European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

Chilmark Quarries Special Area of Conservation (SAC)
Site Code: UK0016373

Greater horseshoe bats © Natural England

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About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Chilmark Quarries SAC.

This advice should therefore be read together with the SAC Conservation Objectives available here

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England when developing, proposing or assessing an activity, plan or project that may affect this site.

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	Chilmark Quarries Special Area of Conservation (SAC)
Location	Wiltshire
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	1 April 2005
Qualifying Features	See section below
Designation Area	10.41 ha
Designation Changes	Not applicable
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	Chilmark Quarries SSSI Fonthill Grottoes SSSI
Relationship with other European or International Site designations	None

Site background and geography

Chilmark Quarries SAC comprises two separate SSSIs situated in the Chilmark vale to the west of Salisbury: Chilmark Quarries and, 2½ miles further west, Fonthill Grottoes. They form a complex of abandoned mines and subterranean follies regularly used by an important assemblage of bat species as a hibernation site. The extensive system of undisturbed mines, with their constant temperature and humidity, and the varied construction of the grottoes, provide suitable conditions for large numbers of wintering bats. The SSSIs are located in a varied landscape with a mix of woodland, pasture, parkland, river and hedgerows providing good quality foraging and commuting habitat. They straddle the boundary between the Salisbury Plain and West Wiltshire Downs National Character Area (NCA 132) and the Blackmore Vale and Vale of Wardour NCA (NCA 133).

Chilmark Quarries SSSI consists of a series of old stone quarry workings with twelve separate underground mines and shafts. It is known to be one of the most important bat hibernation sites in Britain; not only have more species of bat been found hibernating here than in any other British site, but also the greatest number of individual bats hibernating on a single occasion. As well as their main significance for hibernating bats, some of the quarries are used as mating roosts in summer/autumn, particularly by greater horseshoe bats, and buildings in and around the site are used as nursery, summer or hibernation roosts.

Fonthill Grottoes SSSI is a set of three subterranean follies dating from the eighteenth century, sited in mixed broad-leaved and ornamental woodland around an ornamental lake. The Dark Walks is a set of tunnels constructed of large stone blocks with earth heaped over them. Gaps between the irregular blocks provide hibernation sites for crevice-using bats including Bechstein's and barbastelle. Ventilation shafts ensure a range of temperature within the site. The Hermitage is the smallest folly, consisting of a

single cave with rock walls. The Quarry comprises tunnels cut back into the rock from a disused quarry. This is the largest of the follies and supports the majority of the horseshoe bats using the grottoes.

Although the designated areas associated with this SAC are relatively small and comprise the areas immediately surrounding the mines/quarries/grottoes, favourable condition is measured against the survival of the population. Therefore a much wider area including supporting habitat which provides food, access and mixing of the population, is critical to achieving favourable condition of the SAC.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying habitats:

None

Qualifying Species:

- **S1303 *Rhinolophus hipposideros*: Lesser horseshoe bat**

The lesser horseshoe bat, one of the smallest bats in the UK, is found in Wales, south-west England and the West Midlands. During the summer lesser horseshoe bats form maternity colonies in old buildings and emerge to hunt in nearby woodland. In winter they hibernate in caves, mines and other cave-like places. The UK has one of the largest populations of this species in western Europe.

- **S1304 *Rhinolophus ferrumequinum*: Greater horseshoe bat**

The greater horseshoe bat is one of the largest and rarest bats in the UK and is found only in south-west England and south and west Wales. The total UK population comprises about 4,000 individuals. During the summer, greater horseshoe bats form maternity colonies, generally in large old buildings. In winter they depend on caves, abandoned mines and other underground sites for undisturbed hibernation.

- **S1308 *Barbastella barbastellus*: Barbastelle bat**

A very rare bat in the UK that is easily identified by its black fur and square-shaped ears. Several winter hibernation sites are known in caves, mines and other cave-like places, and a small number of summer breeding sites have been found. Individual bats are sometimes discovered in buildings during the summer. Autumn transitional sites are used for social gatherings.

