Dorset Biodiversity Appraisal Protocol

Natural Environment Team

Guidance for Consultants and Developers

Section E - Bryanston greater horseshoe bat Site of Special Scientific Interest (SSSI)

Contents Page no.

Part A: Non-technical section

1. Who is the guidance aimed at and why?

1.1 This advice is aimed at developers, planning agents and consultants involved in planning and assessing development proposals in the landscapes surrounding the Bryanston Site of Special Scientific Interest (SSSI).

1.2 The guidance sets out a clear approach to considering impacts of development on the SSSI. The guidance provides a consistent basis for understanding how rare greater horseshoe bats use the landscape and where there is likely to be greater risk from development. This will help inform strategic planning for the area's future housing needs.

1.3 The guidance will comprise a component of the development management process, to be considered in line with relevant local policies, and will be applied to applications, falling within 8km of Bryanston SSSI.

1.4 At project level the guidance will help identify key issues at pre-application / master planning stage that will inform survey effort and design and the location and sensitive design of development proposals. This will help to minimise delays and uncertainty. Within the zones identified, there will be clear requirements for survey information and a requirement to retain and enhance key habitat for bats and for effective mitigation. This will demonstrate that development proposals avoid harm to the designated bat populations and support them where possible, in keeping with the mitigation hierarchy (NPPF, 2019).

1.5 The guidance explains how development activities may impact the SSSI and the steps required to avoid or mitigate any impacts. It applies to development proposals that could affect the SSSI. The planning authority will consider, based on evidence available, whether application proposals are likely to impact on greater horseshoe bats and if so, this guidance will be applied. This will reduce the likelihood that it would be applied to minor developments which would not have an impact on the SSSI.

1.6 The guidance brings together best practice and learning from areas with similar approaches and is taken from the North Somerset Bat Special Area of Conservation (SAC) technical guidance. It will be reviewed regularly alongside all published DBAP guidance.

2. More about the SSSI

2.1 Sites of Special Scientific Interest (SSSIs) are conservation sites of national importance. The Bryanston SSSI is important for greater horseshoe bats in particular; and is designated principally for its function as a breeding and hibernation site. The greater horseshoe breeding colony is one of only seven in Britain. Two artificial caves secure suitable habitat for other species to overwinter including lesser horseshoe; common and soprano pipistrelle; grey and brown long-eared; whiskered; Daubenton's; Bechstein's; Natterer's; serotine and barbastelle bats.

2.2 The landscapes around the SSSI itself are also important in providing foraging habitat needed to maintain the Favourable Conservation Status of the horseshoe bats. Therefore, this guidance sets out requirements for consultation, survey information, appropriate mitigation, net gain and as a last resort; compensation to demonstrate that development proposals will not adversely effect on the bat populations by impacts on their foraging and commuting habitats.

3. Juvenile Sustenance Zones

3.1 The guidance identifies the Juvenile Sustenance Zones of 1km around the maternity roosts. New build development on green field sites must be avoided in the Juvenile Sustenance Zone (JSZ) in view of their sensitivity and importance as suitable habitat as foraging areas for young bats.

4. Consultation Zone
4.1 The guidance also identifies the Consultation Zone where greater horseshoe bats may be found, divided into bands A, B and C, reflecting the likely importance of the habitat for the bats and proximity to maternity and other roosts.

4.2 Within the Consultation Zone development is likely to be subject to particular requirements, depending on the sensitivity of the site.

5. **Need for early consultation**
5.1 Section 3 below stresses the need for pre-application consultation for development proposals.

5.2 Within bands A or B, proposals with the potential to affect features important to the bats (identified in paragraph 3.2 below) must be discussed with the Dorset Council Natural Environment Team (DCNET).

5.3 Within band C developers should take advice from their consultant ecologist.

6. Survey requirements
6.1 Section 3 below and Annex 3 of this guidance sets out the survey requirements applying to development proposals within the Consultation Zone. Outside the Consultation Zone development proposals may still have impacts on bats, and developers must have regard to best practice guidelines, such as current Bat Conservation Trust survey guidelines and Natural England's Standing Advice for Bats.

6.2 For proposals within the Consultation Zone (all bands), developers must employ a consultant ecologist at an early stage to identify and assess any impacts.

6.3 For proposals within bands A and B of the Consultation Zone, full season surveys will be needed (unless minor impacts can be demonstrated) and must include automated bat detector surveys. Survey results are crucial for understanding how bats use the site, and therefore how impacts on greater horseshoe bats can be avoided or mitigated. Where mitigation is needed, survey results will inform the habitat needed and this must be agreed with DCNET (see Annex 5).

6.4 Within Band C survey effort required will depend on whether a commuting structure is present and the suitability of the adjacent habitat to support prey species hunted by horseshoe bats.

7. Proposed developments with minor impacts
7.1 In some circumstances a developer may be able to clearly demonstrate (from their qualified ecologist's appraisal and report) that the impacts of a proposed development are proven to be minor and can be avoided or mitigated (or do not require mitigation) without an impact on SSSI bat habitat, so a full season's survey is not needed. This should be substantiated in a robust statement submitted as part of the development proposals.

8. Need for mitigation, including provision of replacement habitat
8.1 Within the Consultation Zone (all bands), where SSSI bats could be adversely affected by development appropriate mitigation is required.

8.2 Development proposals must seek to retain and enhance existing habitats and features of value to bats such as those listed in paragraph 3.2 below in this guidance. Where this is not or is only partially possible appropriate mitigation such as the provision of replacement habitat will be required. The council's ecologists will have regard to relevant considerations in determining the mitigation requirements, including survey results and calculations relating to quantity of replacement habitat. Developers must agree with DCNET the amount of habitat required to replace the value of that lost to

greater horseshoe bats prior to the application being submitted, to check that the proposed master plan for the site has adequate land dedicated to the purpose.

8.3 Any replacement habitat must be accessible to the horseshoe bat population affected.

8.4 Where the replacement provision is to be made on land off-site (outside the red line development boundary of the planning application) any existing value of that land as bat habitat will also be factored into the calculation.

8.5 Where the replacement provision is to be off-site, and land in a different ownership is involved, legal agreements will be needed to ensure that the mitigation is secured in perpetuity.

8.6 A Landscape & Ecological Management Plan (LEMP) for the site must be provided setting out how the site will be managed for SSSI bats in perpetuity.

8.7 Where appropriate a Monitoring Strategy must also be provided to ensure continued use of the site by SSSI bats and include measures to rectify the situation if negative results occur.

Part B: Technical guidance

1. Introduction

1.1 The Bryanston SSSI is notified under the Wildlife and Countryside Act 1981, as amended (primarily by the Countryside and Rights of Way Act 2000). This means that the populations of bats supported by this site are of national importance and therefore afforded high levels of protection, placing significant legal duties on decision-makers to prevent damage to bat roosts, feeding areas and the routes used by bats to travel between these locations.

