significant populations.
All other units	Favourable	Many of these units have extensive areas of habitat suitable for populations of all 3 SPA birds - monitoring data confirms that they utilise this part of the site for nesting and they are present in nationally important numbers over the site as a whole. Habitat conditions are good for scarce heathland invertebrates.
Bourley and Long Valley SSSI		
All units	Unfavourable recovering	Supports a diverse range of habitats that are generally in good condition. Scrub, bracken and tree encroachment is an issue in some areas. Some areas are in need of further management to increase structural diversity.
Bramshill SSSI		
All units	Unfavourable recovering	The site supports areas of good habitat condition with targets being met. However, in some areas, scrub, bracken and rhododendron encroachment is an issue, and areas of bare ground have become dominated by grasses. Most of the plantation woodland contains a varied mix of age classes and recently felled areas.
Broadmoor to Bagshot Woods and Heaths SSSI		
Unit 1 (west of the site)	Unfavourable - No change	Fragmented from the rest of the site, being surrounded by roads and residential housing – likely subject to recreational pressure. The area comprises secondary woodland and dry heath. The dry heath has a varied structure with good cover of gorse and bare ground but also dense areas of invasive trees and scrub. The area has potential as a breeding habitat for the SPA Birds, and all 3 species have been previously recorded in low numbers from on or very close to the eastern area.
Units 12 - 16	Unfavourable recovering	Some areas of heather provide suitable nesting habitat for all three bird species, however much of the heath has a poor structural diversity. There is some managed diversity in heather age-class created by the mown firebreak system, and this is of value to invertebrates and woodlark, although recreational disturbance is likely to prevent woodlark from nesting on these habitat patches.
All other units	Favourable	Units 7, 9, 10 and 11 are managed a commercial conifer plantation with rotational management providing suitable bird habitat, which is being used by all 3 SPA species.
Castle Bottom to Yateley and Hawley Commons SSSI		
Unit 7	Unfavourable declining	There has been a loss of extent of the lowland dry heath feature due to scrub and gorse encroachment. There is a lack of sufficient age structure of heather. There has been much public access and dog walking therefore the potential for disturbance at this site is high.
Units 8 and 10	Unfavourable no change	These areas are dominated by conifer plantation, secondary woodland and bracken with some areas of dwarf shrub heath. The supporting habitat surfaces for the invertebrate assemblages are also noted to be absent. Would benefit from clearance to provide more suitable habitat for SPA birds as this is currently limited.
All other units	Unfavourable recovering	In good condition on the whole but with some areas lacking management. In some areas the grazing is having clear effects on the diversity of the heather, bare ground and other key features. However, there is an excess of birch saplings in some areas which the ponies are not grazing on. The mire systems are also overgrown with dense scrub. An area of gravell extraction is currently of low suitability, but this is expected to change once taken out of use and restored to heathland.
Unit 13	Favourable	SSSI wide, the targets for nightjar and woodlark (rounding up) have been met, however Dartford warbler numbers are below target. This is a reflection on the cold weather in 2008/9 and 2009/10, numbers for this species are still recovering from the crashes in those years. This site is managed as rotational forestry.

