



Forestry England

Forest of Dean Bat SSSI Management Plan 2022 - 2032

Wigpool Ironstone Mine SSSI

Westbury Brook Ironstone Mine SSSI

Buckshraft Mine & Bradley Hill Railway Tunnel SSSI

Old Bow & Old Ham Mines SSSI

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SSSI Name & Natural England Site Ref	Natural England File Ref.	Forest Plan Name	Compartment	OS Grid Ref.	Area
Wigpool Ironstone (2000191)	S061/15	Wigpool	641	SO 654 197	34.9
Westbury Brook Ironstone Mine (2000188)	S061/14	Haywood Castiard Vale	Parts of 309 312	SO 661 166	15.7
Buckshaft Mine & Bradley Hill Railway Tunnel (2000192)	S061/13	Parkend Walk and Blakeney Walk	441 & 399	SO 655 120 SO 662 103	4.9 0.75
Old Bow & Old Ham Mines (2000187)	S050/6	Bromley	100	SO 579 087	40.3

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**Agreed on behalf of
Forestry England Deputy
Surveyor**

Sam Pegler, District Ecologist

Date

20th May 2022



**Agreed on behalf of
Natural England**

Carlie Evans, Terrestrial Biodiversity Adviser, West Midlands

Date

20th May 2022

Consent

The signing of this plan by Natural England gives the necessary consent under Section 28(6) of the Wildlife & Countryside Act (1981), as amended, for the management prescriptions detailed in this plan to be undertaken without necessity to consult prior to each operation for the duration of this plan.

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Introduction

The Forest of Dean and the Wye Valley form one of the main British and European strongholds for the lesser horseshoe bat *Rhinolophus hipposideros* and is a significant British stronghold for the greater horseshoe bat *R. ferrumequinum*. Lesser horseshoe bat and greater horseshoe bat (hereafter collectively referred to as ‘horseshoe bats’) are both rare and threatened due to the continuing loss of breeding and hibernation roosts and vital feeding areas. National legislation includes protection of horseshoe bats under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA). International legislation also makes provision for the protection of lesser horseshoe bat and greater horseshoe bat, which in the UK is implemented through the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (hereafter referred to as the ‘Habitats Regulations’). Under the Habitats Regulations, horseshoe bats are classed as a European Protected Species (EPS).

In the Forest of Dean and Wye valley a ring of iron ore-bearing Carboniferous limestone forms the focus of a series of ancient and more recent mines which provide hibernation sites for horseshoe bats and other bat species. Five hibernation sites and eight breeding sites within the area have been notified as SSSI, the latter equally split between England and Wales. Collectively they form the Wye Valley and Forest of Dean Bat sites Special Area of Conservation (SAC) notified in 2005 (Appendix 1).

Four hibernation sites on land managed by Forestry England (FE) were notified as SSSI in 1998 along with one site on privately-owned ground where the Forestry England has some mineral interest. The four sites are Wigpool Ironstone Mine SSSI, Westbury Brook Ironstone Mine SSSI, Buckshrafft Mine & Bradley Hill Railway Tunnel SSSI and Old Bow & Old Ham Mines SSSI (Appendix 2). These sites were notified on the basis of their lesser or greater horseshoe bat populations with all sites containing variable numbers of each species. It should be noted that these figures are certainly under-recording the actual use and value of the sites for horseshoe bats due to the limited numbers of visits by surveyors, the restricted extent to which parts of the mines can be/have been examined and difficult survey/count conditions within the mines (Appendix 3 – bat counts for SSSI).

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Emerging evidence suggests that these sites and other unscheduled sites within the area are also important hibernacula for large numbers of *Myotis* species of bats. Species such as Bechstein's bat *Myotis bechsteinii* have been observed and caught at autumnal swarming¹ sites, alongside other *Myotis* species such as barbastelle *Barbastella barbastellus*.

Bats use the systems of tunnels and caverns in the hibernation sites during the winter months. Depending on the temperature and humidity they will move around the mine system to locate ideal hibernation conditions. The woodland cover around the entrances helps regulate the ventilation of the mine system maintaining relatively stable temperature and humidity conditions. The nearby established broadleaved woodland is particularly important in the spring as it provides foraging areas for emerging bats that need to build fat reserves quickly to ensure a successful breeding season. The presence of sheep in the woodlands and neighbouring farmland also appears to support a population of dung beetles that provide a winter-feeding resource during periods of milder weather.

All five notified hibernation sites have some relationship to FE. Within the St. Briavels Hundred (Appendix 4) Forestry England hold the mineral rights. The Deputy Gaveler, who is an employee of FE, is responsible for granting gales (the mine area extent), gathering revenue from mining activities and the implementation of the Mines Acts below ground. Forestry England have no jurisdiction over the underground operation of the mine. Forestry England do however have jurisdiction over the mine entrance and the above ground area of the mine workings where the mine entrance is situated on Forestry England land. In areas where the mine entrance and surface workings are situated on privately owned land, responsibility rests with the landowner.

UNDERGROUND SSSI SECTIONS

These are composed of mine workings (including shafts, adits, tunnels and caverns) in some cases leading from 'scowles' (surface mine workings). Mining (by freeminers under the Dean Mines Act 1841) within the identified gales is administered by the Deputy Gaveler of FE. In some cases the gales are held "in abeyance" and there is no active mining taking place.

SURFACE SSSI SECTIONS

The SSSI at the surface is limited to the locations of the mine entrances. In some cases the boundary includes an area of woodland around the entrances or the extent of the scowles with multiple entrances into the system. Of the four hibernation sites covered by this plan, only three have surface sections that fall within the land ownership of FE. The surface sections of Old Bow and Old Ham Mines are on privately owned land and all Bradley Hill Railway Tunnel designation lies underground.

In order to secure the continued use of the mines by bats, the wider management of the woodland around the mine entrances must also be considered. On the Forestry England

¹ "Swarming in bats consists, in appearance, of high flight activity during which bats chase each other around entrances and in and out of underground cavities" (Saucy, 2019). The exact purpose of swarming has yet to be conclusively proven.

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estate, woodland management proposals are conceived and delivered through the Forest Plan (FP) process. Relevant FPs should be cross-referenced with this plan.

In the FP areas where the SSSI sites are located, as well as balancing other management objectives, woodland management aims to ensure the maintenance of a landscape that is suitable for bats. This can be achieved by maintaining woodland cover on SSSI sites and wooded links from the SSSI to the wider woodland environment to enable bats to commute to feeding areas and other roosts.

Together with the other breeding sites, the SSSI hibernation sites are the most important recorded locations for these species. The SSSI sites are however interconnected and supported by a large number (in excess of 150) of other known hibernation/autumn/spring roost sites (not designated as SSSI) scattered throughout the mine systems and other sites within the Forest of Dean and Wye valley. These sites were identified by the collation of records held by local bat workers and researchers in 1996 and are recorded in Natural England's "*Greater & Lesser Horseshoe Bat Site Inventory for the Wye Valley & Forest of Dean*" (Appendix 5).

Habitats Regulations Assessment

Under Habitats Regulations, it is a requirement of a competent authority (FE in this instance) to undertake a Habitats Regulations Assessment (HRA) of the potential impact on any project or plan on any relevant internationally designated sites.

Special Areas of Conservation fall within the international site designation. FP that include or are within the relevant Zones of Influence (Zol) of an international site must include an HRA. As such, HRA (Appendix 6) have been completed for all FP that interact with the Wye Valley and Forest of Dean Bat sites SAC.

The Zol for the Wye Valley and Forest of Dean Bat sites SAC includes the majority of the Forest of Dean and surrounding areas of Gloucestershire, Monmouthshire and Herefordshire. All suitable habitat within these Zol is considered to be functionally linked to the Wye Valley and Forest of Dean Bat sites SAC. The Zol for both horseshoe species is detailed within Natural England's 2021 Interim Guidance "*Wye Valley and Forest of Dean Bat SAC Development Management - Horseshoe Bat activity survey and assessment guidance*". Mapping showing these Zol are included below in Appendix 7.

Conservation Objectives

Natural England has developed a strategy (the Natural England Lesser and Greater Horseshoe Bat Conservation Strategy, Appendix 8) which identifies a number of bodies and authorities whose work has the potential to impact on horseshoe bats and their habitats (NE, 2000). The strategy seeks to identify ways in which beneficial action of management can be undertaken as part of existing activities or functions. A joint working partnership of Natural England, Forestry England and the Forest of Dean Caving and Conservation Access Group (FODCCAG) was formed as part of this strategy.

A survey of bat hibernacula was carried out in 2004/5 in order to determine the conditions for SSSI favourable condition status. Members of FODCCAG performed the work with financial assistance from Natural England. The aim of the work was to establish baseline recording for bat numbers, levels of disturbance and the conditions of both the mines and external entrances. This work has supported the development of the following favourable condition table.

Favourable condition is achieved when the following conditions are met	
Access And Disturbance	There is no significant increase in the levels of human disturbance during the winter months (relative to the 2004/5 baseline) (Appendix 3).
	There is no unauthorised access and all grills are intact
Entrances	There are no new entrances created without consent (relative to the 2004/5 baseline).
	There are no obstructions to the entrance (either man-made or a result of geological instability) that could block access by the bats or significantly alter airflows or humidity within the mine.
	There is vegetation close to but not obstructing entrances.
	There are no lights shining on the entrance.
Internal Conditions	Humidity, temperature and airflow are not subject to significant unplanned changes (relative to the 2004/5 baseline).
Surrounding Woodland	At least 50% of existing woodland cover within a SSSI is maintained and in a pattern that ensures access connections from and between main entrances into the wider wooded area.

FODCCAG is an umbrella organisation representing various groups with an interest in underground access. It provides a single point of contact with such groups for Forestry England and Natural England. It also fulfils an important role in helping to co-ordinate SSSI

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monitoring and underground access at levels that can be sustained without adverse impact on bat populations.

Cave Conservation Plans will be agreed with FODCCAG that will confirm access restrictions to and within sensitive underground sections. A joint protocol between Natural England, Forestry England and FODCCAG has been agreed (Appendix 9).

Currently (April 2022) all four SSSI sites on Forestry England managed land are in favourable condition.

SSSI Details

Wigpool Ironstone Mine SSSI

Mine details

The Wigpool Ironstone Mine SSSI is situated on the north edge of the Forest of Dean near Mitcheldean. Wigpool Ironstone Mine SSSI is over 130m deep and has more than 3km of tunnels and workings with five main open entrance shafts. All shafts have security grilles fitted that allow access by bats.

Wigpool Ironstone Mine SSSI is an important hibernation site for lesser horseshoe bats and supports a smaller number of greater horseshoe bats. Wigpool Ironstone Mine SSSI is only 5km from the lesser horseshoe breeding roost at Blaisdon Hall SSSI.

Wigpool Ironstone Mine SSSI is currently in gale to Messrs. Wright of Clearwell Caves. It is used both commercially with small quantities of iron ore, ochre and rock samples being extracted and for recreation. There is some controlled caving and pot holing mainly during the summer months.

The underground part of Wigpool Ironstone Mine SSSI forms Unit 1.

Woodland details

The Wigpool FP covering Wigpool Ironstone Mine SSSI was reviewed in 2020 with no major changes affecting the SSSI. The woodland covering much of the eastern half is broadleaved consisting of beech high forest and in some parts developing ash natural regeneration.

The north-west and south-west quarters are currently conifer woodland with the central western part cleared of trees and managed as lowland heathland.

The entrance and surrounding broadleaved woodland within the eastern third of Wigpool Ironstone Mine SSSI forms Unit 2.

SSSI Management

Underground

Working/mining practices will continue within the mine at existing levels. Any significant change in mining activity or proposals to increase visitor numbers to the mine must be subject to consultation with Natural England under the requirements of the WCA. A separate Site Management Statement has been agreed between Natural England and the Freeminers.

The existing level of cave access provision and access control arrangements will be maintained to minimise disturbance to bats. FODCCAG and Gloucestershire Speleological Society have arrangements with the Freeminers who also supervise/lead limited visits by other caving clubs/groups).