- **S1323 *Myotis bechsteinii*: Bechstein`s bat**

An inhabitant of old mature forests, Bechstein's bat is one of the UK's rarest animals, with only a few sightings every year. The bat is found hibernating in a small number of caves, mines or other cave-like places in southern England. A small number of summer breeding sites are known. Autumn transitional sites are used for social gatherings.

All UK bat species and their roosts are fully protected throughout the year under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 as 'European Protected Species'. A Licence may therefore be required for any activities likely to harm or disturb bats.

Site-specific seasonality of SAC features

The table below highlights in grey those months in which significant numbers of each mobile qualifying feature are most likely to be present at the SAC during a typical calendar year. This table is provided as a general guide only.

Unless otherwise indicated, the months shown below are primarily based on information relating to the general months of occurrence of the feature in the UK. Where site-based evidence is available and has been used to indicate below that significant numbers of the feature are typically present at this SAC outside of the general period, the site-specific references have been added to indicate this.

Applicants considering projects and plans scheduled in the periods highlighted in grey would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration of mitigation to minimise impacts to qualifying features during the principal periods of site usage by those features. The months which are *not* highlighted in grey are not ones in which the features are necessarily absent, rather that features may be present in less significant numbers in typical years. Furthermore, in any given year, features may occur in significant numbers in months in which typically they do not. Thus, applicants should not conclude that projects or plans scheduled in months not highlighted in grey cannot have a significant effect on the features. There may be a lower likelihood of significant effects in those months which nonetheless will also require prior consideration.

Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information.

Feature	Season	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lesser horseshoe bat, *Rhinolophus hipposideros*	Hibernation/ swarming												
Greater horseshoe bat, *Rhinolophus ferrumequinum*	Hibernation/ swarming												
Barbastelle bat, *Barbastella barbastellus*	Hibernation/ swarming												
Bechstein's bat, *Myotis bechsteini*	Hibernation/ swarming												

Table 1: Supplementary Advice for Qualifying Features: S1303. *Rhinolophus hipposideros*; Lesser horseshoe bat; S1304. *Rhinolophus ferrumequinum*; Greater horseshoe bat; S1308. *Barbastella barbastellus*; Barbastelle bat; S1323. *Myotis bechsteinii*; Bechstein's bat

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population abundance - hibernation site**	**<u>Lesser horseshoe bat</u>** Maintain the abundance of the hibernating lesser horseshoe population at a level which is not less than 90 individuals, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent. **<u>Greater horseshoe bat</u>** Maintain the abundance of the hibernating greater horseshoe population at a level which is not less than 15 individuals, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent. **<u>Barbastelle bat</u>** Maintain the presence of hibernating barbastelle bat at the site and avoid deterioration from its current population level as indicated by the latest mean peak count or equivalent. **<u>Bechstein's bat</u>** Maintain the presence of hibernating Bechstein's bat at the site and avoid deterioration from the current population level as indicated by the latest mean	This will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's size or presence has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period (generally at least 10 years). The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account in any assessment. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts or breeding surveys. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection.	STEBBINGS, R E, 1992. *The Greywell Tunnel: An Internationally Important Haven for Bats*. Peterborough. English Nature Monitoring data held by Natural England Surveys are carried out by licenced persons for NE. This information is sensitive and requirements for it must be discussed with NE