1.2 All bat species are fully protected under section 9 (5) of the Wildlife and Countryside Act 1981 (as amended). Designated as European Protected Species they additionally receive protection from the Conservation of Habitats and Species Regulations (EU Exit 2019) which transposes Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) in the United Kingdom. Habitats supporting fauna listed on Annex II of the Habitats Directive can be designated as Special Areas of Conservation (SAC) sites and the bat species listed under Annex II of the Regulations. These include the greater horseshoe and lesser horseshoe bats; Bechstein's and barbastelle bats; all of which are found in Dorset.

1.3 The SSSI is designated primarily for the Annex II greater horseshoe (*Rhinolophus ferrumequinum)* and is also noted for the presence of hibernating lesser horseshoe (*Rhinolophus hipposideros)* bats.

1.4 The purpose of this advice is not to duplicate or override existing legal requirements for protected bat species or their roosts. These aspects are governed by the Natural England licensing procedures for protected species. However, to maintain the integrity of the SSSI and ensure that the site contributes to achieving the Favourable Conservation Status of the greater horseshoe population planners and prospective developers need to be aware that the habitats and features which support the populations of greater horseshoe bats outside the designated site are a material consideration in ensuring the integrity of the designated site.

1.5 A strong evidence based is provided in North Somerset Bat SAC technical guidance upon which this document is based. This guidance is aimed at applicants, agents, consultants and planners involved in producing and assessing development proposals in the landscapes surrounding the SSSI. Within these areas there will be a strong requirement for survey information and mitigation for bats and their habitat in order to demonstrate that development proposals will not impact on the designated bat population.

1.6 The guidance explains how development activities can impact the SSSI and the steps required to avoid or mitigate any impacts. It applies to development proposals that could affect the SSSI and greater horseshoe roosts beyond the SSSI. The local planning authority will consider, on the basis of evidence available, whether application proposals are likely to impact on greater horseshoe bats. Those are the proposals to which the guidance will be applied. This will reduce the likelihood that it would be applied to minor developments which would not have an impact on the SSSI.

1.7 This guidance will be kept under review and will be expanded to incorporate other important greater horseshoe roosts including Creech Grange SSSI greater horseshoe bat spring and autumn roost in due course. It will also be upgraded to ensure a measurable minimum 10% biodiversity net gain is achieved in line with the forthcoming Environment Bill.

1.8 An important objective of the advice is to identify areas in which development proposals might impact on the designated populations at an early stage of the planning process, in order to inform sensitive siting and design, and to avoid unnecessary delays to project plans by raising potential issues at the outset.

2. Sensitive zones

2.1 To facilitate decision making and in order to provide key information for potential developers at an early stage, using the best available data a Consultation Zone affecting the Bryanston SSSI (see map 1 below) has been identified. This is based on known data.

Consultation Zone bands

2.2 The Consultation Zone illustrates the geographic area where greater horseshoe bats may be found. It is divided into three bands: A, B and C reflecting the density at which greater horseshoe bats may be found at a distance from a roost site. The basis for these distances is set out in Annex 2 and is based on the distances recorded through radio tracking studies in Somerset (Billington, 2000) and research into densities of occurrence throughout the species range. Note that the radio tracking surveys only recorded the movements of a small number of bats from each of maternity roost studied and therefore it is likely that any area within the Consultation Zone could be exploited by greater horseshoe bats. Although it is recognised that greater horseshoe bats mostly forage within 2.2km of a maternity roost, i.e. within Band A, they can also make regular use of key foraging habitat within 4km, i.e. within Band B. Furthermore, some key areas in Band C can be up to 8km away (BCT,2016). The zoning band widths are set out in Table 1 below.

Band	maternity roost (km)	other roost type (km)
A	0 to 2.2	-
B	2.21 to 4.0	0 to 0.61
C	4.01 to 8.0	0.611 to 2.44

Table 1: Band parameters for greater horseshoe bats

Juvenile Sustenance Zone

2.3 The Juvenile Sustenance Zone (JSZ) within Band A is to a distance of 1km - see Map 2.

2.4 Juvenile greater horseshoe bats are highly dependent on prey produced by cattle grazed pasture within the JSZ (Ransome, 1996). It is highly unlikely that this can be replaced within development proposals and new build development on green field sites will be avoided in the JSZ.

3. Consultation and surveys

3.1 For development proposals within the Juvenile Sustenance Zone it is essential that DC NET is consulted at an early stage of the process, as it is unlikely that new build development on green field sites could be made acceptable, due to the critical nature of the area in supporting the population of a maternity roost.

3.2 Where a proposal within bands A or B of the Consultation Zone has the potential to affect the features identified below, early discussions with DCNET (who will consult Natural England as necessary) are also essential.

- Known bat roost(s)
- Linear features: hedgerows, tree lines, watercourses, stone walls, railway cuttings
- Pasture, hay meadow, woodland, parkland, woodland edge
- Wetland habitat: ponds, marsh, reedbed, rivers, streams
- Buildings or bridges, especially if these are not used or are undisturbed and particularly if there is a large void with potential access
- Cellars, mines, ice houses, tunnels or other structures with voids which produce tunnel-like conditions
- Development which introduces new lighting
- New wind turbine proposals (in respect of displacement (Eurobats, 2014))

3.3 Early discussion refers to pre application stage prior to submission of a planning application; and, essentially, *before* any Master Plan proposals are submitted or finalised. This will ensure that adequate survey data is obtained. Please note that early discussions will also help inform likely

mitigation requirements, and ensure, for example, that proposals seek to retain and enhance key features and habitats, and that sufficient land can be allocated for such avoidance and/or mitigation measures required. This should result in appropriate bespoke mitigation measures that are designed in at an appropriately early stage. A site lighting plan with existing (pre- development) night-time lux levels must also be provided.

3.4 Failure to provide the necessary information in support of an application is likely to lead to delays in registration and determination. If insufficient information is submitted to allow the planning authority to assess any impacts upon the SSSI bat populations from the proposed development, the application is likely to be considered unacceptable.

3.5 In Band C developers should take advice from their consultant ecologist and planners from DCNET.

3.6 For proposals within the Consultation Zone (all bands), an ecological consultant should be commissioned at an early stage to identify and assess any impacts the proposals may have.

3.7 Surveys should determine the use of the site by greater horseshoe bats, whether the site is being used as a commuting route or contains hunting territories or both. Consideration must also be given to the site within the wider landscape.

3.8 Surveys should be carried out in accordance with the Survey Specification at Annex 3. Exact survey requirements will reflect the sensitivity of the site, and the nature and scale of the proposals. The ecological consultant will advise on detailed requirements following a preliminary site assessment and desk study and if necessary, following consultation with DCNET (see 3.2 above).

3.9 It is essential to note that bat surveys are seasonally constrained. For proposals which have the potential to impact on the SSSI, a full season (April to October inclusive) will be required, but this may not be necessary in certain circumstances, where this is demonstrable to DCNET. (See 6. below on minor impacts.) Winter surveys may be required, and this will need to be considered with regard to project delivery at an early stage to avoid a potential 12-month delay to allow appropriate surveys to be undertaken.