Appendix A
Condition of SPA SSSI units

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Site Name	Status	Summary of most recent SSSI survey
Chobham Common SSSI		
Units 3, 5, 7, 8, 9, 12, 14, 15, 17, 18, 19, 22 and 23	Unfavourable recovering	The majority of the site's heathland has low structural diversity and is lacking in areas of bare ground. However, plans are in place to increase the structural diversity of the heather blocks. Cover of gorse and scrub are mostly within target levels. Data indicate that Chobham Common supports significant numbers of breeding nightjar, Dartford warbler and woodlark.
All other units	Favourable	In most areas the structural diversity of the heathland, scrub cover and bare ground cover and within targets. Data indicate that Chobham Common supports significant numbers of breeding nightjar, Dartford warbler and woodlark.
Colony Bog and Bagshot Heath SSSI		
Units 3 and 18	Unfavourable declining	Unit 3 – this is a small area with a valley mire. Small areas of dry heath are present and in good condition but management priorities relate to the mire. Litter is generally well above 50% cover and increasing and scrub encroachment is an issue in some areas. Unit 18 – This area comprises mature secondary woodland. Much of the unit used to include extensive areas of open heathland but this has now developed into woodland of low suitability for SPA birds.
All other units	Favourable	The unit includes extensive areas of open heath land, with some areas of grassland and mixed woodland. Recent monitoring shows that the unit is of value to breeding heathland birds, including nightjar, dartford warbler and stonechat, with numerous sightings, although there is currently little suitable habitat for woodlark. Despite rather high levels of recreational activity in some units, active visitor management has been effective in limiting undue disturbance to SPA species.
Units 2, 5 and 12	Unfavourable recovering	Provides open heathland with suitable habitat for the SPA birds but some areas have higher than target scrub cover and other habitats include unmanaged woodland and conifer plantation with low suitability. Would benefit from increased management and selective woodland clearance. Recreational disturbance is a risk in some areas.
Eelmoor Marsh SSSI		
All units	Favourable	The site provides a varied mosaic of habitats which are mainly in good condition, with grazing animals helping to maintain structural diversity and features such as bare ground. There is a good transition from grass-heath to dense stands of dwarf shrubs and variable ages of gorse.
Hazeley Heath SSSI		
Unit 13 – north-west part of site	Unfavourable declining	The unit is a mosaic of habitats, with a variety of wetter communities present. Historically it supported an area of wet mire which appears to have disappeared under wet Willow and Alder woodland. In drier areas the secondary woodland is dominated by Oak and Birch. In the far south-west area, conditions are drier overall and the area has more potential to support lowland dry heath. The area would benefit from removal of bracken, trees and nettles. In many areas the community was observed to be very rank and dominated by grasses, sedges or rushes, with fewer wildflowers. Reason for adverse condition: lack of corrective works - inappropriate scrub control, lack of corrective works - inappropriate weed control
All other units	Unfavourable recovering	The following SSSI/HLS targets are not being met in some areas: insufficient bare ground, excessive litter, insufficient bryophyte and lichen coverage, insufficient short sward for woodlark and some areas where sapling growth are becoming dominant, frequency of graminoids, cover of gorse, proportion of dwarf shrub or heather in pioneer stage, proportion of dwarf shrub or heather in late mature/degenerate stage and proportion of dwarf shrub or heather dead, frequency of desirable wildflower species, cover of bracken/ bracken litter, cover of dwarf shrubs, cover of trees and shrubs, presence of all heather growth phases, proportion of dwarf shrub or heather in building/mature stage, presence of activities causing disturbance, presence of firebreaks.
Horsell Common SSSI		
All other units	Unfavourable recovering	Areas of woodland and heathland need increased management to restore larger areas of heathland habitat. Woodland is managed but failing in age ranges. This is already underway in some units and progressing well. Unit 4 (Horsell Common in the south-west), heavy recreational use and dog fouling is creating pressure on the tracks and sandpit habitats.