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Annual monitoring counts of bat species will continue to be undertaken during the winter months by suitably licensed bat workers in association with FODCCAG.

Surface

Maintain the existing access points through the main entrances preventing blockage or closure through natural rock falls or the dumping of materials. The safety fencing that is currently in place around the existing access points will be replaced following the planned thinning of the surrounding areas in 2021-22 (please see below).

Woodland cover immediately surrounding the mine entrances and linkage to the wider woodland will be maintained.

The broadleaved woodland within the extent of Wigpool Ironstone Mine SSSI will be managed on a continuous cover basis with no intention to clear-fell large areas. Thinning operations will continue at approximately ten-year intervals with the intention of removing up to 20% canopy cover. Much of the area was thinned in 2011 and the next thinning is programmed for late 2021-22.

The Norway spruce crop on the north-west quarter of Wigpool Ironstone Mine SSSI is planned to be clear-felled in winter 2028-29. The extents of the clear-fell will be determined in part by a review of the adjacent lowland heathland restoration project.

The proposed extension of the lowland heathland to the west of Wigpool Ironstone Mine SSSI is currently on hold and will be reviewed in 2022. The review will include an assessment of the use of the existing woodland edge and lowland heathland by bat species to consider the potential effects of extending the area of lowland heathland. Any lowland heathland conversion will ensure that appropriate retentions are maintained when crops are cleared to provide access to the wider woodland to the west. The results of this review and any subsequent management will be communicated to Natural England as part of a separate consent and appended to this report.

Whenever possible thinning and felling operations within the surface component of Wigpool Ironstone Mine SSSI will be timed to avoid the autumn and spring months when bats are likely to be entering or leaving the site to minimise disruption to their navigation. Whenever possible work during warmer winter months when bats may become active will also be avoided.

Westbury Brook Ironstone Mine SSSI

Mine Details

Westbury Brook Ironstone Mine SSSI is situated on the eastern side of the Forest of Dean near Cinderford. The mine is accessible to a depth of 150m below which point the mine is flooded. There is only one entrance to the mine and following the identification of potential structural weaknesses to the entrance, substantial stabilisation work was completed in 2004. The entrance to the mine is fitted with a security grille that allows access by bats.

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The mine is a hibernation site for lesser horseshoe bats but is also used by a small number of greater horseshoe bats. At least eight other species of bat use the site in the autumn including several species of *Myotis* bats.

The mine is 4km from the lesser horseshoe breeding site at Blaisdon Hall SSSI and 3km from the greater horseshoe breeding site at Dean Hall.

Currently the mining gale is not granted.

The underground section forms Unit 1 of Westbury Brook Ironstone Mine SSSI.

Woodland Details

Westbury Brook Ironstone Mine SSSI falls within the Haywood Castiard Vale FP area and the plan was reviewed in 2020.

Much of the surrounding woodland is composed of mixed conifer species although there are small areas of semi-mature broadleaved woodland nearby with larger areas of mature oak woodland at a slightly greater distance from the SSSI.

Along the top of the ridge to the west of Westbury Brook Ironstone Mine SSSI there is a developing programme of conversion of conifer woodland to lowland heathland.

The entrance scowle and immediately adjoining woodland forms Unit 2 of Westbury Brook Ironstone Mine SSSI.

SSSI Management

Underground

Other than monitoring the mine system, no further work is currently required.

Annual monitoring counts of bat species will continue to be undertaken during the winter months by suitably licensed bat workers in association with FODCCAG.

Surface

The entrance will be monitored to ensure that access to the mine is not obstructed either through natural collapses or dumping of materials. The long-term conservation value of the site is dependent on the stability of this access point.

There have been issues with unauthorised access to the mine and this will be controlled as far as is possible.

Woodland cover immediately around the entrance will be maintained. This is particularly important given the swarming behaviour observed at this site.

An area of Corsican pine west of the mine was felled in 2016 and converted to lowland heathland. Although the conversion to lowland heathland created a relatively large area of open ground, wooded links to the west were maintained. Further expansion of the lowland heathland is currently suspended while appropriate management of existing areas are established. Any lowland heathland conversion will ensure that appropriate retentions are

maintained when crops are cleared to provide access to the wider woodland. Any subsequent management will be communicated to Natural England as part of a separate consent and appended to this report.

Thinning operations on part of Westbury Brook Ironstone Mine SSSI were undertaken in 2017 and further thinning is scheduled for 2022.

Whenever possible thinning and felling operations within the surface component of Westbury Brook Ironstone Mine SSSI will be timed to avoid the autumn and spring months when bats are likely to be entering or leaving the site to minimise disruption to their navigation. Whenever possible work during warmer winter months when bats may become active will also be avoided.

At the time of the next FP revision, additional measures should be put in place to consolidate woodland linkage across the area of proposed lowland heathland, particularly around the masts where woodland is to be retained to provide some visual screening for the mast infrastructure. Such links could provide access to areas of mature broadleaved woodland that could be used by bats as foraging sites.

Buckshraft Ironstone Mine & Bradley Hill Railway Tunnel SSSI

Mine Details

Buckshraft Ironstone Mine and Bradley Hill Railway Tunnel SSSI is located on the eastern edge of the Forest of Dean between Cinderford and the village of Soudley.

Buckshraft Ironstone Mine is approximately 150m in depth and there are over 1km of tunnels and workings that provide suitable conditions of temperature and humidity for bats. There is only one entrance at the bottom of a deep scowle which is fitted with a security grille that allows access by bats. Buckshraft Ironstone Mine is not currently in gale.

Buckshraft Ironstone Mine is noted for its wintering population of greater horseshoe bats with smaller numbers of lesser horseshoe bats also recorded. As well as being used by adult bats, Buckshraft Ironstone Mine is also known to be the hibernation site of at least two thirds of the juvenile population of greater horseshoe bats from the Dean Hall Coach House & Cellar SSSI situated 2km further east. It has also been observed that greater horseshoe bats from the breeding roost at Woodchester Park SSSI 15km away on the east side of the Severn also use the site to hibernate. In addition, unringed greater horseshoe bats found there may have originated from the Newton Court SSSI breeding site at Monmouth 15km to the west.

The entrance area of Buckshraft Ironstone Mine is used as a swarming site for several other species of bat, including Bechstein's bat and Barbastelle.

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Severn Trent Water continues to extract water from the mine, although there is no formal agreement.

Bradley Hill Railway Tunnel lies to the southeast of Buckshraft Ironstone Mine, to the south of the village of Soudley. The disused stone and brick-lined railway tunnel is slightly curved and approximately 0.25km in length. The shape of the designated area does not align with exact location of the railway tunnel. Each entrance is bricked up to leave a 2m gap at the top.

Bradley Hill Railway Tunnel is used by greater horseshoe bats as a spring and autumn transition roost in their movement between Buckshraft Ironstone Mine and Dean Hall Coach House & Cellar SSSI. Bradley Hill Railway Tunnel has been shown to support up to one third of the breeding population of the Dean Hall Coach House & Cellar SSSI greater horseshoe bats in autumn. Bradley Hill Railway Tunnel is not normally suitable as a winter roost, as temperatures within the tunnel are generally unsuitable.

Units 1 and 2 of Buckshraft Ironstone Mine and Bradley Hill Railway Tunnel SSSI covers Buckshraft Ironstone Mine, while Bradley Hill railway tunnel forms Unit 3.

Woodland Details

Buckshraft Ironstone Mine and Bradley Hill Railway Tunnel SSSI lies within the Parkend Walk and Blakeney Walk FP.

Although nearly two-thirds of the underground section of Buckshraft Ironstone Mine is covered by broadleaved woodland, the remainder including the entrance is covered by Corsican pine. The Corsican pine was heavily thinned in 2013. The broadleaved woodland was thinned in 2017 and in 2019.

All of the woodland overlying Bradley Hill Railway Tunnel is open mature broadleaved woodland that is managed as minimum intervention. The northern part closest to the Dean Heritage Museum is leased to the museum and management is under their control. It is not anticipated that management within this area or the remainder is likely to have any adverse impact on the SSSI.

SSSI Management

Underground

Other than monitoring Buckshraft Ironstone Mine, no further work is currently required.

Annual monitoring counts of bat species will continue to be undertaken during the winter months by suitably licensed bat workers in association with FODCCAG.

Surface

The existing access points to both sites should be maintained in their current condition. Given the proximity of the entrance to Buckshraft Ironstone Mine to existing residential properties and those that are about to be developed, its entrance will require monitoring

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for the dumping of garden waste and other material. In addition, the impact of garden lighting in neighbouring properties should be monitored.

Scowls that form part of the surface Buckshraft Ironstone Mine provide a direct route for surface water ingress to a secondary A aquifer² that supplies water to Cinderford and surrounding populations. Management must be carefully undertaken during dry weather conditions to prevent contamination of the water supply in line with standard pollution guidelines required under the UK Woodland Assurance Standard (UKWAS).

The area of Corsican pine around the Buckshraft Ironstone Mine entrance will be managed as minimum intervention to promote natural regeneration of broadleaved species following the heavy thinning in 2013. A small section of Corsican pine in the north-western corner of the woodland will be removed and replanted with broad leaved species. The area is approximately 0.1ha and currently lacks diversity in structure and species composition. Removal of the Corsican pine will provide an opportunity for small scale structural change and an increased diversity. Due to the location of the Corsican pine between two paths on the edge of the woodland it is envisaged that removal can be achieved without collateral damage. Connectivity and continuity of habitat would be retained and the transition to broad leaved species would provide a net benefit to the surrounding woodland.

Areas of broadleaves will generally be managed on a continuous cover basis without clear-felling. The broadleaved areas around Buckshraft Ironstone Mine and Bradley Hill Railway Tunnel SSSI will be thinned in 2024-25 to remove sweet chestnut infected with 'ink disease' (caused by *Phytophthora cinnamomi* and *Phytophthora cambivora*). The on-going deterioration of sweet chestnut in the area may necessitate larger extents of removal in the future, however the specifics of any management will be informed by the progress of the disease. Any deviation from the planned thinning will be agreed with Natural England prior to works commencing.

Whenever possible thinning and felling operations within the surface components of Buckshraft Ironstone Mine and Bradley Hill Railway Tunnel SSSI will be timed to avoid the autumn and spring months when bats are likely to be entering or leaving the site to minimise disruption to their navigation. Whenever possible work during warmer winter months when bats may become active will also be avoided.

The broadleaved woodland around Bradley Hill tunnel will be managed as continuous cover woodland. Management intensity will be low.

² Secondary A aquifers comprise permeable layers that can support local water supplies, and may form an important source of base flow to rivers

Old Bow & Old Ham Mines SSSI

Mine Details

Old Bow and Old Ham Mines SSSI lie on the western edge of the Forest of Dean between the communities of Milkwall and Clearwell. Old Bow and Old Ham Mines SSSI is composed of extensive underground mine workings covering four mine systems (Clearwell, Old Bow, Lambsquay and Old Ham) some of which are inter-connected. The gridded shaft entrances along the western side of Old Bow and Old Ham Mines SSSI give access to tunnels and workings estimated to exceed 30km in length. In addition there are a number of smaller underground workings in woodland nearby where horseshoe bats have been recorded.

Old Bow and Old Ham Mines SSSI is noted for very large over-wintering population of lesser horseshoe bats and a smaller number of greater horseshoe bats. Other *Myotis* species have also been recorded. The site is within 8- 14km of the lesser horseshoe breeding roosts at Sylvan House Barn SSSI, Caerwood and Ashberry Goose House SSSI and Blaisdon Hall SSSI. There are also several unscheduled breeding sites towards Bream and St. Briavels.

Messrs Wright holds the gale for the Clearwell caves section of the system that is run as a commercial venture. Small quantities of iron ore, rock samples and natural pigments such as ochre are extracted. Clearwell caves are also managed throughout the year as a tourist destination to allow public access to view underground rock formations.