3.10 Outside the Consultation Zone, development proposals may still have impacts on bats. Where ecological assessments identify potential impacts to greater horseshoe bats, mitigation measures described in this guidance are likely to be required. All species of bat and their roosts are protected by the Wildlife and Countryside Act (1981, as amended) and the Habitats Regulations. Further advice on potential impacts to bats is contained in Natural England's Standing Advice for Development Impacts on Bats, English Nature's Bat Mitigation Guidelines (2004) and the Bat Conservation Trust Bat Survey Guidelines for Professionals.

3.11 For the local authority to be able to conclude with enough certainty that a proposed project or development will not have a significant effect on the SSSI, the proposal or project must be supported by adequate evidence and bespoke, reasoned mitigation. Where appropriate a long-term monitoring plan will be expected to assess whether the bat populations have responded favourably to the mitigation. It is important that consistent monitoring methods are used pre- and post-development, to facilitate the interpretation of monitoring data.

3.12 Mitigation; an Ecological Management Plan and, (where required) monitoring during and / or post development, will be secured through either planning conditions or a S106 agreement or both. Data from monitoring will be used by DCNET to determine how the bat populations have responded to mitigation and to increase the evidence base.

4. Mitigation within the Consultation Zone

4.1 Within the Bat Consultation Zone, where SSSI bats would be affected or potentially affected by development appropriate mitigation will be required. The aim must be to retain and enhance habitat

and features of value to greater horseshoe bats, such as those listed in paragraph 3.2 above. Where this is not possible replacement habitat may be needed. Generally, retained and new hedgerows must have a minimum 6m wide buffer (measured from the edge of the hedge), with a long sward and a 10m dark corridor. DNET will have regard to relevant considerations in determining the mitigation requirements, including survey results and replacement habitat. The developer's ecologist must carry out the calculations when requested by DC NET. Replacement habitat should always aim to be the optimal for greater horseshoe bats.

4.2 The following are examples of habitats to which the above principles will apply:

- Hunting habitat such as grazed pasture, hedgerows, woodland edges, tree lines, hay meadows.
- Connecting habitat, which is important to ensure continued functionality of commuting habitats. (Proposals must seek to retain existing linear commuting features as replacement of hedgerows is likely to require a significant period to establish).

4.3 The following are also important principles:

- Seek to maintain the quality of all semi-natural habitats and design the development around enhancing existing habitats to replace the value of that lost making sure that they remain accessible to the affected bats
- Maintain bat roosts in situ and maintain or replace night roosts and consider enhancing provision of night roosting features. Night roosts are important for resting, feeding and grooming, particularly those located at distance from the main roost.
- Secure net gain by ensuring habitats; such as those described in 4.2 above, are within sustenance zones in increased quantities and (where currently poor quality) improved condition to achieve net gain.

4.4 Loss of habitat refers not only to physical removal but also from the effects of lighting. A development proposal will be expected to demonstrate that bats will not be prevented from using features by the introduction of new lighting or a change in lighting levels. Reference to specific lux levels must be provided. Lighting refers to both external and internal light sources. Applicants will be expected to demonstrate that site design, including building orientation; and the latest techniques in lighting design have been employed in order to avoid light spill to retained bat habitats. Applicants will similarly be expected to demonstrate use of the latest techniques to avoid or reduce light spill from within buildings.

4.5 Where replacement habitat provision is necessary, the type(s) of habitat to be provided shall be agreed with DCNET and Natural England.

4.6 Where replacement habitat is required offsite the land must not be a designated Site of Special Scientific Interest; be contributing already to supporting conservation features or in countryside stewardship to enhance for bats.

4.7 Replacement habitat must be optimal for greater horseshoe bats (See Annexes 4 and 5). The following are examples of habitats of value to horseshoe bats and which may be created or enhanced as the replacement provision. Planting will be expected to consist of native species that produce an abundance of invertebrates, particularly moth species.

- Hedgerows with trees – tall, bushy hedgerows at least 3m wide and 3m tall managed so that there are perching opportunities
- Wildflower meadow - managed for moths e.g. long swards (Jones et al, 2015)
- Grazed pasture (essential for juveniles) – difficult to impossible to recreate on site and only feasible with management agreements with local landowners over and above existing regimes. Even so there may be issues which prevent grazing in the future.
- Ponds - for drinking
- Woodland / copses
- Provision of night roosting opportunities on site

4.8 It is important that provision of the replacement habitat is carried out to timescales to be agreed by the DCNET and Natural England.

4.9 Any replacement habitat must be accessible to the SSSI greater horseshoe bat population.

4.10 A Landscape & Ecological Management Plan (LEMP) for the site must be provided setting out how the site will be managed for greater horseshoe bats for the duration of the development. Where appropriate a Monitoring Strategy must also be included in order to ensure continued use of the site by SSSI bats and includes measures to rectify the situation if negative results occur.

5. Lighting

5.1 Horseshoe bats are known to be a very light sensitive species and are linked to linear habitat features. In addition, many night flying species of insect such as moths, a key prey species for horseshoe bats, are attracted to light, especially those lamps that emit an ultra-violet component and particularly if it is a single light source in a dark area. It is also considered that insects are attracted to illuminated areas from further afield resulting in adjacent habitats supporting reduced numbers of insects. This is likely to further impact on the ability of the horseshoe bats to be able to feed (BCT/Institute of Lighting Engineers, 2008).

5.2 A variety of techniques will be supported to facilitate development that will avoid, minimise and/or compensate for light spill:

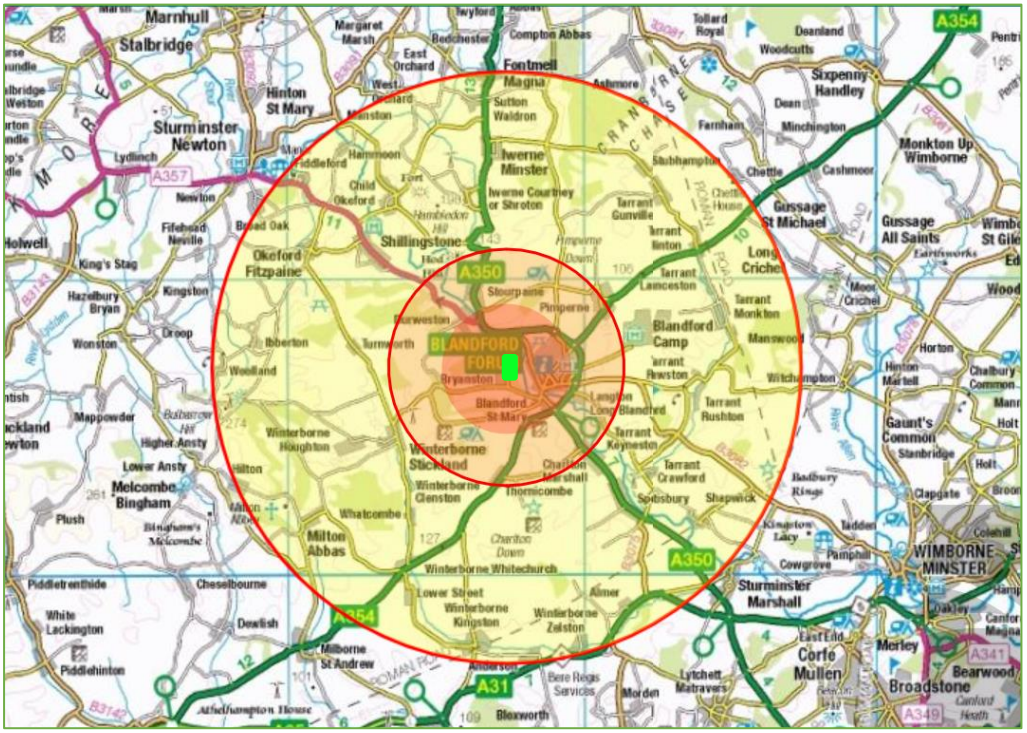
- use of soft white LED lights with directional baffles as required (LED light lacks a UV element and minimises insect migration from areas accessed by bats)
- use of building structure, design, location and orientation to avoid/minimise lighting impacts on retained habitats
- use of landscaping and planting to protect and/or create dark corridors on site
- use of SMART glass where appropriate
- use of internal lighting design solutions to minimise light spill from places such as windows
- use of SMART lighting solutions