Appendix A
Condition of SPA SSSI units

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Site Name	Status	Summary of most recent SSSI survey
Unit 1	Favourable	The area is in good condition, grazing and pine/birch regeneration is controlled. Some areas of mature gorse to be reduced. Newly scraped and cleared areas in the north east corner of wet heathland are regenerating well. Nightjar and woodlark recorded and habitat for invertebrates secure.
Ockham and Wisley Commons SSSI		
Units 7 and 9	Unfavourable recovering	Much of the site was previously of low suitability due to the dominance of mature trees. Much of the site has now been cleared and there is now good re-establishment of heather and cross-leaved heath in cleared areas although bracken has become dominant in places. Suitable conditions are present for nesting and feeding nightjar. In other areas further tree and rhododendron clearance is needed.
All other units	Favourable	Over the common is a good representation of structural elements of value to heathland birds. There are well-structured transitions between woodland and heathland and glade type features offering good conditions for feeding nightjar. The amount of gorse and thicket is limited but despite this there is a good representation of features which offer suitable nesting habitat for Dartford warbler
Sandhurst to Owlsmoor Bogs and Heaths SSSI		
All units (1, 2 and 3)	Unfavourable recovering	The targets for cover of dwarf shrub heath, bare ground, bracken, litter, negative indicator species, gorse, trees and scrub on the wet heath and bryophytes and lichens were all met and there was no evidence of erosion, trampling, artificial drains, pollution. The largest area of open heath is in the centre of Units 2 and 3. This is generally in very good condition with some scrub and Bracken encroachment. Nightjar use habitat in this unit annually, and there is suitable habitat for Dartford warbler. Woodlark habitat is more limited, but areas have been used in the last 5 years.
Whitmoor Common SSSI		
Unit 11	Unfavourable no change	The main feature of interest in this small unit is a pond which no longer supports notable plant species and requires restoration.
Units 1 and 9	Unfavourable recovering	Unit 9 is receiving high levels of management to control invasive scrub and bracken, as such it remains Unfavourable recovering. Unit 1 requires grazing/ management to improve the condition and diversity of the habitats.
All other units	Favourable	Overall structure of the heathland is meeting objectives although greater representation of short vegetation and bare ground is desirable. Monitoring of Annex 1 birds indicates that the structure of the heath is suitable for nightjar and Dartford warbler. Given the nature of the heath it is likely that woodlark will only use the site after events which create bare ground such as fires or tree clearance.

Appendix B

Assessment proformas

**Comparison of each of the
mitigation scenarios**

Table B.1: Blank proforma for reference

Ref: X	Option: [Title summarising mitigation or avoidance measure]
Description [of mitigation or avoidance measure]	
Characteristics	
Type of intervention [e.g. SANG variation]	
Scale of intervention [explanation, e.g. policy / single district / within SPA]	
Existing evidence base [summary of information available]	
Gaps in evidence base [summary of information required; to be updated as project proceeds]	
Effectiveness	
[RAG rating]	HRA implications [Explanation; what will be subject to HRA; can option be considered 'mitigation' (may be difficult to determine without legal advice); what would need to be demonstrated to conclude no Adverse Effects on Integrity? (AEOI – a requirement of the Habitats Regulations) <i>Rating based on a scale with Green being more likely to avoid AEOI and Red less likely.</i>
[RAG rating]	Likely outcomes of implementing option [e.g. scale of potential effectiveness; what would be needed to understand likely outcome; potential number of homes that could be accommodated if mitigation/avoidance measure associated with development. <i>Rating based on a high (Green), medium, low (Red) range in terms of potential scale of contribution to each district's housing requirement]</i>
Relationship to other options being considered [i.e. would it only be effective in conjunction with another of the options (in addition to the existing measures); does this preclude another?]	
Monitoring effectiveness [how can effectiveness of this option be monitored / measured?]	
Deliverability	
[RAG rating]	Implementation method [description of steps required to implement. <i>Rating based on range from simple (Green) to complex (Red)</i>]
[RAG rating]	Stakeholders [identify stakeholders. <i>Rating based on extent of cooperation required e.g. Green: factors easily controlled by the three Councils; Red: large number of stakeholders / cross boundary working]</i>
[RAG rating]	Potential sources of funding [and likelihood of securing it. <i>Rating based on low, medium and high likelihood of securing it]</i>
[RAG rating]	Potential costs [estimated capital / ongoing costs. <i>Rating based on a low, medium and high range of costs]</i>
Overall assessment	