Unit 1 of the SSSI covers the underground section of the SSSI. Only that part south of Lambsquay Road that runs to the village of Clearwell is within Forestry England ownership.

Woodland Details

Most of the woodland within the area of Old Bow and Old Ham Mines SSSI is located within Units 2 and 3.

South of Lambsquay Road the surface of Old Bow and Old Ham Mines SSSI is in Forestry England ownership. The area is covered in a mosaic of mixed aged broadleaved woodland and open habitat, including an area of standing water.

SSSI Management

Underground

As the underground section of Old Bow and Old Ham Mines SSSI is in gale, Forestry England has no control over the mine management and its operation. This is covered separately by an agreement between Natural England and the mine operator.

Annual monitoring counts of bat species will continue to be undertaken during the winter months by suitably licensed bat workers in association with FODCCAG.

Surface

Existing access points within FE land will be maintained in their current condition. The land south of Lamsquay Road that is under Forestry England ownership is currently managed as broadleaved shelterwood, mature retained habitat and open space.

Open land is managed as heathland or calcareous grassland vegetation communities. Large proportions of these areas have been historically covered in bracken, therefore management is focussed on control of bracken and scrub to maintain the features of interest.

The areas of broadleaved shelterwood will be thinned in 2021/2022 in order to allow space for crown development and to increase the heterogeneity of the woodland structure. The thinning is considered to be beneficial to the woodland structure and the overall woodland cover will be maintained.

Whenever possible thinning and felling operations within the surface components of Old Bow and Old Ham Mines SSSI will be timed to avoid the autumn and spring months when bats are likely to be entering or leaving the site to minimise disruption to their navigation. Whenever possible work during warmer winter months when bats may become active will also be avoided.

Summary of Actions

The following table details a summary of specific actions for each relevant SSSI detailed above.

Whenever possible thinning and felling operations within the surface component of each relevant SSSI will be timed to avoid the autumn and spring months when bats are likely to be entering or leaving the site to minimise disruption to their navigation. Whenever possible work during warmer winter months when bats may become active will also be avoided.

SSSI Name	Summary of actions
Wigpool Ironstone Mine SSSI	<p>Maintain the existing access points.</p> <p>The safety fencing that is currently in place around the existing access points will be replaced following the planned thinning of the surrounding areas in 2021-22.</p> <p>Woodland cover immediately surrounding the mine entrances and linkage to the wider woodland will be maintained.</p> <p>The broadleaved woodland within the extent of Wigpool Ironstone Mine SSSI will be managed on a continuous cover basis with no intention to clear-fell large areas.</p> <p>Thinning operations will continue at approximately ten-year intervals with the intention of removing up to 20% canopy cover.</p>
Westbury Brook Ironstone Mine SSSI	<p>Maintain the existing access points.</p> <p>Woodland cover immediately around the entrance will be maintained.</p> <p>Thinning operations on part of Westbury Brook Ironstone Mine SSSI is scheduled for 2022.</p>
Buckshraft Ironstone Mine & Bradley Hill Railway Tunnel SSSI	<p>The existing access points to both sites should be maintained in their current condition.</p> <p>Management must be undertaken during dry weather conditions to avoid contamination of the local aquifer.</p> <p>The area of Corsican pine around the Buckshraft Ironstone Mine entrance will be managed as minimum intervention.</p> <p>A small section (0.1ha) of Corsican pine in the north-western corner of the woodland will be removed and replanted with broad leaved species.</p> <p>Areas of broadleaves will generally be managed on a continuous cover basis without clear-felling.</p>

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	<p>The broadleaved areas around Buckshraft Ironstone Mine and Bradley Hill Railway Tunnel SSSI will be thinned in 2024-25 to remove sweet chestnut infected with 'ink disease'.</p> <p>The broadleaved woodland around Bradley Hill tunnel will be managed as continuous cover woodland.</p>
Old Bow & Old Ham Mines SSSI	<p>Maintain the existing access points.</p> <p>Open land will continue to be managed as heathland or calcareous grassland vegetation communities. Management is focussed on control of bracken and scrub to maintain the features of interest.</p> <p>The areas of broadleaved shelterwood will be thinned in 2021/2022 in order to allow space for crown development and to increase the heterogeneity of the woodland structure.</p>

Summary of Potentially Damaging Operations

The management prescriptions detailed in this plan are considered to be consented by Natural England.

Any activities not detailed above will not be included within this consent.

Natural England have published a list of “*Operations likely to damage the special interest*” of the relevant SSSI listed above. These documents are included below in Appendix 10.

Any “*Operation likely to damage the special interest*” not specifically included within the management prescriptions above would require consent from Natural England to proceed.

The listed “*operations likely to damage the special interest*” are broad in scope and would include (but are not limited to) the following activities:

- Preparation, repair or construction or change of use of any road or track within the relevant SSSI.
- Removal of trees or vegetation outside of the management prescriptions above.
- Recreational events.
- Use of chemicals near roosting areas.
- Storage of material near bat roosting areas or access points.
- Construction, engineering or demolition of any kind, including erection of fencing or temporary compounds.

Appendices

Appendix 1: Wye Valley and Forest of Dean Bat sites SAC citation

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name: Wye Valley and Forest of Dean Bat Sites

Unitary Authority/County: Gloucestershire, Monmouthshire

SAC status: English part designated on 1 April 2005
Welsh part designated on 13 December 2004

Grid reference: SO521107

SAC EU code: UK0014794

Area (ha): 142.70

Component SSSI: Blaisdon Hall SSSI, Buckshraft Mine and Bradley Hill Railway Tunnel SSSI, Caerwood and Ashberry Goose House SSSI, Dean Hall Coach House and Cellar SSSI, Devil's Chapel Scowles SSSI, Llangovan Church SSSI, Mwyngloddfa Mynydd-Bach SSSI, Newton Court Stable Block SSSI, Old Bow and Old Ham Mines SSSI, Sylvan House Barn SSSI, Westbury Brook Ironstone Mine SSSI, Wigpool Ironstone Mine SSSI, Wye Valley Lesser Horseshoe Bat Sites SSSI

Site description:

This complex of sites on the border between England and Wales contains by far the greatest concentration of lesser horseshoe bats *Rhinolophus hipposideros* in the UK. In addition the site also supports large numbers of greater horseshoe bats *Rhinolophus ferrumequinum*. The entire site supports an exceptional breeding population of both species as the majority of sites within the complex are maternity roosts. The site also includes several disused mines which are used as hibernation roosts.

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Greater horseshoe bat *Rhinolophus ferrumequinum*
- Lesser horseshoe bat *Rhinolophus hipposideros*

This citation relates to a site entered in the Register of European Sites for Great Britain.

Register reference number: UK0014794

Date of registration: 14 June 2005

Signed: *Trevor Salmon*

On behalf of the Secretary of State for Environment, Food and Rural Affairs

The site is also entered in the Register of European sites for Wales, maintained by the National Assembly for Wales.

Forest of Dean Bat SSSI Management Plan 2022 - 2032

Appendix 2: Wigpool Ironstone Mine SSSI, Westbury Brook Ironstone Mine SSSI, Buckshraft Mine & Bradley Hill Railway Tunnel SSSI and Old Bow & Old Ham Mines SSSI citations

County: **Gloucestershire**

Site Name: **Buckshraft Mine &
Bradley Hill Railway Tunnel**

File Ref: **SO 61/13**

District: **Forest of Dean**

Site Ref: **2000192**

Status: **Site of Special Scientific Interest (SSSI) notified under Section 28 of the
Wildlife and Countryside Act 1981 (as amended).**

Local Planning Authority: **Gloucestershire County Council
Forest of Dean District Council**

National Grid Reference: **SO 655 121
SO 662 104** Area: **5.66 ha 13.99 ac.**

Ordnance Survey Sheet 1:50,000: **162** **1:10,000: So 61SE**

Date Notified (Under 1949 Act): Date of Last Revision:

Date Notified (Under 1981 Act): **31 March 1998** Date of Last Revision:

Other Information:

1. New Site Notification
2. This site is one of a series of Sites of Special Scientific Interest within the Forest of Dean and Wye Valley (Gloucestershire and Monmouthshire) notified for the lesser and greater horseshoe bat populations. This suite of sites includes both breeding and hibernation roosts and contributes to the conservation of bat populations of European importance. Other sites which form part of this series in Gloucestershire include:

Breeding sites: Caerwood & Ashberry Goose House SSSI, Blaisdon Hall SSSI, Sylvan House Barn SSSI and Dean Hall Coach House and Cellar SSSI

Hibernation sites: Devil's Chapel Scowles SSSI, Old Bow & Old Ham Mines SSSI, Wigpool Ironstone Mine SSSI and Westbury Brook Ironstone Mine SSSI.

Description and Reasons for Notification:

The Forest of Dean and the Wye Valley form one of the main British strongholds for the lesser horseshoe bat *Rhinolophus hipposideros* and greater horseshoe bat *R. ferrumequinum*. Both of these species are rare and threatened due to the continuing loss of breeding and hibernation roosts and vital feeding areas and are protected under Schedule 5 of the Wildlife and

Countryside Act 1981. European legislation also makes provision for the protection of these species and their habitats through the Bern Convention and EC Habitats Directive.

In the Forest of Dean a ring of iron-ore bearing Carboniferous Limestone forms the focus of a series of ancient and more recent mines which provide hibernation sites for many species of bat. This site is composed of two separate locations one of which (Buckshraft Mine) lies on the eastern edge of this ring near the village of Ruspidge. The other location (Bradley Hill Railway Tunnel) lies near the village of Soudley one and a half kilometres to the south east.

This site is notified for its nationally important population of the greater horseshoe bats. A smaller number of lesser horseshoe bats also use the site. Local research has demonstrated that the greater horseshoe bats move between the two parts of the site and the nearby Dean Hall Coach House and Cellar SSSI to the north.

Buckshraft Mine was an active ironstone mine in the 19th Century and early to mid parts of the 20th Century. The entrance shaft follows the steep slope of the rock strata extending to a depth of more than 150 metres and leads into over one kilometre of tunnels and workings.

The mine is a very important hibernation location for greater horseshoe bats within the Forest of Dean and supports up to two thirds of the juvenile population from the Dean Hall SSSI in winter. Research has also demonstrated that greater horseshoe bats from the other Gloucestershire breeding roost at Woodchester Park SSSI which is at least 15 kilometres away come to the mine to hibernate.

The wide range of underground micro-climates sought by the bats are dependent on the ventilation, humidity and temperature of the mine system. This is, in part, influenced by the surface woodlands which act as wind breaks. The woodlands also provide feeding habitats for the bats and are important in ensuring a readily available food source of insects. This feature is particularly important in spring when the bats need to build fat reserves quickly to ensure a successful breeding season.

Bradley Hill Railway Tunnel is a dis-used tunnel which formed part of a link between the Forest of Dean and the Severn Estuary villages and towns to the south-east. The stone and brick lined tunnel is a quarter of a kilometre in length and is partly bricked up at each entrance. A two metre gap in the brickwork at the top of each entrance forms the main access to the site for bats.

The tunnel is used primarily in spring by greater horseshoe bats as a transition roost before the bats move to the Dean Hall SSSI breeding roost. Smaller numbers also use the site in autumn in advance of moving to Buckshraft Mine as the tunnel temperature is generally too low to support mid-winter hibernation. Based on the maximum recorded count the tunnel supports up to one third of the breeding population of the Dean Hall SSSI.

COUNTY: GLOUCESTERSHIRE SITE NAME: OLD BOW AND OLD HAM MINES

DISTRICT: FOREST OF DEAN SITE REF: 2000187

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority: GLOUCESTERSHIRE COUNTY COUNCIL, Forest of Dean District Council

National Grid Reference: SO 579088 Area: 40.3 (ha.) 99.58 (ac.)