5.3 Prospective developers will be expected to provide evidence, in the form of a lux contour plan and sensitive lighting strategy, with their application to demonstrate that introduced light levels will not affect existing and proposed features used by SSSI bats to above 0.5 lux; or not exceeding baseline light levels where this is not feasible.

6. Proposed developments with minor impacts

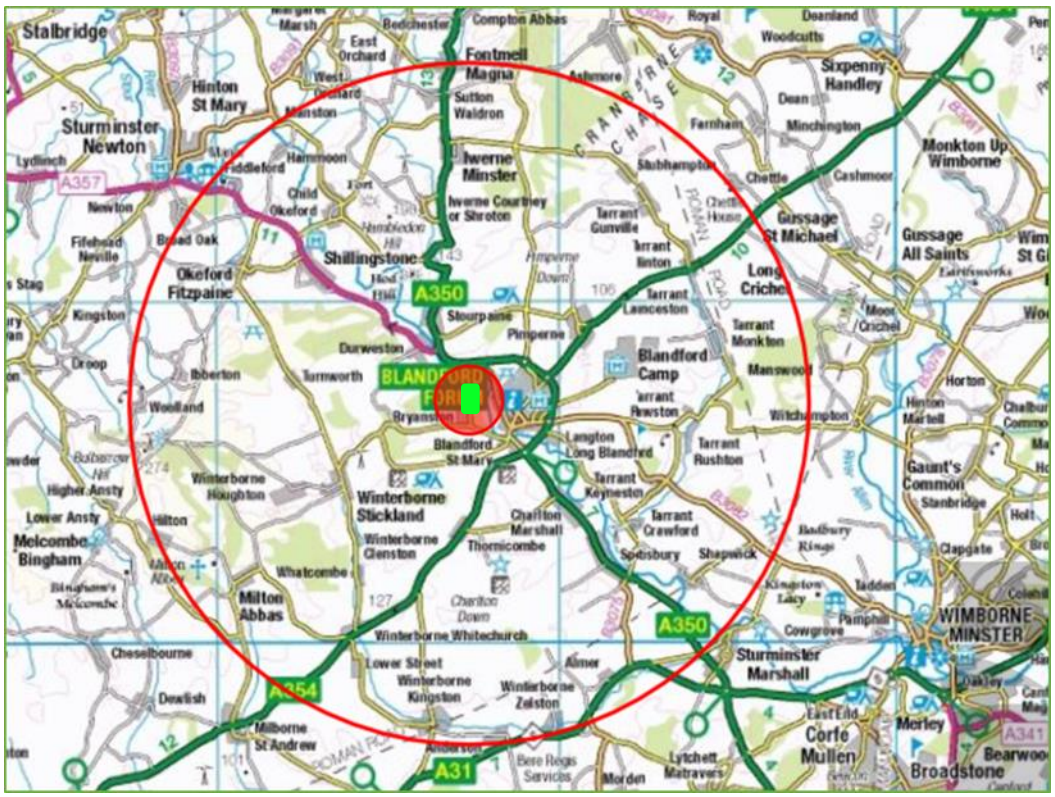
6.1 In circumstances of overall less potential impact, especially in Band C, mitigation may be put forward without the need for a full season's survey (see Annex 3). This approach will only be suitable where it can be clearly demonstrated that the impacts of a proposed development are proven to be minor and can be fully mitigated without an impact upon the existing (and likely) SSSI bat habitat. In order to adopt this approach, it will be necessary for a suitably qualified ecologist to visit the site and prepare a report with an assessment of existing (and likely) SSSI bat habitat. The information from this report must provide the basis to determine appropriate mitigation measures associated with the proposed development. The proposed mitigation must clearly demonstrate that there will be no interruption of suitable SSSI bat commuting habitat. Replacement of foraging habitat may be required as appropriate.

6.2 There may also be situations where mitigation will not be required because the proposed development does not have an impact upon existing (and likely) SSSI bat habitat. In adopting this approach, it will be necessary to substantiate this with a suitably robust statement as part of the submission of the development proposals. In terms of impacts on SSSI bats and habitat, it is important to bear in mind that minor proposed developments do not necessarily equate with small developments.



Map 1 Bryanston SSSI GHS Consultation Zone

Key	
	SSSI
	Band A
	Band B
	Band C



Map 2 Juvenile Sustenance Zone

Key	
	SSSI
	JSZ

Annexes

Annex 1: Details on the Bryanston SSSI greater horseshoe roosts

A1.1 Twenty seven SSSIs are notified to protect the greater horseshoe bat - one of Britain's rarest animals, with a population of approximately 5,000. Conservation work at these sites focuses not only on the structures in which the bats roost and hibernate, but also on the habitat in which they forage. At Bryanston SSSI, greater horseshoe bats roost in the remaining section of a disused country house. The greater part of the SSSI is owned and managed by The Vincent Wildlife Trust.
National Grid Reference: ST 874070 **Area:** 0.3 (ha)
Date Notified (Under 1949 Act): 1977
Date Notified (Under 1981 Act): 1986
Description and Reasons for Notification:
The large roof space in the derelict 18th century kitchens at Bryanston is the only known breeding site for the greater horseshoe bat in Dorset and the colony is one of only seven remaining in Britain. In addition to the building being used for breeding in summer, juveniles use the old chimneys and a tunnel during the autumn and winter. The estimated national population of this species is confined to south-west England and west Wales. The Bryanston site is of particular interest because it has been the subject of detailed study over a number of decades. The data from this research forms the basis of much of our understanding of the reproductive behaviour and ecology of this species in Britain. The very rare Bechstein's (*Myotis bechsteini)* bat has also been recorded here.

A1.2 Greater horseshoe bats are long lived (over 30 years in some cases) with the bats remaining faithful to these important roosting sites, returning year after year for generations.