Appendix B
Assessment proformas

C3 Access Research Study: Access Restriction
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<p>Explanation for overall assessment</p> <p>[e.g. overall conclusions at current stage; discussion around relative weight of RAG scores, whether the option needs to be ruled out. <i>Rating based on whether option is recommended as mitigation e.g. Green is positive, Amber indicates some uncertainty, Red indicates that problems are likely</i>]</p>	<p>[RAG Rating]</p>
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Ref: 1	Option: Steer people away from visitor hotspots
Description	
<p>Temporary/seasonal restriction of access to visitor hotspots, using fences, brash or logs to block desire lines and signage and information to encourage visitors onto alternative routes, for example as carried out by Hart at Hazeley Heath during the Covid-19 pandemic. This could be triggered by monitoring changes in behaviour or visitor distribution around the SPA.</p> <p>This approach could be implemented in combination with car parking restrictions or closure, but displacement or dispersal of visitors would be likely to be an issue.</p>	
Characteristics	
Type of intervention	
Access restriction, which could be in combination with parking controls and access management	
Scale of intervention	
Visitor hotspots where the SAMM team operate, across the SPA, although could be trialled in a single location	
Existing evidence base	
<p>Visitor Distribution and Access Background Paper (2020) by LUC</p> <p>This draws on existing data including on:</p> <ul style="list-style-type: none"> ■ Annual bird survey data and visitor survey data (hotspots) ■ Access points and car parking locations and capacity 	
Gaps in evidence base	
<p>How visitor hotspots change through the year; therefore, the trigger for implementation would need to be based on monitoring, initially (as part of a trial before being relied on as mitigation; see 'monitoring', below)</p> <p>Detailed analysis of displacement effects (see 'monitoring', below)</p> <p>Monitoring of effectiveness of measure on nest productivity (see 'monitoring', below)</p>	
Effectiveness	
	<p>HRA implications</p> <p>Implementation would need to be in place before adverse effects occur and linked to development. Appropriate locations for mitigation would need to be identified before visitors increase to show that mitigation is in place at the planning application stage. It may be possible to use on-the-ground observations such as increasing visitor numbers to trigger specific measures (e.g. temporary access restrictions), but these would need to be put in place rapidly, before harm occurred. Would need to demonstrate that displacement does not just move impact elsewhere. Therefore; this option would need to be trialled before being relied on as mitigation.</p> <p>There is currently insufficient data on the potential effectiveness of access restrictions (and associated displacement effects) for there to be certainty of mitigation.</p>
	<p>Likely outcomes of implementing option</p> <p>It is likely that focussing on visitor hotspots would disperse visitors elsewhere in the SPA and could increase disturbance in areas that were otherwise less disturbed. Hotspots are popular areas where visitors may have strong expectation of how they can use those areas, so non-compliance more likely. Previous use of logs/brash to block desire lines has been unsuccessful in some parts of the SPA.</p>
Relationship to other options being considered	
<p>It may be appropriate to use access restriction as a means of temporarily supporting other mitigation approaches (e.g. supporting habitat restoration or managing visitors close to areas where parking controls have been implemented), while using monitoring and data analysis to appraise the effectiveness of those access restrictions.</p> <p>Access restrictions are likely to be more acceptable to the public if combined with an increase in SAMM wardening / education and with clear communication, consultation and engagement</p>	
Monitoring effectiveness	