Ordnance Survey Sheet 1:50,000: 162 1:10,000: SO 50 NE

Date Notified (Under 1949 Act): – Date of Last Revision: –

Date Notified (Under 1981 Act): 31 March 1998 Date of Last Revision: –

Other Information:

1. New Site Notification.
2. This site is one of a series of Sites of Special Scientific Interest within the Forest of Dean and Wye Valley (Gloucestershire and Monmouthshire) notified for the lesser and greater horseshoe bat populations. This suite of sites includes both breeding and hibernation roosts and contributes to the conservation of bat populations of European importance. Other sites which form part of this series in Gloucestershire include:
Breeding sites: Caerwood & Ashberry Goose House SSSI, Blaisdon Hall SSSI, Sylvan House Barn SSSI and Dean Hall Coach House and Cellar SSSI
Hibernation sites: Devil's Chapel Scowles SSSI, Bucksrafft Mine & Bradley Hill Railway Tunnel SSSI, Wigpool Ironstone Mine SSSI and Westbury Brook Ironstone Mine SSSI.
3. The mines are subject to the Awards of Mines (Act) 1841. This contains the rules governing the practice of the rights of the traditional Free Miners of the Forest of Dean.

Description and Reasons for Notification:

The Forest of Dean and the Wye Valley form one of the main British strongholds for the lesser horseshoe bat *Rhinolophus hipposideros* and greater horseshoe bat *R. ferrumequinum*. Both of these species are rare and threatened due to the continuing loss of breeding and hibernation roosts and vital feeding areas and are protected under Schedule 5 of the Wildlife and Countryside Act 1981. European legislation also makes provision for the protection of these species and their habitats through the Bern Convention and EC Habitats Directive.

In the Forest of Dean a ring of iron-ore bearing Carboniferous Limestone forms the focus of a series of ancient and more recent mines which provide hibernation sites for many species of bat. This site is composed of an extensive area of underground mine workings on the western edge of the Forest of Dean near the village of Clearwell. The site includes parts of four mine systems (Clearwell, Old Bow, Lambsquay and Old Ham) some of which are interconnected. Entrance to the systems is via the grilled shafts at the outcrop edge. The combined length of tunnels and workings is estimated at more than 30 kilometres.

The site supports a nationally important hibernation roost for lesser horseshoe bats and a small number of greater horseshoe bats. It is a very important known hibernation site within Gloucestershire and the surrounding counties, regularly holding more than 300 lesser horseshoe bats. The site lies between eight and fourteen kilometres from the lesser

horseshoe breeding roosts at Sylvan House Barn SSSI, Caerwood and Ashberry Goose House SSSI and Blaisdon Hall SSSI.

Horseshoe bats use the caverns and tunnels in the winter, spring and autumn periodically moving between the various parts of the mine system to find ideal conditions in terms of temperature and humidity. The vast size and depth of the systems provide the wide range of underground microclimates required by the bats. The main entrances to the mine systems are surrounded by trees which act as wind breaks and also help maintain a stable ventilation regime underground.

Woodland cover above and adjacent to the mines provides vital feeding habitats for the bats and are important in ensuring a readily available food source of insects. This feature is particularly important in spring when the bats need to build fat reserves quickly to ensure a successful breeding season.

Part of the system at Clearwell Caves is in regular use both commercially and for recreation. Public access to showcaves with stalactites and crystal formations of calcite, dolomite and haematite occurs throughout the year and small quantities of iron ore, rock samples and natural pigments such as ochre are still mined by the mineral gale owner.

Other species which use the hibernacula include Daubenton's bat *Myotis daubentoni*, Brandt's bat *M. brandtii*, Natterer's bat *M. nattereri*, whiskered bat, *M. mystacinus* and long-eared bats *Plecotus auritus* which make use of the many crevices and rock piles throughout the system.

COUNTY: GLOUCESTERSHIRE

SITE NAME: WESTBURY BROOK
IRONSTONE MINE

DISTRICT: FOREST OF DEAN SITE REF: 2000188

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority: GLOUCESTERSHIRE COUNTY COUNCIL, Forest of Dean District Council

National Grid Reference: SO 662166

Area: 15.69 (ha.) 38.77 (ac.)

Ordnance Survey Sheet 1:50,000: 162

1:10,000: SO 61 NE

Date Notified (Under 1949 Act): –

Date of Last Revision: –

Date Notified (Under 1981 Act): 31 March 1998

Date of Last Revision: –

Other Information:

1. New Site Notification.
2. Edgehills Quarry SSSI (a geological exposure site) overlaps the underground boundary of this site.
3. This site is one of a series of Sites of Special Scientific Interest within the Forest of Dean and Wye Valley (Gloucestershire and Monmouthshire) notified for the lesser and greater horseshoe bat populations. This suite of sites includes both breeding and hibernation roosts and contributes to the conservation of bat populations of European importance. Other sites which form part of this series in Gloucestershire include:
 - Breeding sites: Caerwood & Ashberry Goose House SSSI, Blaisdon Hall SSSI, Sylvan House Barn SSSI and Dean Hall Coach House and Cellar SSSI.
 - Hibernation sites: Buckshraft Mine & Bradley Hill Railway Tunnel SSSI, Old Bow & Old Ham Mines SSSI, Wigpool Ironstone Mine SSSI and Devil's Chapel Scowles SSSI.

COUNTY: GLOUCESTERSHIRE SITE NAME: WIGPOOL IRONSTONE MINE

DISTRICT: FOREST OF DEAN SITE REF: 2000191

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority: GLOUCESTERSHIRE COUNTY COUNCIL, Forest of Dean District Council

National Grid Reference: SO 654197 Area: 34.88 (ha.) 94.99 (ac.)

Ordnance Survey Sheet 1:50,000: 162 1:10,000: SO 61 NW, SO 61 NE

Date Notified (Under 1949 Act): – Date of Last Revision: –

Date Notified (Under 1981 Act): 31 March 1998 Date of Last Revision: –

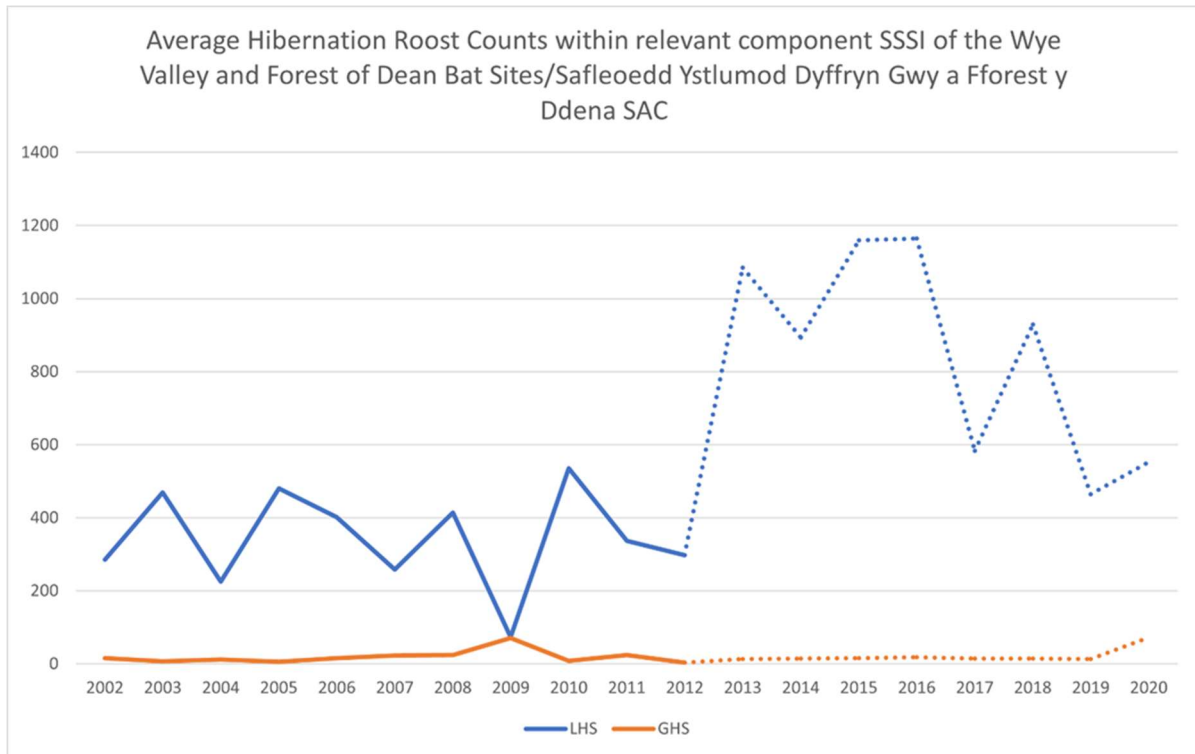
Other Information:

1. New Site Notification.
2. This site is one of a series of Sites of Special Scientific Interest within the Forest of Dean and Wye Valley (Gloucestershire and Monmouthshire) notified for the lesser and greater horseshoe bat populations. This suite of sites includes both breeding and hibernation roosts and contributes to the conservation of bat populations of European importance. Other sites which form part of this series in Gloucestershire include:
 - Breeding sites: Caerwood & Ashberry Goose House SSSI, Blaisdon Hall SSSI, Sylvan House Barn SSSI and Dean Hall Coach House and Cellar SSSI.
 - Hibernation sites: Buckshraft Mine & Bradley Hill Railway Tunnel SSSI, Old Bow & Old Ham Mines SSSI, Devil's Chapel Scowles SSSI and Westbury Brook Ironstone Mine SSSI.
3. The mine is subject to the Awards of Mines (Act) 1841. This contains the rules governing the practice of the rights of the traditional Free Miners of the Forest of Dean.

Forest of Dean Bat SSSI Management Plan 2022 - 2032

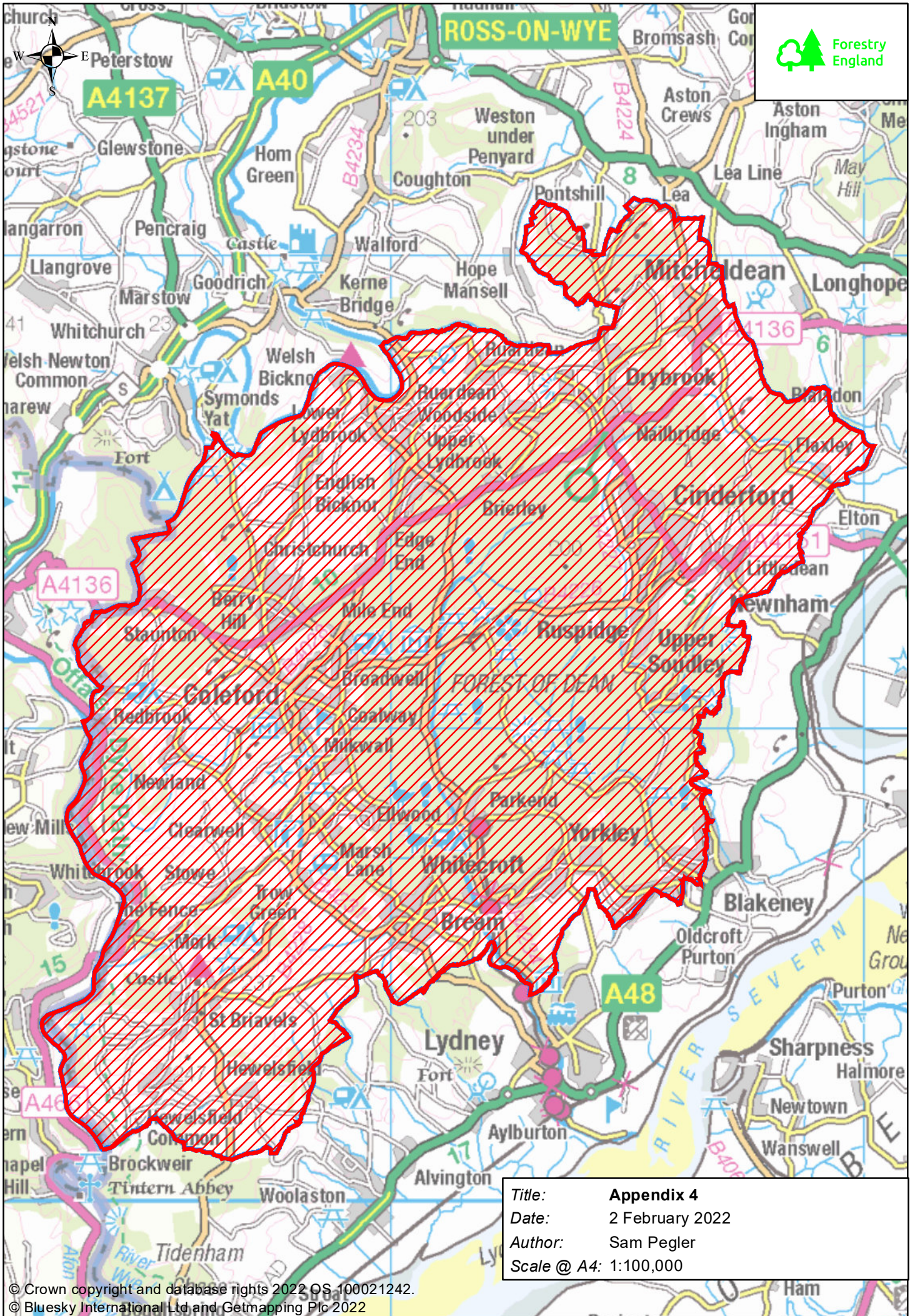
Appendix 3: Average Hibernation Roost Counts within relevant component SSSI of the Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC

*Note - 2012 - 2020 data is for Old Bow and Old Ham Mines SSSI only (indicated by dotted line)



Forest of Dean Bat SSSI Management Plan 2022 - 2032

Appendix 4: Map detailing the extents of the Hundred of St. Briavels

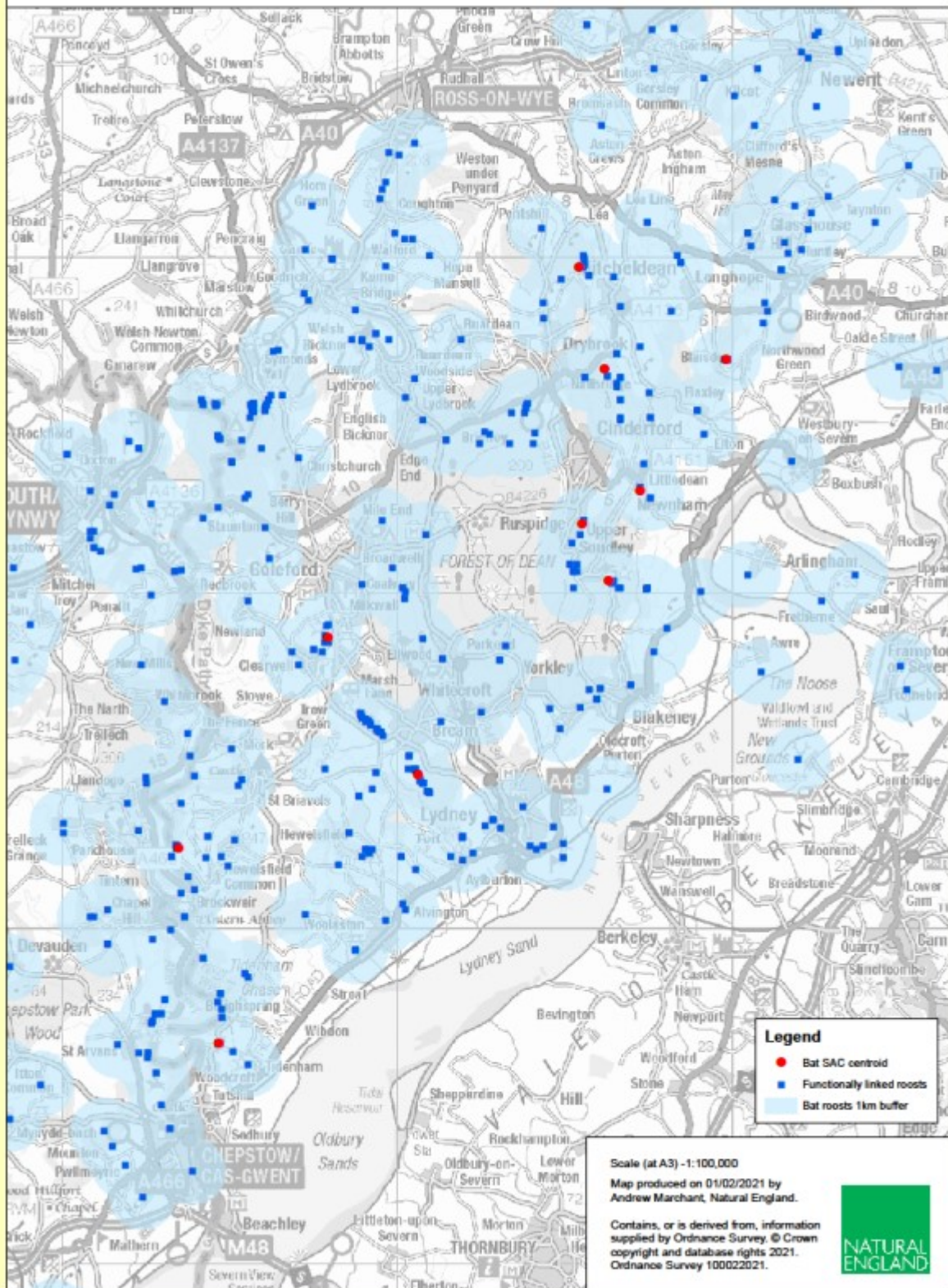


Title: **Appendix 4**
 Date: 2 February 2022
 Author: Sam Pegler
 Scale @ A4: 1:100,000

Forest of Dean Bat SSSI Management Plan 2022 - 2032

Appendix 5: Records of non-SSSI sites for horseshoe bats in the Wye Valley and Forest of Dean, taken from "*Greater & Lesser Horseshoe Bat Site Inventory for the Wye Valley & Forest of Dean*" and "*Wye Valley and Forest of Dean Bat SAC Development Management - Horseshoe Bat activity survey and assessment guidance*" (Natural England, 2021)

Wye Valley Bat SAC Sites and functionally linked roosts



Forest of Dean Bat SSSI Management Plan 2022 - 2032

Appendix 6: Habitats Regulations Assessment for relevant FP

APPROPRIATE ASSESSMENT UNDER REGULATION 48 OF 1994 HABITATS REGULATIONS AND HABITATS DIRECTIVE (Council Directive 92/43/EEC)

International Nature Conservation Site:

Wigpool Ironstone Mine SSSI (part of Wye Valley & Forest of Dean Bat SAC)

Date of Appropriate Assessment: 07/03/2011

Title of Plan or Project: Wigpool Forest Design Plan (FDP) 2010 - 2020

Operation Likely to Damage (OLD) reference no:

10: The killing or removal of any wild animal *, including pest control (squirrel control)

12: Tree and/or woodland management, including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in the species composition. (Applies only to surface & underground boundary area)

20: The extraction of minerals

26: The use of vehicles, machinery or other devices likely to produce noise, fumes or heat near to the bat roosting areas or access points (forestry harvesting machinery)

27: Recreational activities likely to cause disturbance to roosting bats

Description of Plan or Project:

Wigpool FDP is a plan for woodland management and includes details of areas of woodland that will be thinned and felled over the period of the plan. The FDP proposes that the woodland area on and around the SSSI is thinned at intervals of five years for conifer and ten years for broadleaved crops. In addition 5.7ha of conifers are identified for felling and conversion to lowland heathland by 2021

Location of Plan or Project: Wigpool FDP covers all of SSSI units 1 and 2

Unit 1 covers an area of beech and oak woodland, mine shafts, mine entrances and all connected subterranean workings and voids.

Unit 2 includes all connected subterranean shafts, workings and voids below the rock head (the point at which the soil layers meet bedrock)

This is a record of the appropriate assessment, required by Regulations 20 of the Habitats Regulations 1994, undertaken by Forestry Commission England in respect of the above plan/project, in accordance with the Habitats Directive (Council Directive 92/43/EEC).

It is not considered that the woodland management proposals contained in the Wigpool Forest Design Plan (2010 - 2020) would be likely to have a significant effect on the Wye Valley & Forest of Dean Bat SAC.

Consultation: Discussion of the proposed operations has been held with:

Natural England 9 November 2001 - the original version of the FDP. Proposals around the SSSI remained unaltered when the plan was reviewed in 2010.

Forestry Commission England (Grants & Regulations) 12 November 2009

1. Are the operations directly connected with or necessary to the management of the European site for nature conservation?

If YES – The notice may be dealt with having taken the SSSI into account in the usual way

If NO - See 2.

No. The operations are part of the ongoing sustainable management of the woodland.

2. Are the operations (either alone or in combination with other consent/assents) likely to have a significant effect on the European site?

If YES – An appropriate assessment must be carried out, see 3.

If NO – The notice may be dealt with having taken the SSSI into account in the usual way

No. Control of squirrels by cage-trapping will have no impact on hibernating bats or the value of the woodland site as a feeding area for bats when they emerge from hibernation.

The woodland management operations proposed by the Wigpool FDP will not have an adverse impact on the integrity of the site. The FDP has recognised the importance of the need to maintain adequate woodland cover on and around the SSSI and connectivity with the wider woodland environment. Trees immediately adjacent to the site entrances will be retained. All of the woodland on unit 1 and much of the woodland on unit 2 will be retained and managed as continuous cover. The thinning operations proposed are at a frequency that will not significantly reduce tree canopy coverage. This will ensure long-term woodland connectivity between the site and the wider woodland. Where the lan has identified clear-felling options, there are adequate woodland retentions that bats can use as flight

As the mine is in gale, Forestry Commission England has no control over the extraction of minerals. This should be covered by an agreement between the galeholder and Natural England. In reality the area is not worked for minerals. The use of forestry machinery to harvest and extract timber close to the site's entrance shafts is at such a low intensity and frequency that the impact on bats hibernating within the underground workings will be negligible.

The entrances to the underground workings are secured to prevent unauthorised access. Access to the workings is under the control of the gale-holder and Forest of Dean Caving and Conservation Access Group.

Counts of hibernating horseshoe bats within the SSSI have shown an increasing trend over the last ten years indicating that the management of the site and surrounding woodland is benefitting the horseshoe bat population.

3. The appropriate assessment has been carried out on the basis of the nature conservation objective of the European Site. The assessment concluded that:

3a. The plan or project would not adversely affect the integrity of the site, see 4a.

3b. It is not possible to ascertain that the plan or project would not adversely affect the integrity of the site, see 4b.

Wigpool FDP will not adversely affect the integrity of the site.

4a. The notice may be dealt with having taken the SSSI into account in the usual way.

4b. Is it possible to impose conditions that will enable a conclusion of no adverse effect on the integrity of the site?

If YES – Impose conditions and deal with the notice in the usual way

If NO – Do not consent/assent the operations in the notice.

Forestry Commission staff will advise Natural England before undertaking work within the SSSI area & consult Natural England when the FDP is reviewed. Thinning & felling operations on or close to the SSSI will whenever possible be undertaken at times other than the spring & autumn months when bats are likely to be leaving or returning to the roost site. Where possible, work will also avoid periods of warmer weather during the winter months when bats may become active. Changes to the FDP may require this assessment to be updated.