A1.3 In terms of physical area, the SSSI designation applies to a small element of the habitat required by the bat population (the maternity roost and entrances to their hibernation roost). It is clear that the wider countryside supports the bat populations because of the following combination of key elements of bat habitat:

- the area has to be large enough to provide a range of food sources capable of supporting the whole bat population; the bats feed at a number of locations through the night and will select different feeding areas through the year linked to the seasonal availability of their insect prey;

- the SSSI greater horseshoe bats regularly travel through the Dorset between feeding sites and their roosts via a network of established flyways.

- at certain times of the year, for example, in the spring and autumn between hibernacula and maternity sites, and in the autumn to mating sites occupied by single males. Bats need a range of habitats during the year in response to the annual cycle of mating, hibernating, giving birth and raising young;

A1.4 It follows that SSSI bats need to be able to move through the landscape between their roosts and their foraging areas in order to maintain 'Favourable Conservation Status'. They require linear features in the landscape to provide landscape permeability.

A1.5 Compared to most other bat species, the echolocation call of the greater horseshoe bat attenuates rapidly in air due to its relatively high frequency. This means it cannot 'see' a great distance and is one reason why it tends to use landscape features to navigate, such as lines of vegetation (e.g. hedgerows, woodland edge, vegetated watercourses, etc.). The greater horseshoe bat will tend to commute close to the ground up to a height of 2m, and mostly beneath vegetation cover. Radio tracking studies (Natural England) and observations in the field confirm that greater horseshoe bats will regularly use the interconnected flyways associated with lines of vegetation. Further studies (Walsh & Harris, 1996) have shown that landscapes with broadleaved woodland, large bushy hedgerows and watercourses are important as they provide habitat continuity. Habitat is

therefore very important to SSSI bats in terms of quality (generation of insect prey) and structure (allowing them to commute and forage).

A1.6 Greater horseshoe bats are sensitive to light and will avoid lit areas (Stone, 2013). The interruption of a flyway by light disturbance, as with physical removal/ obstruction, would force the bat to find an alternative route which is likely to incur an additional energetic burden and will therefore be a threat to the viability of the bat colony. In some circumstances, an alternative route is not available and can lead to isolation and fragmentation of the bat population from key foraging areas and/or roosts. The exterior of roost exits must be shielded from any artificial lighting and suitable cover should be present to provide darkened flyways to assist safe departure into the wider landscape (English Nature).

A1.7 The feeding and foraging requirements of the Greater Horseshoe bat have been reasonably well studied in the south west of England and Europe (Ransome & Hutson 2000). From this work we know that most feeding activity is concentrated in an area within 4km of the roost (juvenile bats will forage within 3km at a stage in their life when they are most susceptible to mortality). The most important types of habitat for feeding have been shown to be permanent pasture grazed by cattle or sheep, hay meadows, and wetland features such as streamlines and wet woodland.

Annex 2: Consultation Zone Bands

A2.1 The Consultation Zone Band widths are based upon characteristic use of greater horseshoe bats home range. As this species uses a single focus for a population, a roost, they are likely to occur at a decreasing density in the landscape the further removed from the centre (Rainho & Palmeirim (2011) and Rosenberg & McKelvey (1999)).

A2.2 Studies in Somerset reported that greater horseshoe bats spent most of time roaming along hedgerows whilst foraging, moving onto different hedgerows after visiting several in their 'patch'. Individuals use foraging areas that could be over 200 or more metres in length or over 6 to 7 hectares. Within these foraging areas each bat has localised feeding spots of about 0.35 hectares. In Germany they visit 11 – 25 such areas per night.

A2.3 A similar study of frequency of home range use away from a maternity roost site was carried out by Bontadina & Naef-Daenzer (2002) in Switzerland. It showed a higher frequency of use than would be expected at 1.2 to 1.6km distance when compared with uniform spatial use over the whole foraging range up to 4km. Above 4km the trend in spatial use declined up to the maximum range of 7.4km. In a radio tracking study carried out by Rossiter et al (2002) at Woodchester Manor, overlaps in core foraging areas were nearly all within 1km of the roost with only two overlaps recorded at ~2km and then both corresponded to a mother / daughter pair.

A2.4 The band in the Table 1 (p.6) for a maternity roost of greater horseshoe bats is derived from radio tracking distances carried out by Billington (2001) in North Somerset. Although the Swiss study (Bontadina & Naef-Daenzer 2002) found greatest spatial density at 1.2 to 1.6km it is considered that 2.2km is used to determine the width of Band A in this case derived from out radio tracking studies Duvergé (1996) in North Somerset where the summer foraging areas of adults were found to be located within 3 – 4 km of maternity roosts, and the mean adult range in one extensive study was 2.2km. A number of radio tracking studies have shown the maximum foraging range for most Greater Horseshoe bats is 4km and this distance is quoted in the requirements of habitat conservation from a roost site. Billington (2001) tracked the maximum distance travelled as 6.8km, discounting one bat which travelled 10.2km. However, measuring the distances in GIS the furthest recorded bat fix was 7.8km ('*as the crow flies*').The band widths for non-breeding and winter roosts are derived from a radio tracking study of non-breeding roosts of greater horseshoe bats in Dorset carried out by Flanders (2008).

Annex 3: Specifications for surveys for planning applications affecting SSSI Consultation Zone bands.

A3.1 Three types of survey are required to inform the impact of proposed development. These are:

Bat Surveys
Habitats / Land use Surveys
Light Surveys
Bat Surveys

A3.2 The following sets out the survey requirements for development sites within the bands A and B as per on the North Somerset Bat SAC guidance which is based in part on the Bat Conservation Trust (2016) survey guidelines and in part on the advice of consultants experienced in surveying for horseshoe bats. Note that the objective is to detect commuting routes and foraging areas rather than roosts.

A3.3 The following specification is recommended in relation to development proposals within bands A and B of the Consultation Zone. It is also worth mentioning the difficulty associated with detecting the greater horseshoe bat's echolocation call compared to most other British bat species due to the directionality and rapid attenuation of their call. This fact emphasises the requirement for greater surveying effort and the value of broadband surveying techniques. It is recommended that the most sensitive equipment available is used. It is also recommended that DCNET is contacted with regard to survey effort.
(i) Surveys must pay particular attention to linear landscape features such as watercourses, transport corridors (e.g. roads, sunken lanes railways), walls, and to features that form a linear feature such as hedgerows, coppice, woodland fringe, tree lines, ditches and riparian corridors and areas of scrub and pasture that may provide flight lines.

(ii) **The main survey effort should be that using automated detectors**. Automatic bat detector systems need to be deployed at an appropriate location (i.e. on a likely flyway). Enough detectors should be deployed so that each location is monitored through the survey period in order that temporal comparisons can be made. The period of deployment should be at least 50 days from April to October and would include at least one working week in each of the months of April, May, August, September and October (50 nights out of 214; ≈25%). For development within Band B of the Consultation Zone winter surveys may be required.