<p>The effectiveness of this measure would be difficult to predict in advance, due to the likely displacement/dispersal effects, however visitor numbers arriving at car parks could be measured and compared with car park survey data to monitor a trial, along with analysis of nest productivity data from the annual bird survey. Automatic vehicle counters at car parks would assist with identifying an increase in visitors, to trigger implementation of measures.</p> <p>An access restriction trial could be undertaken in part of the SPA (a single SSSI unit or smaller), where a management plan can be drawn up for the whole area and monitoring can be undertaken by the SAMM team.</p>	
<p>Deliverability</p>	
	<p>Implementation method</p> <p>Temporarily blocking desire lines and use of signage is relatively easy to implement and within the range of tasks currently undertaken by land managers (blocking paths) or the SAMM team (signage).</p> <p>An access restriction trial could be undertaken in part of the SPA (a single SSSI unit or smaller), where a management plan can be drawn up for the whole area and monitoring can be undertaken by the SAMM team. Bird survey data also needs to be analysed to see whether it shows the effects of recent changes in access restriction.</p> <p>It may then be possible to demonstrate a measurable effect from access restriction in its own right with further data, which could either be analysed for measures that have been / are being implemented anyway or as a focussed trial.</p> <p>Access restriction measures can be implemented relatively quickly, compared to new SANGs/SANG alternatives for example, therefore a trial of measures could be undertaken in the short term to gather data. This could also enable some potential 'mitigation' to be in place while longer term measures are being established. If data indicates that access restriction is effective, then it could continue to be used as a faster-response mitigation method alongside other measures.</p>
	<p>Stakeholders</p> <p>Natural England</p> <p>Land owners / site managers and wardens</p> <p>Cooperation between authorities may be required to anticipate and manage displacement other sites</p>
	<p>Potential sources of funding</p> <p>Developer contributions collected through existing SAMM system. However, it is not currently possible to quantify access restriction mitigation; until this is possible, it would be difficult to assign developer contributions linked to new homes.</p>
	<p>Potential costs</p> <p>The cost of implementing temporary/seasonal measures will be relatively low. However, this capital expenditure will need to be repeated perhaps on annual basis and there may be an additional charge for removal and storage of materials whilst not in use (e.g. cleft chestnut pale fencing). Measures will need to be monitored regularly to assess effectiveness and monitor impact of recreational pressure on the wider SPA.</p>
<p>Overall assessment</p>	
<p>Less likely to be effective than other options due to likelihood of displacement/dispersal and potential for non-compliance.</p>	
<p>Option ruled out of further assessment for main study.</p>	

Ref: 2	Option: Increase area of open undisturbed heathland
Description	
<p>Block desire lines through open heathland and improve and/or promote routes around the perimeter of the habitat. Manage scrub to maintain open area and screen desire lines. This option could be achieved on a seasonal basis e.g. with signage explaining sensitivity of area for birds, but it is likely that longer term changes would be more successful and require less ongoing access management. This option therefore would not require a specific trigger but could be implemented wherever suitable habitat exists.</p> <p>Suitable locations for this would be areas of heathland that are not currently visitor hotspots (to avoid significant displacement), but which are subject to some disturbance.</p>	
Characteristics	
Type of intervention	
Access restriction, which could be in combination with habitat management / restoration and access management	
Scale of intervention	
Suitable areas of habitat across whole SPA, although could be trialled in a single location	
Existing evidence base	
<p>Visitor Distribution and Access Background Paper (2020) by LUC</p> <p>This draws on existing data including on:</p> <ul style="list-style-type: none"> ■ Broad habitat types across SPA ■ Annual bird survey data and visitor survey data (hotspots) ■ SSSI condition surveys and recommendations on management 	
Gaps in evidence base	
Monitoring of effectiveness of measure on nest productivity (see 'monitoring', below)	
Effectiveness	
	<p>HRA implications</p> <p>Focussing on increasing the area of undisturbed habitat reduces disturbance of valuable habitats and also reduces fragmentation and increases resilience. Reduction in disturbance likely to be considered 'mitigation' in HRA terms, subject to displacement effects, and increased resilience of habitats/reduction in fragmentation might be considered 'mitigation', subject to assessment of habitat restoration mitigation option (separate study). This option would need to be trialled before being relied on as mitigation.</p> <p>There is currently insufficient data on the potential effectiveness of access restrictions (and associated displacement effects) for there to be certainty of mitigation.</p>
	<p>Likely outcomes of implementing option</p> <p>This option does not focus on existing visitor hotspots but could have a measurable effect across the SPA. Could result in displacement/dispersal of visitors within the SPA (or elsewhere), although selection of less popular area would reduce this, as could selection of promoted routes. Less likely to be met with resistance than restriction in hotspots. Could reduce disturbance of all three qualifying bird species (which all use heathland).</p>
Relationship to other options being considered	
<p>It may be appropriate to use access restriction as a means of temporarily supporting other mitigation approaches (e.g. supporting habitat restoration or managing visitors close to areas where parking controls have been implemented), while using monitoring and data analysis to appraise the effectiveness of those access restrictions.</p> <p>Should be considered alongside any wider habitat management/restoration aims/plans and would need access management (wardening/education) to be effective.</p>	
Monitoring effectiveness	
<p>Increase in area of open undisturbed habitat could be used as metric for scale of effectiveness. Work would be needed to identify potential correlation between area of open habitat and number of bird territories. This could be done with existing data initially and followed up with monitoring from a trial to identify additional bird territories and calibrate the metric.</p>	