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		peak count or equivalent.	Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise that the figures stated are the best available. Monitoring visits can only provide an indication of abundance. Only selected areas of the extensive mine systems are surveyed, including the largest mine at Chilmark Quarries SSSI, and numbers seen on a particular visit will depend on many factors including weather conditions at the time. In addition, for underground stone mines it is estimated as few as 5-8% of crevice-using bats might be seen, while the remainder are hidden (Stebbings, 1992). **Lesser horseshoe bat** The baseline-value for the hibernating population is derived from a summation of the baseline counts from the time of SSSI notification or soon after: Chilmark Quarries notified SSSI October 1989, average count from 1990-1999 = 78 Fonthill Grottoes notified SSSI October 1994, average count from 1994-2000 = 12 Total average for the SAC = 90 Average numbers of lesser horseshoe in more recent years are higher than this: Chilmark Quarries average count 2011 - 2018 = 260 Fonthill Grottoes average count 2002 – 2011 = 17 **Greater horseshoe bat** The baseline-value for the hibernating population is derived from a summation of the baseline counts from the time of SSSI notification or soon after: Chilmark Quarries notified SSSI October 1989, average count from 1990-1999 = 12 Fonthill Grottoes notified SSSI October 1994, average count from 1994-2000 = 3 Total average for the SAC = 15	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Average numbers of greater horseshoe in more recent years are higher than this: Chilmark Quarries average count 2011-2018 = 33 Fonthill Grottos average count 2002-2011 = 3 **<u>Barbastelle bat and Bechstein's bat</u>** Numbers of hibernating barbastelle and Bechstein's bat recorded are low and they are not recorded every year. This does not necessarily mean they are not present.	
Supporting habitat: extent and distribution	**Extent of supporting habitat**	Maintain the total extent of the habitats which support the feature.	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data. The total area of the SAC is 10.41ha (component SSSIs Chilmark Quarries 9.72ha; Fonthill Grottoes 0.70ha), which comprises the surface land area encompassing all the quarry/mine/folly entrances at each site and most (but not all) of the underground extent. The total extent of the numerous individual underground or enclosed roost spaces (as mapped in documents held by Natural England) should be maintained.	STEBBINGS, R.E. & WEBBER, M. 2001. *RAF Chilmark: Survey of Underground Mines and Entrances*. Report for Wiltshire County Council. Available from Natural England on request. NATURAL ENGLAND, 2007. *Chilmark Quarries SSSI Favourable Condition Tables*. Available from Natural England on request. NATURAL ENGLAND, 2007. *Fonthill Grottoes SSSI Favourable Condition Tables*. Available from Natural England on request.
Supporting habitat: structure/ function	**External condition of underground site - hibernation**	Maintain the structural integrity of entrances. Maintain the external condition of the site, with vegetation present close to entrances, but not obstructing them. No artificial lights shining on entrances.	There should be no recent collapses/falls or new signs of geological instability at roost entrances and grilles where present should be secure. Vegetation is required close to the entrances to enable bats to feel secure enough to leave at dusk rather than delaying until fully dark. Any lights shining on the entrances are likely to deter the bats from leaving.	STEBBINGS R.E. and WEBBER, M, 2001. *RAF Chilmark: Survey and Management of Open Entrances*. Report for Wiltshire County Council CHALKHILL ENVIRONMENTAL CONSULTANTS, 2001. *Fonthill*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			The woodland surrounding the entrances is important for the maintenance of optimal humidity conditions inside the mine systems and also as foraging areas. The woodland structure should be maintained or enhanced to benefit bats.	*Grottoes SSSI: Baseline Assessment of Underground Bat Roost SSSI Entrances* (report for English Nature) NATURAL ENGLAND, 2007. *Chilmark Quarries SSSI Favourable Condition Tables* NATURAL ENGLAND, 2007. *Fonthill Grottoes SSSI Favourable Condition Tables* PALMES, P, 1996. *RAF Chilmark: Phase II Surveys, Woodland and Grassland*. Wiltshire Wildlife Trust This attribute will be periodically monitored as part of Natural England's site condition assessments.
Supporting habitat: structure/ function	**Internal condition of underground site - hibernation**	Maintain the structural integrity of the roost space and maintain suitable temperature, humidity and airflow to provide consistent conditions for hibernation.	Damp, draught and increases in light levels are likely to have a negative effect on the temperature and humidity of the roost. There should be no recent collapses/falls or new signs of geological instability. Greater and lesser horseshoe bats roost mainly in underground sites during winter, often communally. **Lesser horseshoe bat** The preferred temperature of lesser horseshoe bat hibernation sites is a stable 6-7ºC, with humidity approaching 100% (Schofield, 2008). **Greater horseshoe bat, barbastelle bat and Bechstein's bat** There is currently insufficient information available in the	STEBBINGS, R.E. and WEBBER, M, 2001. *RAF Chilmark: Survey of Underground Mines and Entrances*. Report for Wiltshire County Council