(iii) The number of automated detectors will vary in response to the number of linear landscape elements and foraging habitat types, the habitat structure, habitat quality, used by horseshoe bats and taking into account their flight-altitude. Every site is different, but the objective would be to sample each habitat component equally. Generally:

- with hedges it depends on the height and width, and also whether they have trees, as to how many detectors might be needed to ensure the coverage is comprehensive no matter what the wind decides to do.
- with grassland, the number depends on whether the site is grazed or not; if it is a comparison of the fields with livestock and the fields without will be required.
- in a woodland situation a sample with three detectors: one on the woodland edge, two in the interior with one in the canopy and one at eye-level.

(iv) Results from automated detectors recording must be analysed to determine whether the site supports foraging or increased levels activity as this is likely to affect the amount of replacement habitat required to mitigate losses to horseshoe bats.

(v) Manual transect surveys should be carried out on ten separate evenings; at least one survey should be undertaken in each month from April to October, factoring in seasonal variations that may occur in some years such as a cold winter which shortens the survey period or a warm autumn which

may extend it, as the bats' movements vary through the year. Transects should cover all habitats likely to be affected by the proposed development, including a proportion away from commuting features in fields. Moreover, manual surveys only give a snapshot of activity (10 nights out of 214; ≈5%) and less effective at detecting horseshoe bats therefore automated bat detector systems should also be deployed see section (ii) above.

(vi) Surveys should be carried out on warm (>10 °C but >15°C in late summer), still evenings that provide optimal conditions for foraging (insect activity is significantly reduced at low temperatures; see below). Details of temperature and weather conditions during must should be included in the final report.

(vii) Surveys should cover the period of peak activity for bats from sunset for at least the next 3 hrs.

(viii) Transect surveys should be conducted with the most sensitive equipment available. Digital echolocation records of the survey should be made available with the final report; along with details of the type and serial number of the detector.

(ix) Surveys should be carried out by suitably qualified and experienced ecologists. Numbers of personnel involved must be sufficient to thoroughly and comprehensively survey the size of site in question and should be agreed beforehand with DCNET. Details must be included in the report.

(x) Surveys must also include desktop exercises and include the collating any records and past data relating to the site via Dorset Environmental Records Centre (DERC); Dorset Bat Group etc.

(xi) **All bat activity must be clearly marked on maps and included within the report.**

(xii) For applications processed under the Dorset Biodiversity Appraisal Protocol data will be extracted by DERC. For all other applications, basic details of records for the site should be passed to DERC by the consultant.

A3.4 Survey effort in Band C is dependent on whether commuting structure is present and the suitability of the adjacent habitat to support prey species hunted by greater horseshoe bats. Nonetheless this should be in accordance with current best practice guidelines; currently Bat Conservation Trust guidelines (Collins, 2016).

Habitats Surveys

A3.5 Phase 1 habitat surveys must be carried out for all land use developments within the Consultation Zone and be extended to include the management and use of each field, e.g. whether the field is grazed or used as grass ley, and the height, width and management of hedgerows in the period of bat activity. Information can be sought from the landowner. If grazed, the type of stock and management regimes must be detailed. Habitat mapping must include approximate hectarage of habitats to inform the replacement habitat required.

Lighting Surveys

A3.6 Within bands A and B, surveys of existing light levels on proposed development sites must be undertaken and submitted with the planning application. This should cover the full moon and dark of the moon periods so that an assessment of comparative greater horseshoe bat activity on a proposed site can be ascertained. Light levels should be measured at 1m above ground level. This survey data should then be used to inform the masterplan of a project.

A3.7 A lux contour plan of light levels down to 0.5 Lux, modelled at 1m above ground level, should be submitted with the application.

Annex 4: Habitat requirements of greater horseshoe bats

Prey

A4.1 Dietary analysis of greater horseshoe bat droppings shows three main prey items: cockchafer (*Melolontha melolontha*); dung beetles *Aphodius* spp. (*Coleoptera: Scarabaeidae*); and moths (*Lepidoptera*). Of these moths form the largest part of the diet but the other two are important at certain times of year Ransome (1996). They are conservative in their food sources. Three secondary prey sources are also exploited: crane flies (*Diptera: Tipulidae*), ichneumonids (*Hymenoptera: Ichneumonidae*) of the Ophian luteus complex, and caddis flies (*Trichoptera*).

General

A4.2 Greater horseshoe bat populations are sustained by a foraging habitat which consists primarily of permanently grazed pastures interspersed with blocks or strips of deciduous woodland, or substantial hedgerows. Such pasture/woodland habitats can generate large levels of their favoured prey, especially moths and dung beetles, but also Tipulids and ichneumonids. Preferably pastures should be cattle-grazed, as their dung sustains the lifecycles of the most important beetles to greater horseshoe bats, but sheep and horse grazing can also be beneficial in a rotation to reduce parasite problems. Sheep-grazing, which results in a short sward, may also benefit the lifecycles of Tipulids and cockchafers.

A4.3 The periods through the year when these prey species are hunted is outlined below:

- The preferred key prey in **April** for all bats that have survived the previous winter is the large dung beetle *Geotrupes*.
- In **May**, the preferred key prey is the cockchafer.
- In **April** and **May**, in the absence of sufficient key prey, bats switch to secondary prey such as Tipulids, caddis flies and the ichneumonid Ophion. As a last resort they eat small dipterans.
- In **June** and early **July**, pregnant females feed on moths, their key prey at that time, and continue to do so after giving birth, until late August. They usually avoid *Aphodius rufipes* even when they are abundant, as long as moths are in good supply. If both are in poor supply, they switch to summer chafers (Amphimallon or Serica).

Moth supplies usually fall steadily in August and September, due to phonological population declines, or rapidly at a particular dawn or dusk due to temporary low temperatures. If either happens adult bats switch to secondary, single prey items, or combine moths with them. Tipulids are often the first alternative, but *Aphodius rufipes* is also taken. In very cold spells ichneumonids, of the Ophion luteus complex are consumed. They are common prey in October and through the winter as they can fly at low ambient temperatures. However, in summer they are used as a last resort.
Juvenile bats do not feed at all until they are about 29 or 30 days old, when they normally feed on *Aphodius rufipes*, which is their key prey. This dung beetle species is a fairly small (90mg), easily caught and usually abundant prey, which reaches peak numbers at the time that the young normally start to feed in early August (Ransome & Priddis, 2005)

A4.4 The top five feeding habitats for greater horseshoe bats over the active period in North Somerset included:

- pasture with cattle as single stock or part of mixed stock (38.6%);
- ancient semi natural woodland (16.6%);
- pastures with stock other than cattle (10.3%);
- meadows grazed by cattle in the autumn (9.4%); and
- other meadows and broadleaved woodland (4.9%) (Duvergė (1994))

A4.5 These habitats are not used according to the fore listed proportions throughout the year but change with the seasons. Woodlands and pasture adjoining wood are used in spring and early summer. As summer progresses, feeding switches to areas further away and tends to be fields used for grazing cattle and other types of stock. Meadows that have been cut and where animals are

grazing are also used. A balance of woodland and pasture of about 50% and 50% provides optimum resources for greater horseshoe bats (Ramsone (1996)). Billington (2000) identified that there were four principal habitat types: scrub, meadow, deciduous woodland and grazed pasture.
A4.6 Within suitable habitat, a range of three roosts types must be present for a colony to exist. A single maternity roost, with many surrounding night roosts nearby (usually up to 4km, but exceptionally up to 14km) for resting between foraging bouts and a range of suitable hibernacula within a 60km radius. Three types of hibernaculum have been identified which should be as close as possible, but within 15km of the maternity roost (Ransome & Hutson, 2000).