<p>Analysis of bird survey data before and after implementation would be required to demonstrate effectiveness and guide further mitigation in the future.</p> <p>An access restriction trial could be undertaken in part of the SPA (a single SSSI unit or smaller), where a management plan can be drawn up for the whole area and monitoring can be undertaken by the SAMM team.</p>	
<p>Deliverability</p>	
	<p>Implementation method</p> <p>Blocking desire lines and use of signage is relatively easy to implement and within the range of tasks currently undertaken by the land managers and SAMM team. Management of scrub (e.g. gorse) to screen desire lines could be supplemented by new planting and temporary logs/brush, while screening establishes.</p> <p>An access restriction trial could be undertaken in part of the SPA (a single SSSI unit or smaller), where a management plan can be drawn up for the whole area and monitoring can be undertaken by the SAMM team. Bird survey data also needs to be analysed to see whether it shows the effects of recent changes in access restriction.</p> <p>It may then be possible to demonstrate a measurable effect from access restriction in its own right with further data, which could either be analysed for measures that have been / are being implemented anyway or as a focussed trial.</p> <p>Access restriction measures can be implemented relatively quickly, compared to new SANGs/SANG alternatives for example, therefore a trial of measures could be undertaken in the short term to gather data. This could also enable some potential 'mitigation' to be in place while longer term measures are being established. If data indicates that access restriction is effective, then it could continue to be used as a faster-response mitigation method alongside other measures.</p>
	<p>Stakeholders</p> <p>Land owners / site managers</p> <p>Natural England</p> <p>Could be implemented by individual authorities / landowners in conjunction with Natural England.</p>
	<p>Potential sources of funding</p> <p>Developer contributions collected through existing SAMM system. However, it is not currently possible to quantify access restriction mitigation; until this is possible, that it would be difficult to assign developer contributions linked to new homes.</p>
	<p>Potential costs</p> <p>Implementation costs will be higher than those associated with temporary interventions but ongoing costs will be limited to inspections and repairs.</p>
<p>Overall assessment</p>	
<p>Relatively easy to implement and could be carried out in a way that is acceptable to visitors. Might not alter the distribution of large numbers of visitors but its effectiveness could be boosted by the increases in habitats resilience and reduction in fragmentation. A trial would be necessary to determine the potential effectiveness of this approach as a mitigation measure.</p>	