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			academic press to provide specific targets on humidity, temperature, light levels and ventilation preferred by the species during the hibernation period.	
Supporting habitat: structure/ function	**Supporting off-site habitat (flightlines)**	Maintain the presence, structure and quality of any linear landscape features which function as flightlines. Flightlines should remain unlit, functioning as dark corridors.	Flightlines will extend beyond the designated site boundary into the wider local landscape and are also important for the commute between summer and winter roost sites. **Lesser horseshoe and greater horseshoe bats** Lesser and greater horseshoes commute and forage along linear features over wet grassland, grazed pasture and in woodland. Permanent pasture and ancient woodland linked with an abundance of tall bushy hedgerows is ideal supporting habitat for this species **Barbastelle bat** Barbastelle bats generally forage within woodland canopy and margins, though they will feed in more open areas i.e. orchards, suburban parks. They commute along linear landscape features such as woodland edge, hedgerows *etc*, though will cross extensive open areas (i.e. arable fields) to reach foraging grounds and may feed to a certain extent within these more open areas. Typical flightlines used by this species include linear hedgerows, waterways, blocks of scrub, wooded rides and tracks. **Bechstein's bat** Bechstein's bat generally forages within deciduous woodland which contains water bodies, occasionally feeding along woodland edge, treelines and hedgerows. Bechstein's bat generally commutes along linear landscape features such as woodland edge, hedgerows, however, they will cross open fields to reach roost sites and foraging areas.	
Supporting habitat: structure/ function	**Supporting off-site habitat (foraging areas)**	Maintain any core areas of feeding habitat outside of the SAC boundary that are critical to lesser horseshoe, greater horseshoe, barbastelle and	Roost choice, and the presence of bats within the SAC, is likely to be influenced by the site's ability to provide bats with food and shelter. Key feeding areas around a roost, and the commuting routes (or flight-lines) between them, will be an important element of sustaining the SAC population.	PARK K.J., JONES G. & RANSOME R.D. 2000. *Torpor, arousal and activity of hibernating Greater Horseshoe Bats (Rhinolophus ferrumequinum)*.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		Bechstein's bats during their hibernation period	Flightlines will extend beyond the designated site boundary into the wider local landscape. Feeding areas used by SAC bats may be outside of the SAC boundary but be critical to successful hibernation (these undesignated areas are sometimes referred to as 'sustenance zones' or 'functionally-linked land'). See also the 'Supporting and Explanatory Notes' for the 'Supporting off-site habitat (flightlines)' attribute, above. **Lesser horseshoe bat** Lesser horseshoes tend to forage within 2.5km of their summer roost, though they can travel up to 4km from these roosts to suitable foraging grounds (Schofield, 2008). Within the winter, their foraging range is reduced, with a mean foraging radius of 1.2 km around hibernation sites reported. During the winter, lesser horseshoes emerge from hibernacula about once every two weeks for water / food, therefore condition of habitat in the immediate vicinity of hibernacula is very important. Winter prey (e.g. crane-flies, winter gnats, midges, dung flies) is often associated with damp woodland with decaying wood, and grazed pasture with abundant dung. **Greater horseshoe bat** During the winter greater horseshoe bats emerge every couple of weeks for food and water, therefore habitat within the immediate vicinity of hibernation sites is important (Park, Jones & Ransome 2000).	Functional Ecology **14**: 580-588.
Supporting habitat: structure/ function	**Roost access**	Maintain the number of access points to the roosts at an optimal size and in an unlit and unobstructed state, with surrounding vegetation providing sheltered flyways without obstructing accesses	This will prevent any negative internal climatic changes within the roosts and maintain the ability of bats to freely enter and leave the roosts as necessary. **Horseshoe bats** Normal minimal dimensions for horseshoe access points: • lesser horseshoe bats: 300 x 200mm	Access point maps are held by Natural England. Surveys are carried out by licenced persons for NE. This information is sensitive and requirements for it must be discussed with NE