Grassland

A4.7 The most important factor for supporting greater horseshoe bat populations is grazed pasture (Ransome, 1997). Cattle are preferred to smaller grazers, since they create the ideal structural conditions for perch-hunting bats in hedgerows and woodland edge. Within 1km of the roost the presence of permanent grazed pasture is critical for juvenile bats.

A4.8 Aphodius beetles live in cow, sheep and horse dung. Short grazed habitat, such as produced by sheep, benefits Melontha and Tupilid species which require short grass to oviposit. Sheep dung also provides dung-based prey. Large dung beetles, *Geotrupes* spp., can provide a major dietary component of greater horseshoe bats. Most favour cattle dung, but some also use sheep dung.

A4.9 Longer swards benefit the larvae of noctuid moths (Ransome, 1996 & 1997). The main species of moth eaten by greater horseshoe bats in one study (Jones et al, 2015) were noted as Large Yellow Underwing; Small Yellow Underwing; Heart and Dart and Dark Arches.

- Large Yellow Underwing are found in a range of habitats, including agricultural land, gardens, waste ground, and has a range of food plants including dandelion, dock, grasses and a range of herbaceous plants both wild and cultivated, including dog violet and primrose. It will also visit flowers such as Buddleia, ragwort, and red valerian. The larva is one of the 'cutworms' causing fatal damage at the base of virtually any herbaceous plant, including hawkweeds, grasses, plantains and dandelions and a range of cultivated vegetables and flowers. This moth flies at night from July to September and is freely attracted to light.
- Small Yellow Underwing are found on flower-rich grassland, including meadows, roadside verges, open woodland and grassy embankments. The food plants are as for those listed for the Large Yellow Underwing but also include foxglove, sallow, hawthorn, blackthorn and silver birch. The larvae feed on the flowers and seeds of mouse-ear (*Cerastium* spp.), especially common mouse-ear. This moth flies in May and June in the daytime so may be gleaned at night.
- Heart and Dart are found in agricultural land, meadows, waste land, gardens and places where their food plants grow. Food plants include dock, plantain, chickweed, fat hen, turnip, sugar beet and many other herbaceous plants. The larvae feed on various wild and garden plants. The moth flies from May to July, when it is readily attracted to light.
- Dark Arches are found in meadows and other grassy place and food plants include cocksfoot, couch grass and other grasses. The larvae feed on the bases and stems of various grasses. The moth is on the wing from July to August and is readily attracted to light (Ransome, 1996).

Woodland

A4.10 Rides and footpaths are used by greater horseshoe bats when flying in woodland feeding areas. Grassy rides and glades in woodland increase the range of food and provide opportunity for perch hunting.

A4.11 Woodland supports high levels of moth abundances. Macro (and micro) moths are densest where there is grass or litter, less so where there are ferns, moss, bare ground or herbs. They are richer where there is native tree diversity and trees with larger basal areas. Species such as oak, willow and birch have large numbers of moths, whereas beech has small numbers even when compared to non-native species such as sycamore. Uniform stands of trees are poorer in invertebrates than more diversely structured woodland (Fuentes-Montemayor et al, 2012).

A4.12 Greater horseshoe bats feedthrough the winter when prey species become active, for example when Ophian wasps swarm in woodlands above 5˚C. They have been found to spend significant times in woodland, being sheltered, often warmer at night, and insects are much more abundant than in open fields. However, in another study Billington (2000) carried out in the summertime found that there was limited foraging of adults recorded in woodlands, of only a few minutes duration, except during medium-heavy rainfall when most of the foraging time was spent in broadleaf and coniferous woodland. Use, therefore, is likely to be dependent on season and weather conditions (Kirby (1988)).

Hedgerow

A4.13 Larger hedgerows are required for commuting as well as foraging by greater horseshoe bats. Continuous lines of vegetation of sufficient height and thickness to provide darkness when light levels are still relatively high are needed for commuting bats. Ransome (1997) recommended the retention of existing hedgerows and tree lines linking areas of woodland, encouraging hedgerow improvement to become 3 to 6m wide, mean 3m high with frequent standard emergent trees.

A4.14 Substantial broad hedgerows with frequent emergent trees can provide suitable structure for foraging conditions for greater horseshoe bats if woodland is scarce. A tall thick hedgerow is a very efficient way of producing a maximum level of insect prey using a minimum land area and important creators of physical conditions that enhance insect concentrations and reduce wind speeds for economical hunting flight. The vast majority of insects (over 90%) found near hedge lines do not originate in the hedge but come from other habitats brought in on the wind.

Scrub

A4.15 Scrub also seems to be an important foraging habitat for greater horseshoe bats. Billington (2000) records the frequent use by the species during radio tracking carried out in Somerset in June. However, large areas of continuous scrub are likely to be avoided by Greater Horseshoe bats.

A4.16 Large Yellow Underwing moths are attracted to Buddleia (Butterfly Bush). Buddleia flowers from July to September, when demands on lactating female horseshoe bats are high.

Others

A4.18 In Somerset studies, ditches and rhynes were used as flight corridors to access foraging areas, flying below ground level. Radio tracking also noted greater horseshoe bats flying straight across the open water of Cheddar Reservoir (Jones & Billington, 1999 and Billington, 2013).

A4.19 Tipulid larval development is favoured by damp conditions. Therefore, any aquatic environments can provide a secondary prey source. Aquatic environments could also favour the production of caddis flies in certain months, such as May and late August / September when other food supplies may be erratic.

A4.20 Habitats which are of little use to greater horseshoe bats include urban areas, arable land and amenity areas such as playing fields. Lights, such as streetlights or security lamps, are strong deterrents; both when bats emerge from roosts, and when they forage. However, radio tracking shows that bats regularly pass through urban areas and will fly along hedgerows adjoining arable areas to reach hunting grounds. It is suspected that they will fly through (but not along) a line of streetlights, probably at the darker points between lamps, as evidenced by radio tracking. In North Somerset they have been recorded within urban areas but where lights are switched off after midnight.

A4.22 During the winter period Greater Horseshoe bats are likely to forage closer to roost sites than during the summer and in areas sheltered from the wind, and on south and southwest facing slopes (Ransome, 2002).

Annex 5: Habitat creation prescriptions

A5.1 The following are standard prescriptions that can be used as replacement habitat both on development sites and at off-site locations.