Signed: P Kelsall (Planning Forester)

Date: 07/03/2011

Assessment undertaken as part of Forest of Dean Bat SSSI Management Plan review

APPROPRIATE ASSESSMENT UNDER REGULATION 48 OF 1994 HABITATS REGULATIONS AND HABITATS DIRECTIVE (Council Directive 92/43/EEC)

International Nature Conservation Site:

Westbury Brook Ironstone Mine SSSI (part of Wye Valley & Forest of Dean Bat SAC)

Date of Appropriate Assessment: 07/03/2011

Title of Plan or Project: Haywood & Edgehills Forest Design Plan (FDP) 2005 - 2015

Operation Likely to Damage (OLD) reference no:

12: Tree and/or woodland management, including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in the species composition. (Applies only to surface & underground boundary area)

26: The use of vehicles, machinery or other devices likely to produce noise, fumes or heat near to the bat roosting areas or access points (forestry harvesting machinery)

Description of Plan or Project:

Haywood & Edgehills FDP is a plan for woodland management and includes details of areas of woodland that will be thinned and felled over the period of the plan. The FDP proposes that the woodland area on and around the SSSI is thinned at intervals of five years for conifer and ten years for broadleaved crops. In addition 1.1ha of conifers are identified for felling and conversion to lowland heathland by 2016

Location of Plan or Project: Haywood & Edgehills FDP covers all of SSSI units 1 and 2

Unit 1 includes all connected subterranean shafts, workings and voids below the rock head (the point at which the soil layers meet bedrock)

Unit 2 covers the scowle and surrounding trees where the entrance to the mine is located, mine shafts, mine entrances and all connected subterranean workings and voids.

This is a record of the appropriate assessment, required by Regulations 20 of the Habitats Regulations 1994, undertaken by Forestry Commission England in respect of the above plan/project, in accordance with the Habitats Directive (Council Directive 92/43/EEC).

It is not considered that the woodland management proposals contained in the Haywood & Edgehills Forest Design Plan (2005 - 2015) would be likely to have a significant effect on the Wye Valley & Forest of Dean Bat SAC.

Consultation: Discussion of the proposed operations has been held with:

Natural England 11 May 2005 - the original version of the FDP.

Natural England 19 July 2010 – FDP review proposals

Forestry Commission England (Grants & Regulations) 18 October 2010

1. Are the operations directly connected with or necessary to the management of the European site for nature conservation?

If YES – The notice may be dealt with having taken the SSSI into account in the usual way

If NO - See 2.

No. The operations are part of the ongoing sustainable management of the woodland.

2. Are the operations (either alone or in combination with other consent/assents) likely to have a significant effect on the European site?

If YES – An appropriate assessment must be carried out, see 3.

If NO – The notice may be dealt with having taken the SSSI into account in the usual way

No. The woodland management operations proposed in the Haywood & Edgehills FDP will not have an adverse impact on the integrity of the site. The FDP has recognised the importance of the need to maintain adequate woodland cover on and around the SSSI and connectivity with the wider woodland environment. Trees immediately adjacent to the site entrance will be retained and none of the woodland on unit 2 will be thinned or felled.

The thinning operations proposed are at a frequency that will not significantly reduce tree canopy coverage. This will ensure long-term woodland connectivity between the site and the wider woodland. Where the plan has identified clearfelling options, there are adequate woodland retentions that bats can use as flight lines.

Forestry machinery used to harvest and extract timber does not need to operate close to the site's entrance shaft as there will be little active woodland management around the immediate area of the mine entrance.

Counts of hibernating horseshoe bats within the SSSI have shown an increasing trend over the last ten years indicating that the management of the site and surrounding woodland is not having an adverse impact on the horseshoe bat population.

3. The appropriate assessment has been carried out on the basis of the nature conservation objective of the European Site. The assessment concluded that:

3a. The plan or project would not adversely affect the integrity of the site, see 4a.

3b. It is not possible to ascertain that the plan or project would not adversely affect the integrity of the site, see 4b.

Haywood & Edehills FDP will not adversely affect the integrity of the site.

4a. The notice may be dealt with having taken the SSSI into account in the usual way.

4b. Is it possible to impose conditions that will enable a conclusion of no adverse effect on the integrity of the site?

If YES – Impose conditions and deal with the notice in the usual way If NO – Do not consent/assent the operations in the notice.

Forestry Commission staff will advise Natural England before undertaking work within the SSSI area & consult Natural England when the FDP is reviewed. Thinning & felling operations on or close to the SSSI will whenever possible be undertaken at times other than the spring & autumn months when bats are likely to be leaving or returning to the roost site. Where possible, work will also avoid periods of warmer weather during the winter months when bats may become active. Changes to the FDP may require this assessment to be updated.

Signed: P Kelsall (Planning Forester)

Date: 07/03/2011

Assessment undertaken as part of Forest of Dean Bat SSSI Management Plan review

APPROPRIATE ASSESSMENT UNDER REGULATION 48 OF 1994 HABITATS REGULATIONS AND HABITATS DIRECTIVE (Council Directive 92/43/EEC)

International Nature Conservation Site:

Old Bow & Old Ham Mines SSSI (part of Wye Valley & Forest of Dean Bat SAC)

Date of Appropriate Assessment: 07/03/2011

Title of Plan or Project: Bromley Forest Design Plan (FDP) 2009 - 2019

Operation Likely to Damage (OLD) reference no:

12: Tree and/or woodland management, including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in the species composition. (Applies only to surface & underground boundary area)

20 The extraction of minerals

27 Recreational activities likely to cause disturbance to roosting bats

Description of Plan or Project:

Bromley FDP is a plan for woodland management and includes details of areas of woodland that will be thinned and felled over the period of the plan. The FDP proposes that the woodland area on and around the SSSI is thinned at intervals of five years for conifer and ten years for broadleaved crops. Broadleaved crops will be managed on a continuous cover basis.

Location of Plan or Project: Bromley FDP covers the southern part of unit 1 of the SSSI

Unit 1 includes all connected subterranean shafts, workings and voids below the rock head (the point at which the soil layers meet bedrock)

This is a record of the appropriate assessment, required by Regulations 20 of the Habitats Regulations 1994, undertaken by Forestry Commission England in respect of the above plan/project, in accordance with the Habitats Directive (Council Directive 92/43/EEC).

It is not considered that the woodland management proposals contained in the Bromley Forest Design Plan (2009 - 2019) would be likely to have a significant effect on the Wye Valley & Forest of Dean Bat SAC.

Consultation: Discussion of the proposed operations has been held with:

Gloucester County Council 11 November 2008

Forestry Commission England (Grants & Regulations) 22 January 2009

1. Are the operations directly connected with or necessary to the management of the European site for nature conservation?

If YES – The notice may be dealt with having taken the SSSI into account in the usual way

If NO - See 2.

No. The operations are part of the ongoing sustainable management of the woodland.

2. Are the operations (either alone or in combination with other consent/assents) likely to have a significant effect on the European site?

If YES – An appropriate assessment must be carried out, see 3.

If NO – The notice may be dealt with having taken the SSSI into account in the usual way

The woodland management operations proposed in the Bromley FDP will not have an adverse impact on the integrity of the site. The FDP has recognised the importance of the need to maintain adequate woodland cover on and around the SSSI and connectivity with the wider woodland environment. The thinning operations proposed are at a frequency that will not significantly reduce tree canopy coverage. This will ensure long-term woodland connectivity between the site and the wider woodland. Where the plan has identified clear-felling options, there are adequate woodland retentions that bats can use as flight lines.

As the mine is in gale, Forestry Commission England has no control over the extraction of minerals or the level of recreational use. This should be covered by an agreement between the gale-holder and Natural England.

Counts of hibernating horseshoe bats within the SSSI have shown an increasing trend over the last ten years indicating that the management of the site and surrounding woodland is not having an adverse impact on the horseshoe bat population.

3. The appropriate assessment has been carried out on the basis of the nature conservation objective of the European Site. The assessment (Table 1) concluded that:

3a. The plan or project would not adversely affect the integrity of the site, see 4a.

3b. It is not possible to ascertain that the plan or project would not adversely affect the integrity of the site, see 4b.

Bromley FDP will not adversely affect the integrity of the site.

4a. The notice may be dealt with having taken the SSSI into account in the usual way.

4b. Is it possible to impose conditions that will enable a conclusion of no adverse effect on the integrity of the site?

If YES – Impose conditions and deal with the notice in the usual way If NO – Do not consent/assent the operations in the notice.

Forestry Commission staff will advise Natural England before undertaking work within the SSSI area & consult Natural England when the FDP is reviewed. Thinning & felling operations on or close to the SSSI will whenever possible be undertaken at times other than the spring & autumn months when bats are likely to be leaving or returning to the roost site. Where possible, work will also avoid periods of warmer weather during the winter months when bats may become active. Changes to the FDP may require this assessment to be updated.

Signed: P Kelsall (Planning Forester)

Date: 07/03/2011

Assessment undertaken as part of Forest of Dean Bat SSSI Management Plan review

Habitats regulations assessment screening form: Parkend Walk and Blakeney Walk Forest Plan 2022 - 2032

European Protected Site type, name, and qualifying features

Project name	Parkend Walk and Blakeney Walk Forest Plan
Block name(s)	Blaize Bailey, Blakeney Hill, Staple Edge, Middleridge, Church Hill, Cockshoot and Oakenhill

Site type	Special Area of Conservation (SAC)
Site name	Wye Valley & Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC (UK0014794)
Associated Site of Special Scientific Interest (SSSI) and other site information	<p>England</p> <ul style="list-style-type: none"> • Blaisdon Hall SSSI • Buckshraft Mine and Bradley Hill Railway Tunnel SSSI • Caerwood and Ashberry Goose House SSSI • Dean Hall Coach House and Cellar SSSI • Devil's Chapel Scowles SSSI • Old Bow and Old Ham Mines SSSI • Sylvan House Barn SSSI • Westbury Brook Ironstone Mine SSSI • Wigpool Ironstone Mine SSSI <p>Wales</p> <ul style="list-style-type: none"> • Llangovan Church SSSI • Mwyngloddfa Mynydd-Bach SSSI

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	<ul style="list-style-type: none">• Newton Court Stable Block SSSI• Wye Valley Lesser Horseshoe Bat Sites SSSI (comprising 4 separate sites): Itton Court Stud; Penallt Old Church; Priory Llandogo; Tregeiriog Farm
Qualifying features	<ul style="list-style-type: none">• S1303. <i>Rhinolophus hipposideros</i>; Lesser horseshoe bat (LHS)• S1304. <i>Rhinolophus ferrumequinum</i>; Greater horseshoe bat (GHS)

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Site type	Special Area of Conservation (SAC)
Site name	Severn Estuary/Môr Hafren SAC (UK0013030)
Associated SSSI and other site information	<ul style="list-style-type: none"> • Gwent Levels - Nash and Goldcliff SSSI • Severn Estuary SSSI • Upper Severn Estuary SSSI • Middle Hope SSSI • River Wye (Lower Wye) SSSI • River Usk (Lower Usk) SSSI • Penarth Coast SSSI • Sully Island SSSI • Newport Wetlands SSSI • Bridgwater Bay SSSI • Gwent Levels - St. Brides SSSI • Gwent Levels - Whitson SSSI • Gwent Levels - Redwick and Llandevenny SSSI • Gwent Levels - Magor and Undy SSSI • Gwent Levels - Rumney and Peterstone SSSI
Qualifying features	<ul style="list-style-type: none"> • H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks • H1130. Estuaries • H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats • H1170. Reefs • H1330. Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>); Atlantic salt meadows • S1095. <i>Petromyzon marinus</i>; Sea lamprey • S1099. <i>Lampetra fluviatilis</i>; River lamprey • S1103. <i>Alosa fallax</i>; Twaite shad

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Site type	Special Protection Area (SPA)
Site name	Severn Estuary SPA
Associated SSSI and other site information	<ul style="list-style-type: none"> • River Wye (Lower Wye) SSSI • Steep Holm SSSI • Middle Hope SSSI • Upper Severn Estuary SSSI • Severn Estuary SSSI • Bridgwater Bay SSSI • Severn Estuary SSSI
Qualifying features	<ul style="list-style-type: none"> • A394(NB) <i>Anser albifrons albifrons</i>: Greater white-fronted goose • A037(NB) <i>Cygnus columbianus bewickii</i>: Bewick swan • A048(NB) <i>Tadorna tadorna</i>: Common shelduck • A051(NB) <i>Anas strepera</i>: Gadwall • A149(NB) <i>Calidris alpina alpina</i>: Dunlin • A162(NB) <i>Tringa totanus</i>: Common redshank