Ref:3	Option: Extend the area of temporary fencing around clear-cut forestry
Description	
<p>Temporary fencing is currently used by the Forestry Commission around recently cleared areas of woodland, while newly planted trees establish. This could be extended by taking the same approach in areas of woodland not currently managed by the Forestry Commission. This might require rotational felling of woodland to manage it for the qualifying bird species in a way that is not currently undertaken.</p> <p>Suitable areas would be areas of woodland not currently under Forestry Commission management, where the landowner is willing and the woodland is suitable (for example not ancient woodland). If there are areas that could be subject to rotational felling and management that are not already, this would need to be compatible with any other designations e.g. SAC/SSSI, as rotational felling would not be appropriate for some species/habitats.</p>	
Characteristics	
Type of intervention	
Access restriction, which could be in combination with habitat restoration	
Scale of intervention	
Suitable areas of habitat across whole SPA, although could be trialled in a single location	
Existing evidence base	
<p>Visitor Distribution and Access Background Paper (2020) by LUC</p> <p>This draws on existing data including on:</p> <ul style="list-style-type: none"> ■ Broad habitat types across SPA ■ Annual bird survey data and visitor survey data (hotspots) ■ SSSI condition surveys and recommendations on management ■ Forestry Commission Forest Plans 	
Gaps in evidence base	
Monitoring of effectiveness of measure on nest productivity (see 'monitoring', below)	
Effectiveness	
	<p>HRA implications</p> <p>Reduction in disturbance likely to be considered 'mitigation' in HRA terms, subject to displacement effects, and any associated alteration in habitat (e.g. bringing new woodland into rotational coppice management) might be considered 'mitigation', subject to assessment of habitat restoration mitigation option (separate study). This option would need to be trialled before being relied on as mitigation.</p> <p>There is currently insufficient data on the potential effectiveness of access restrictions (and associated displacement effects) for there to be certainty of mitigation.</p>
	<p>Likely outcomes of implementing option</p> <p>Would focus on habitats used by woodlark and nightjar, but not Dartford warbler, which favours heathland. This approach is used in Forestry Commission woodland, and largely acceptable to the public (some instances of vandalism), so may be more likely to be acceptable to visitors in other areas. Could be incorporated into longer term management of the SPA (in line with rotational forestry timescales), but likely to be limited in locations in which approach can be expanded.</p>
Relationship to other options being considered	
<p>It may be appropriate to use access restriction as a means of temporarily supporting other mitigation approaches (e.g. supporting habitat restoration or managing visitors close to areas where parking controls have been implemented), while using monitoring and data analysis to appraise the effectiveness of those access restrictions.</p> <p>Could be carried out alone but likely to be more effective in conjunction with access management / wardening. Where rotational felling is implemented in new areas, there is overlap with the habitat restoration mitigation option, being explored separately.</p>	
Monitoring effectiveness	

<p>Increase in area of open undisturbed habitat could be used as metric for scale of effectiveness. Work would be needed to identify potential between area of open habitat and bird numbers. This could be done with existing data initially and followed up with monitoring to calibrate the metric.</p> <p>Analysis of bird survey data before and after implementation would be required to demonstrate effectiveness and guide further mitigation in the future. An access restriction trial could be undertaken in part of the SPA (a single SSSI unit or smaller), where a management plan can be drawn up for the whole area and monitoring can be undertaken by the SAMM team.</p>	
Deliverability	
	<p>Implementation method</p> <p>Relatively straightforward to implement physically (fences and signage) if there are areas of woodland under rotational felling that are not currently fenced after felling, although requires willing landowners. If new woodland management is required, this is more complex and will require further assessment of suitability and ongoing management.</p> <p>An access restriction trial could be undertaken in part of the SPA (a single SSSI unit or smaller), where a management plan can be drawn up for the whole area and monitoring can be undertaken by the SAMM team. Bird survey data also needs to be analysed to see whether it shows the effects of recent changes in access restriction.</p> <p>It may then be possible to demonstrate a measurable effect from access restriction in its own right with further data, which could either be analysed for measures that have been / are being implemented anyway or as a focussed trial.</p> <p>Access restriction measures can be implemented relatively quickly, compared to new SANGs/SANG alternatives for example, therefore a trial of measures could be undertaken in the short term to gather data. This could also enable some potential 'mitigation' to be in place while longer term measures are being established. If data indicates that access restriction is effective, then it could continue to be used as a faster-response mitigation method alongside other measures.</p>
	<p>Stakeholders</p> <p>Land owners / site managers</p> <p>Natural England</p> <p>Could be implemented by individual authorities / land owners in conjunction with Natural England.</p>
	<p>Potential sources of funding</p> <p>Developer contributions collected through existing SAMM system. However, it is not currently possible to quantify access restriction mitigation; until this is possible, it would be difficult to assign developer contributions linked to new homes.</p>
	<p>Potential costs</p> <p>Implementation costs will be less than temporary interventions but ongoing costs will be higher due to the need to remove fencing once trees and vegetation has established.</p>
Overall assessment	
<p>Relatively easy to implement and could be carried out in a way that is acceptable to visitors. Might not alter the distribution of large numbers of visitors and would not benefit Dartford warbler significantly, but effectiveness could be boosted with additional habitat management (/restoration). A trial would be necessary to determine the potential effectiveness of this approach as a mitigation measure.</p>	