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			• greater horseshoe bats: 400 x 300mm	STEBBINGS, R.E. and WEBBER, M, 2001. *RAF Chilmark: Survey and Management of Open Entrances*. Report for Wiltshire County Council CHALKHILL ENVIRONMENTAL CONSULTANTS, 2001. *Fonthill Grottoes SSSI: Baseline Assessment of Underground Bat Roost SSSI Entrances* (report for English Nature) This attribute will be periodically monitored as part of Natural England's site condition assessments.
Supporting processes (on which the feature and/or its supporting habitat relies)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of supporting habitat features to absorb or adapt to wider environmental changes. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of functioning. Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability. Increasing winter temperatures may result in less time in torpor/hibernation e.g. more frequent awakening or earlier spring emergence, requiring more frequent winter feeding and food to be available earlier in the year.	NATURAL ENGLAND. 2015. *Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England*. Available at: http://publications.naturalengland.org.uk/publication/4954594591375360 SHERWIN, H.A., MONTGOMERY, W.I. & LUNDY, M.G. 2013. *The Impact and Implications of Climate Change for Bats*. Mammal Review **43:** 171-182. VOIGT, C.C., SCHNEEBERGER, K., VOIGT-HEUCKE, S. &

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Climate change resilience will be aided by the protection and maintenance of quality feeding habitat close to the roosts. The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being moderate, taking into account the sensitivity, fragmentation, topography and management of its supporting habitats. This means that this site is considered to be vulnerable overall but moderately so. This means that some adaptation action for specific issues may be required, such as reducing habitat fragmentation, creating more habitat to buffer the site or expand the habitat into more varied landscapes and addressing particular management and condition issues. Individual species may be more or less vulnerable than their habitat itself. In many cases, change will be inevitable so appropriate monitoring would be advisable.	LEWANZIK, D. 2011. *Rain Increases the Energy Cost of Bat Flight*. Biology Letters **7:** 793-795.
Supporting processes (on which the feature and/or its supporting habitat relies)	**Air quality**	Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The supporting habitat of this feature is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH_3), oxides of nitrogen (NO_x) and sulphur dioxide (SO_2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. Target set to Restore because current levels of nitrogen deposition (APIS accessed 9 January 2019) exceed the Critical Load range of 10-20 kg/ha/yr for the supporting habitat (broadleaved deciduous woodland).	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Conservation measures**	Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain the structure, functions and supporting processes associated with the feature and its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Management for this site includes installing/maintaining grilles at hibernation roost entrances, maintaining appropriate vegetation cover around entrances, preventing disturbance, and maintaining appropriate internal conditions including temperature, humidity and airflow.	ENGLISH NATURE, 2005. *A statement of English Nature's views about the management of Chilmark Quarries Site of Special Scientific Interest (SSSI).* Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/VAM/1002508.pdf ENGLISH NATURE, 2004. *A statement of English Nature's views about the management of Fonthill Grottoes Site of Special Scientific Interest (SSSI).* Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/VAM/1006758.pdf NATURAL ENGLAND, 2015. *Chilmark Quarries SAC Site Improvement Plan (SIP).* Available at: http://publications.naturalengland.org.uk/publication/5962539112333312
Supporting processes	**Disturbance from human**	Control and minimise human access to roost sites	Sites should be secured against unauthorised access, which can result in disturbance to bats at critical times of year and	NATURAL ENGLAND, 2007. *Chilmark Quarries SSSI*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
(on which the feature and/or its supporting habitat relies)	**activity**		which can affect their population viability and use of the site. Grilles on site access points should be maintained where present and additional grilles should be installed where necessary.	*Favourable Condition Tables* NATURAL ENGLAND, 2007. *Fonthill Grottoes SSSI Favourable Condition Tables* This attribute will be periodically monitored as part of Natural England's site condition assessments.
Version Control Advice last updated:				
Variations from national feature-framework of integrity-guidance: Attribute for '**Distribution of supporting habitat'**: deleted as sufficiently covered by extent attribute Attribute for '**Soils substrate and nutrient cycling'**: deleted as not relevant on this site Attribute for '**Water quantity/quality'**: deleted as not relevant on this site Attribute for '**Internal condition of building - maternity and hibernation**': maternity text not relevant so deleted. Text relating to temperature of hibernation site moved to attribute relating to '**Internal condition of underground site - hibernation'** Attribute for '**External condition of building - hibernation site**': deleted as not relevant Separate attributes have been developed for '**Internal condition of underground site – hibernation'** and '**External condition of underground site – hibernation'**, based on the original 'External condition of underground site – maternity and hibernation' attribute'. Attribute for '**Population abundance - maternity colony'**: deleted as not relevant				