Pasture

A5.2 Ideally grazed pasture should be created or existing enhanced for greater horseshoe bats. It is unlikely that a grazing regime could continue within a development site and the following is more likely to constitute off site enhancements. Ransome (1996) set out prescriptions for grazing regimes:

- Enhancement within 3km of the roost preferably revert arable to grassland managed to be improved by non-hazardous methods to provide high levels of grass productivity to cope with high densities of livestock between July and September. Where currently grazed the existing regime should be adjusted so that between March and May these pastures should be stocked with cattle, sheep and possibly a few horses at 1.4 cattle/ha or 8 sheep/ha as the weather permits and rotated between cattle and sheep in specific fields to keep a short, but not seriously damaged sward. The fields should be rested in June to allow grass growth to recover, which is likely to be necessary, Silage cutting should not be permitted. From the first of July until mid-September grazing should be at least at 2-3 cattle/ha or cattle mixed with 11-16 plus sheep/ha (maximum level depending on quality and quantity of grass). If weather permits, continue grazing at lower levels into early October. From July onwards primarily mature cattle, in either beef or milking herds, should be used. NB stocking levels may need to be adjusted in the light of climatic conditions influencing the growth of grass in a particular summer.
- Grazing has been shown to have a detrimental effect on moth abundance. Outside the 3 kilometres zone in the wider roost sustenance zone cattle may be grazed at 1/ha and sheep at 5/ha. At these lower grazing rates longer swards are likely to be maintained to the benefit of Noctuid moths.
- Ivermectin is a broad spectrum antiparasitic drug approved for the use in cattle, sheep and horses. The drug is absorbed systemically after administration and is excreted mainly in the faeces. Being insecticidal, residues of ivermectin in cow dung can reduce the number of dung beetles, appearing to inhibit larval development and/or prevent pupation from taking place and thus could reduce prey availability to greater horseshoe bats (JNCC). In one study higher numbers of Aphodius sp. were found in dung in long swards from cattle treated with ivermectin (Foster et al, 2014). However, it appears that smaller numbers emerge from the dung, compared with the dung of untreated cattle, as the number of eggs per female *A. rufipes* can be significantly reduced but the magnitude of the decline is not large (O'Hea, 2010).
- It must be emphasised there are inherent issues in using third parties to create new pasture as replacement habitat in perpetuity in terms of reasonableness and enforceability.

Grassland

A5.3 The creation of species rich grassland is likely to be more feasible in response to providing replacement habitat to mitigate the impacts of a development. This will need to be managed to produce a long sward to support an abundance of Noctuid moths, one of the main prey items hunted by greater horseshoe bats. Specified seed mixes should include food plants, as well as grasses, such as dandelion, dock, hawkweeds, plantains, ragwort, chickweed, fat hen, mouse-ear and red valerian and other herbaceous plants. Buddleia and bramble in particular, and other scrub species may be planted within or on the edges of the grassland. The grassland should be divided into parcels and cut in rotation once a year in October and the cuttings removed. Where grassland is established as a field margin this should be at least 6m wide.

Woodland

A5.4 Again off-site the replacement of coniferous woodland with broad-leaved woodland would benefit greater horseshoe bats. This should be carried out gradually over a period of time to avoid extensive clear-felling. Macro moth abundance is higher at the edge of woodland than in the interior. All woodlands should be permeated by grassy rides and contain grassy glades. They should be managed without insecticide treatments. Glades probably need to be 10 - 15m across before they will be used by the bats for feeding. Macro moth abundance and species richness were positively affected by tree species richness and by the relative abundance of native trees in a woodland patch. Of dominant ground types, 'grass' and 'litter' had higher abundances and species richness than bare ground, herbs, moss or ferns. Woodland size is positively related to macro moth abundance. Woodlands over 5ha have the highest values of moth diversity and abundance. However, relatively small patches (e.g. woodlands between 1 and 5ha) appear to contain relatively large moth populations.

Hedgerow

A5.5 Hedgerows act as commuting structures and, provided they are managed correctly, offer feeding perches for greater horseshoe bats. Over 90% of prey caught by bats is brought in on the wind from adjacent habitats. New hedge lines could be planted off-site to divide up large grazed fields into smaller units and link them to blocks of woodland. Hedgerows should be 3 to 6m wide and 3m high with standard trees planted frequently along its length. The provision of trees increases moth abundance. Cutting should be restricted to the minimum needed to ensure visibility or retain hedgerow structure. Hedgerows are best cut every 2-3 years, working on only one part or side at any time.

A5.6 A species-rich grass buffer strip, a minimum of 6m wide, with a long sward, managed as described above, must accompany hedgerow creation as this will enhance moth abundance (Merck & Macdonald, 2015).

Annex 6: The Conservation of Habitats and Species Regulations 2017 (EU Exit)

A6.1 Under Regulation 41 it is an offence to deliberately disturb wild animals of a European Protected Species (EPS), such as greater horseshoe bats, in such a way as to be likely to:

a) impair their ability—

(i) to survive, to breed or reproduce, or to rear or nurture their young; or

(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

(b) affect significantly the local distribution or abundance of the species to which they belong.

A6.2 Regulation 9(5) requires that all public bodies have regard to the requirements of the Habitats Directive when carrying out their functions. Recent court cases (Regina versus Cheshire East Borough Council and Morge V Hampshire County Council) and a Supreme Court judgement have *'… confirmed that the judgement is one for the relevant decision maker to make (e.g. the local planning authority) based on all the facts of the case*.'(Simpson, 2011). It is the local planning authority's responsibility to ensure that the Favourable Conservation Status (FCS) of local populations of an EPS is maintained, aside from any subsequent licensing requirement. Before granting planning permission to a development the local authority needs to ensure that the proposed development is not detrimental to the affected population of greater horseshoe bats' FCS, i.e. that there are no adverse effects on the habitat to support and hence abundance of the local population from the proposed development. The Council must be satisfied that each of the three tests for EPS is met which besides FCS includes statements concerning whether 'the development is of overriding public interest' and whether 'there are no satisfactory alternatives. These should be reported in the officer's report to the planning committee.

However, this should not be seen as a requirement of every development where EPS are present but, as the Supreme Court makes clear, should be judged on a case by case, species by species basis. Penny Simpson (2011) writes that '*deliberate disturbance' offence is likely to apply to an activity which is likely to negatively impact on the demography (survival and breeding) of the species at the local population level… disturbing one of two individuals is not necessarily below the threshold (i.e. outside the offence) because for a rare species, a species in decline, or a species at the edge of its range, a harmful disturbing impact on a very small number of individuals may impact negatively on the demography of the local population'*.

Ideally the forward planning process, such as consideration of development sites for allocation, should be informed by a sound knowledge of the distribution of EPS within a geographic area. Awareness of the maps in this guidance would help towards that, regarding horseshoe bats. This would help local authorities to exercise their functions in line with the Conservation of Habitats and Species (Amendment) Regulations 2017, Regulations 9 (1) and 9(3). It would also help the local authorities meet Article 16 of the Habitats Directive, since consideration of the maps in the allocation process could potentially help to avoid adverse impacts on horseshoe bats in the first place, although it is recognised that this is not always possible due to other factors such as the need for transport infrastructure.

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