Site type	Ramsar Site
Site name	Severn Estuary
Associated SSSI and other site information	<ul style="list-style-type: none"> • River Wye (Lower Wye) SSSI • Steep Holm SSSI • Middle Hope SSSI • Upper Severn Estuary SSSI • Severn Estuary SSSI

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	<ul style="list-style-type: none"> • Bridgwater Bay SSSI • Severn Estuary SSSI
<p>Qualifying features</p>	<p>Ramsar criterion 1</p> <p>Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities. Habitats Directive Annex I features present on the SAC include:</p> <ul style="list-style-type: none"> • H1110 Sandbanks which are slightly covered by sea water all the time • H1130 Estuaries • H1140 Mudflats and sandflats not covered by seawater at low tide • H1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) <p>Ramsar criterion 3</p> <p>Due to unusual estuarine communities, reduced diversity and high productivity.</p> <p>Ramsar criterion 4</p> <p>This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon <i>Salmo salar</i>, sea trout <i>Salmo trutta</i>, sea lamprey, river lamprey, allis shad, twaite shad <i>Alosa fallax</i>, and eel <i>Anguilla anguilla</i>. It is also of particular importance for migratory birds during spring and autumn.</p> <p>Ramsar criterion 8</p> <p>The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon, sea trout, sea lamprey, river lamprey, allis shad, twaite shad, and eel use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad and twaite shad which feed on mysid shrimps in the salt wedge.</p>

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	<p>Ramsar criterion 5</p> <p>Assemblages of international importance:</p> <p>Species with peak counts in winter:</p> <ul style="list-style-type: none">• 70919 waterfowl (5 year peak mean 1998/99-2002/2003) <p>Ramsar criterion 6</p> <p>Species/populations occurring at levels of international importance.</p> <p>Qualifying Species/populations (as identified at designation):</p> <p>Species with peak counts in winter:</p> <ul style="list-style-type: none">• Tundra swan,• Greater white-fronted goose,• Common shelduck,• Gadwall,• Dunlin,• Common redshank, <p>Species/populations identified subsequent to designation for possible future consideration under criterion 6.</p> <p>Species regularly supported during the breeding season:</p> <ul style="list-style-type: none">• Lesser black-backed gull, <i>Larus fuscus graellsii</i>, <p>Species with peak counts in spring/autumn:</p>
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HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

	<ul style="list-style-type: none">• Ringed plover, <i>Charadrius hiaticula</i>, <p>Species with peak counts in winter:</p> <ul style="list-style-type: none">• Eurasian teal, <i>Anas crecca</i>• Northern pintail, <i>Anas acuta</i>
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Conservation Objectives

<p>Conservation Objectives for Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC</p>	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and • The distribution of qualifying species within the site.
<p>Conservation Objectives for Severn Estuary/Môr Hafren SAC</p>	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring the:</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.
<p>Conservation Objectives for Severn Estuary SPA</p>	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and,

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	<ul style="list-style-type: none">• The distribution of the qualifying features within the site.
Conservation objectives Severn Estuary Ramsar Site	No specific objectives stated, but the Severn Estuary Ramsar Site shares its habitats and species with those listed in the objectives for the Severn Estuary/Môr Hafren SAC and Severn Estuary SPA above.

HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

Proposed Operations

<p>1. What operations are proposed as part of this project?</p>	<p>The Parkend Walk and Blakeney Walk Forest Plan includes the proposed woodland management of approximately 2,587ha of the Forest of Dean from 2021 to 2031.</p> <p>Woodland management will include forestry actions such as thinning, clear-felling, restocking and extraction. The forestry operations will include the use of various forestry machinery and will involve the maintenance of forest infrastructure. Additional activities will include (but not be limited to) coppicing, management of riverine corridors and maintenance of open habitats.</p> <p>Full details of the proposed operations are included within the Parkend Walk and Blakeney Walk Forest Plan (attached).</p> <p>Specific management that will involve the component SSSI of Wye Valley & Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC is detailed below; full details are available within the Forest of Dean Bat SSSI Management Plan 2021-2031 (attached):</p> <p>Wigpool Ironstone Mine SSSI</p> <p><u>Underground</u></p> <p>Working/mining practices will continue within the mine at existing levels. A separate Site Management Statement has been agreed between Natural England and the Freeminers.</p> <p>The existing level of cave access provision and access control arrangements will be maintained to minimise disturbance to bats.</p>
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HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

	<p><u>Surface</u></p> <p>Maintain the existing access points through the main entrances preventing blockage or closure through natural rock falls or the dumping of materials. The safety fencing that is currently in place around the existing access points will be replaced following the planned thinning of the surrounding areas in 2021 (please see below).</p> <p>Woodland cover immediately surrounding the mine entrances and linkage to the wider woodland will be maintained.</p> <p>The broadleaved woodland within the extent of Wigpool Ironstone Mine SSSI will be managed on a continuous cover basis with no intention to clear-fell large areas. Thinning operations will continue at approximately ten-year intervals with the intention of removing up to 20-30% canopy cover. Much of the area was thinned in 2011 and the next thinning is programmed for late 2021.</p> <p>The Norway spruce <i>Picea abies</i> crop on the north-west quarter of Wigpool Ironstone Mine SSSI is planned to be clear-felled in winter 2028-29. The extents of the clear-fell will be determined in part by a review of the adjacent lowland heathland restoration project.</p> <p>The proposed extension of the lowland heathland to the west of Wigpool Ironstone Mine SSSI is currently on hold and will be reviewed in 2022. The review will include an assessment of the use of the existing woodland edge and lowland heathland by bat species to consider the potential effects of extending the area of lowland heathland. Any lowland heathland conversion will ensure that appropriate retentions are maintained when crops are cleared to provide access to the wider woodland to the west. The results of this review and any subsequent management will be</p>
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HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

	<p>communicated to Natural England as part of a separate consent and form an update to this HRSA once available.</p> <p>Westbury Brook Ironstone Mine SSSI</p> <p><u>Underground</u></p> <p>Other than annual monitoring, no work within the underground sections of Westbury Brook Ironstone Mine SSSI is currently planned.</p> <p><u>Surface</u></p> <p>The entrance will be monitored to ensure that access to the mine is not obstructed either through natural collapses or dumping of materials.</p> <p>Woodland cover immediately around the entrance will be maintained.</p> <p>An area of Corsican pine <i>Pinus nigra</i> west of the mine was felled in 2016 and converted to lowland heathland. Although the conversion to lowland heathland created a relatively large area of open ground, wooded links to the west were maintained.</p> <p>Thinning operations on part of Westbury Brook Ironstone Mine SSSI were undertaken in 2017 and further thinning is scheduled for late 2022.</p> <p>Whenever possible thinning and felling operations will be timed to avoid the autumn and spring months when bats are likely to be entering or leaving the site to minimise disruption to their navigation. Whenever possible work during warmer winter months when bats may become active will also be avoided.</p>
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HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

	<p>Buckshraft Ironstone Mine & Bradley Hill Railway Tunnel SSSI</p> <p><u>Underground</u></p> <p>Other than annual monitoring, no work within the underground sections of Buckshraft Ironstone Mine & Bradley Hill Railway Tunnel SSSI is currently planned.</p> <p><u>Surface</u></p> <p>The existing access points to both sites will be maintained in their current condition. The impact of garden lighting in neighbouring properties will be monitored.</p> <p>The area of Corsican pine around Buckshraft Ironstone Mine entrance will be managed as minimum intervention to promote natural regeneration of broadleaved species following the heavy thinning in 2013. A small section of Corsican pine in the north-western corner of the woodland will be removed and replanted with broadleaved species. The area is approximately 0.1ha and currently lacks diversity in structure and species composition. Removal of the Corsican pine will provide an opportunity for small scale structural change and an increased diversity. Due to the location of the Corsican pine between two paths on the edge of the woodland it is envisaged that removal can be achieved without collateral damage. Connectivity and continuity of habitat would be retained and the transition to broad leaved species would provide a net benefit to the surrounding woodland.</p> <p>Areas of broadleaves will generally be managed on a continuous cover basis without clear-felling. The broadleaved areas around Buckshraft Ironstone Mine and Bradley Hill Railway Tunnel SSSI will be thinned in 2022 to remove sweet chestnut <i>Castanea sativa</i> infected with 'ink disease' (caused by <i>Phytophthora cinnamomi</i> and <i>Phytophthora cambivora</i>). The on-going deterioration of sweet chestnut in the area may necessitate larger extents of removal in the future, however the specifics of</p>
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HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

	<p>any management will be informed by the progress of the disease. Any deviation from the planned thinning will be agreed with Natural England prior to works commencing. Broadleaves will be managed on a continuous cover basis without clear-felling.</p> <p>The broadleaved woodland around Bradley Hill tunnel will be managed as continuous cover woodland. Management intensity will be low.</p> <p>Old Bow & Old Ham Mines SSSI</p> <p><u>Underground</u></p> <p>As the underground section of Old Bow and Old Ham Mines SSSI is in gale, Forestry England has no control over the mine management and its operation. This is covered separately by an agreement between Natural England and the mine operator.</p> <p><u>Surface</u></p> <p>The land south of Lambsquay Road that is under Forestry England ownership is currently managed as broadleaved shelterwood, mature retained habitat and open space.</p> <p>Open land is managed as heathland or calcareous grassland vegetation communities. Large proportions of these areas have been historically covered in bracken, therefore management is focussed on control of bracken and scrub to maintain the features of interest.</p> <p>The areas of broadleaved shelterwood will be thinned in 2021/2022 in order to allow space for crown development and to increase the heterogeneity of the woodland structure. The thinning is considered to be beneficial to the woodland structure and the overall woodland cover will be maintained.</p>
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	<p>General</p> <p>Whenever possible thinning and felling operations within the component SSSI will be timed to avoid the autumn and spring months when bats are likely to be entering or leaving the site to minimise disruption to their navigation. Whenever possible work during warmer winter months when bats may become active will also be avoided.</p>
<p>2. How will these operations be carried out?</p>	<p>All operations will be undertaken under best practice guidelines (UKWAS etc.) and will be preceded by an Operational Site Assessment.</p>

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Exempt Works Test

1. Are the operations proposed in this project already covered by a plan agreed with Natural England?	No
<i>If yes, which agreed plans cover the designated area?</i>	N/A
2. If no, are operations directly connected with or necessary for maintaining the site's listed features?	No; specific management operations will be undertaken for the benefit of component SSSI of Wye Valley & Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC, however the majority of operations detailed within the Parkend Walk and Blakeney Walk Forest Plan will not be specifically for the benefit of the sites listed above.

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Significant Effect Test

All operations on Forestry England land are carried out to standards defined in the following documents:

- UK Forestry Standard
- UK Woodland Assurance Scheme
- European Protected Species Regulations
- Forest Industry Safety Accord
- Heather and Grass Burning Code 2007

<p>In addition to being UKFS/UKWAS compliant, and with reference to the potential impacts and risk framework listed in the tables below, are these operations likely to have a significant adverse effect on the qualifying features?</p>	<p>Severn Estuary/Môr Hafren SAC/Severn Estuary SPA/Severn Estuary Ramsar</p>	<p>The Parkend Walk and Blakeney Walk Forest Plan includes waterbodies that are hydrologically linked to the Severn Estuary/Môr Hafren SAC/Severn Estuary SPA/Severn Estuary Ramsar Site (hereafter referred to collectively as the Severn Estuary). These watercourses are the Cannop Brook, The Lyd, Blackpool Brook, Cinderford Brook, Soudley Brook & Forge Brook (hereafter collectively referred to as ‘the waterbodies’). The Parkend Walk and Blakeney Walk Forest Plan area is approximately 5.5km upstream of the Severn Estuary at its closest point. The potential for a significant change to water quality or water resource (including one-off pollution events) within any waterbody is considered to be negligible when considered against compliance with the best practice measures detailed above (UKWAS/UKFS etc.).</p> <p>The Parkend Walk and Blakeney Walk Forest Plan area is approximately 2.5km from the Severn Estuary. No significant indirect effects (such as changes to air quality, noise or visual disturbance) to the Severn Estuary are predicted as a result of the Parkend Walk and Blakeney Walk Forest Plan when considered against the standard best practice measures detailed above.</p>
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		<p>Primary habitat for the bird species listed as designative features for the Severn Estuary are considered to be coastal grazing marsh; pools; sandbanks; intertidal mud and sand; saltmarsh; shallow water; intertidal; estuary^{1,2}. These habitat types within the catchment of the Severn Estuary are considered potential functionally linked habitat.</p> <p>The habitats within the Parkend Walk and Blakeney Walk Forest Plan area are predominantly comprised of conifer woodland and broadleaved woodland, with limited areas of open habitat such as heathland located within larger woodland blocks.</p> <p>No functionally linked habitat for bird assemblages associated with the Severn Estuary is considered to be present within the Parkend Walk and Blakeney Walk Forest Plan area, based on current habitat mapping of the habitats listed as primary habitat above³. The closest records of these primary habitats are approximately 2.5km from the Parkend Walk and Blakeney Walk Forest Plan area. The potential for a significant effect to any species using these areas is considered negligible when considered against best practice measures (please see above).</p> <p>Hydrologically linked tributaries that have potential to support juvenile river lamprey and sea lamprey are present within the Parkend Walk and Blakeney Walk Forest Plan area. The waterbodies within the Parkend Walk and Blakeney Walk Forest Plan area are considered functionally linked habitat for river lamprey and sea lamprey in addition to the hydrological water quality and resource factors considered above. All operations will be conducted in line with best practice</p>
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¹ <https://asera.org.uk/features/birds/>, accessed on 07/12/2021

² Robinson, R.A. (2005) BirdFacts: profiles of birds occurring in Britain & Ireland. BTO, Thetford (<http://www.bto.org/birdfacts>, accessed on 07/12/2021)

³ Natural England, Priority Habitat Inventory (England), updated 07/12/2021, accessed at www.magic.defra.gov.uk/magicmap.aspx on 07/12/2021

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		<p>measures detailed above, including the UK Forest Standard Guidelines for Water. Operations planned within 10-20m of individual watercourses are restricted to water improvement and buffering works depending on the location (see Parkend Walk and Blakeney Walk Forest Plan for full details). No significant negative effects to the hydrologically linked watercourses within the Parkend Walk and Blakeney Walk Forest Plan area are predicted.</p> <p>Proposals within the Parkend Walk and Blakeney Walk Forest Plan include measures to enhance riverine corridors for all watercourses. These will ensure natural features, processes and habitats are delivered that will provide protection from natural hazards such as flooding, soil erosion and help in protecting the needs of aquatic species. One notable proposal included within the Parkend Walk and Blakeney Walk Forest Plan is the enhancement of the Foxes Bridge Bog. Foxes Bridge Bog is an area of degraded bog that is proposed to be restored as part of the Forest Waters Project. The restoration of Foxes Bridge Bog will include clear-felling of conifers, restriction of waterflow through drains and planting of appropriate native species (such as alder, aspen and willow species). The extension of wet woodland, marsh and bog in the Foxes Bridge Bog area will greatly enhance the diversity and resilience of the headwater of the Blackpool Brook. These enhancement measures have potential to increase the value of these watercourses to all riverine species including juvenile river lamprey and sea lamprey.</p> <p>Twaite shad are typically associated with larger watercourses over 10m wide, such as the River Wye and River Severn⁴. No suitable habitat for twaite shad is</p>
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⁴ Maitland PS & Hatton-Ellis TW (2003). Ecology of the Allis and Twaite Shad. Conserving Natura 2000 Rivers Ecology Series No. 3. English Nature, Peterborough

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		<p>considered to be present within the Parkend Walk and Blakeney Walk Forest Plan area.</p> <p>No Likely Significant Effects to Severn Estuary/Môr Hafren SAC/Severn Estuary SPA/Severn Estuary Ramsar Site are predicted as part of the proposals within the Parkend Walk and Blakeney Walk Forest Plan.</p>
	<p>Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC</p>	<p>The Parkend Walk and Blakeney Walk Forest Plan includes management of habitat that is included within the Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC. The Core Sustainance Zones (CSZ) of GHS and LHS are 3km and 2km respectively⁵. These CSZ and the maternity buffers described in the interim guidance published by Natural England⁶ (GHS, 2-4km and LHS 3km) are considered to be functionally linked habitat. The CSZ of GHS and LHS populations using the component SSSI of the Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC includes the majority of the Parkend Walk and Blakeney Walk Forest Plan as indicated in Map 3, Appendix A.</p> <p>All proposed management of component SSSI is included within the Forest of Dean Bat SSSI Management Plan 2021-2031 (attached). Any works proposed within or directly adjacent to any component SSSI will be undertaken to maintain and enhance the relevant habitat areas. All operational work will be undertaken as per best practice guidelines outlined above.</p> <p>The Parkend Walk and Blakeney Walk Forest Plan includes extensive provision to increase and enhance connectivity for bats and other protected species on a</p>

⁵ BCT (2020) Core Sustainance Zones and habitats of importance for designing Biodiversity Net Gain for bats. Bat Conservation Trust, London. <https://www.bats.org.uk/resources/guidance-for-professionals/bat-species-core-sustainance-zonesand-habitats-for-biodiversity-net-gain> Access on 07/12/2021

⁶ Natural England, July 2021, Interim Guidance; Wye Valley and Forest of Dean Bat SAC Development Management - Horseshoe Bat activity survey and assessment guidance,

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		<p>landscape scale. The management proposals specifically considered the Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC and associated bat populations to ensure key commuting and foraging habitats are maintained and enhanced. No major changes to habitats are included within the Parkend Walk and Blakeney Walk Forest Plan and all work will be undertaken in line with best practice guidelines (please see above).</p> <p>The proposed management is a continuation of existing Forest Plans that have been in place during an average increase in both GHS and LHS populations within the relevant component SSSI of the Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC since 2010⁷. It should however be noted that, at the time of writing, the only complete monitoring dataset available to Forestry England between 2012 and 2021 for the relevant SSSI was for Old Bow and Old Ham Mines SSSI.</p> <p>Populations of both GHS and LHS were observed to decline within Old Bow and Old Ham Mines SSSI during 2017, 2019 and 2021 when compared to recent years, however this was attributed to unseasonal cold weather in late Spring that caused increased mortality and reduced breeding success across numerous species groups^{8,9}. The population counts between 2012 and 2021 still show an average increase on the period 2002-2012 (see Figure 1, Appendix A). Due to the lack of monitoring data for the other relevant SSSI it also unknown whether this decline was observed across all sites, or whether the declines at Old Bow and Old Ham Mines SSSI correlated with an increase at other sites.</p>
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⁷ Monitoring data provided by The National Bat Monitoring Programme (NBMP), December 2021, Bat Conservation Trust, in partnership with the Joint Nature Conservation Committee, and supported and steered by Natural England, Natural Resources Wales, Northern Ireland Environment Agency, and Scottish Natural Heritage.

⁸ Priddis, D. (11/01/2022), Re: Bats in the Forest of Dean, [email, personal communication]

⁹ Schofield, H. (08/12/2021), Bats and Martens in the FoD, [email, personal communication]

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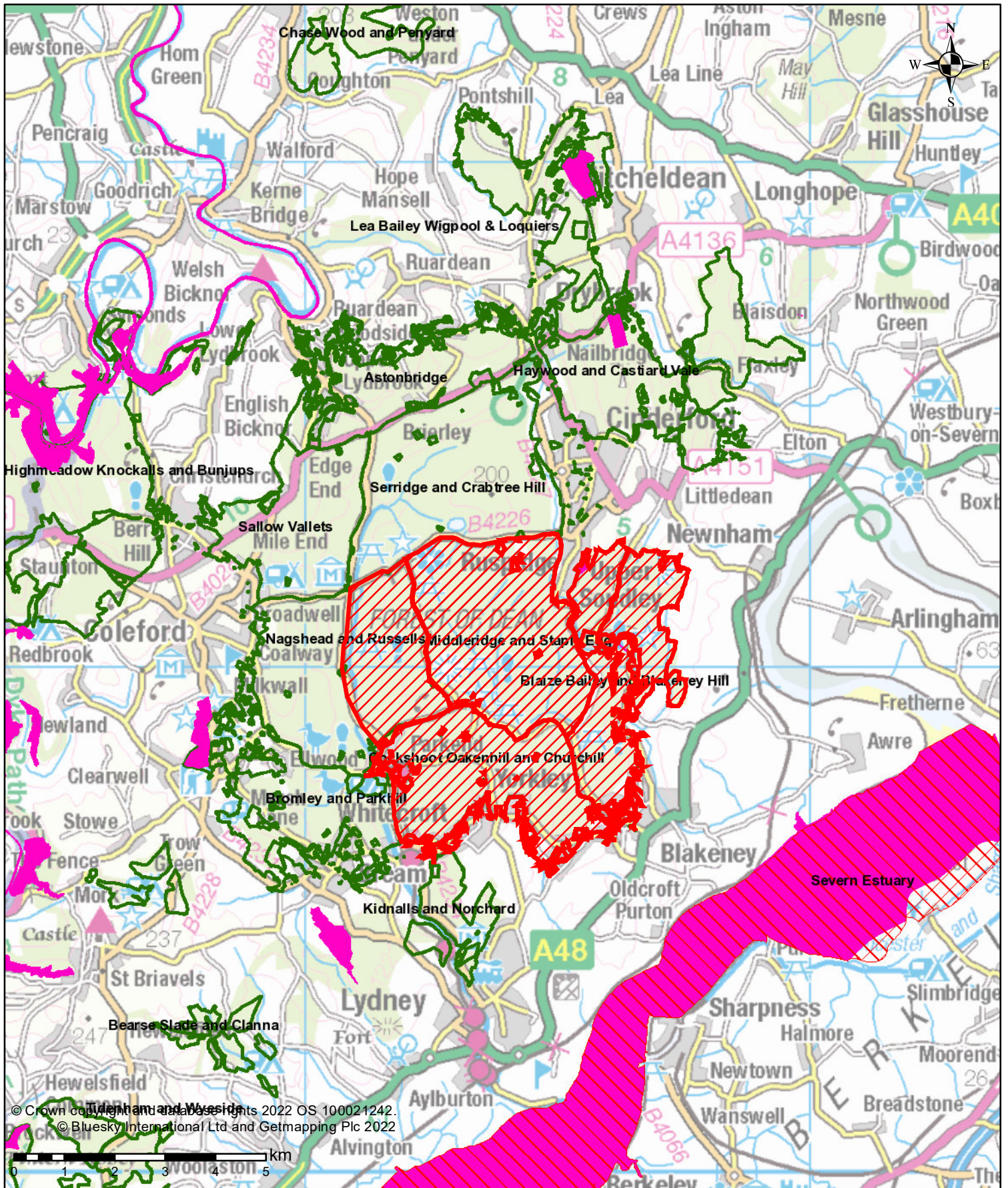
		No Likely Significant Effects to the Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC are predicted as a result of proposed activities within the Parkend Walk and Blakeney Walk Forest Plan.
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HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

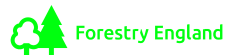
Appendices

Appendix A: Associated Mapping and Figures

Appendix A, Map 1: Internationally Designated Sites associated with the Parkend Walk and Blakeney Walk Forest Plan



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Title: Appendix A, Map 1

Date: 15 February 2022

Author: Sam Pegler

Scale @ A4: 1:100,000



Forestry England
 forests and woodlands
 have been certified in
 accordance with the UK
 Woodland Assurance
 Standard (UKWAS)



PEFC
 Promoting Sustainable
 Forest Management
 www.pefc.co.uk

Ramsar sites

Ramsar sites

Special Protection Areas

Special Protection Areas

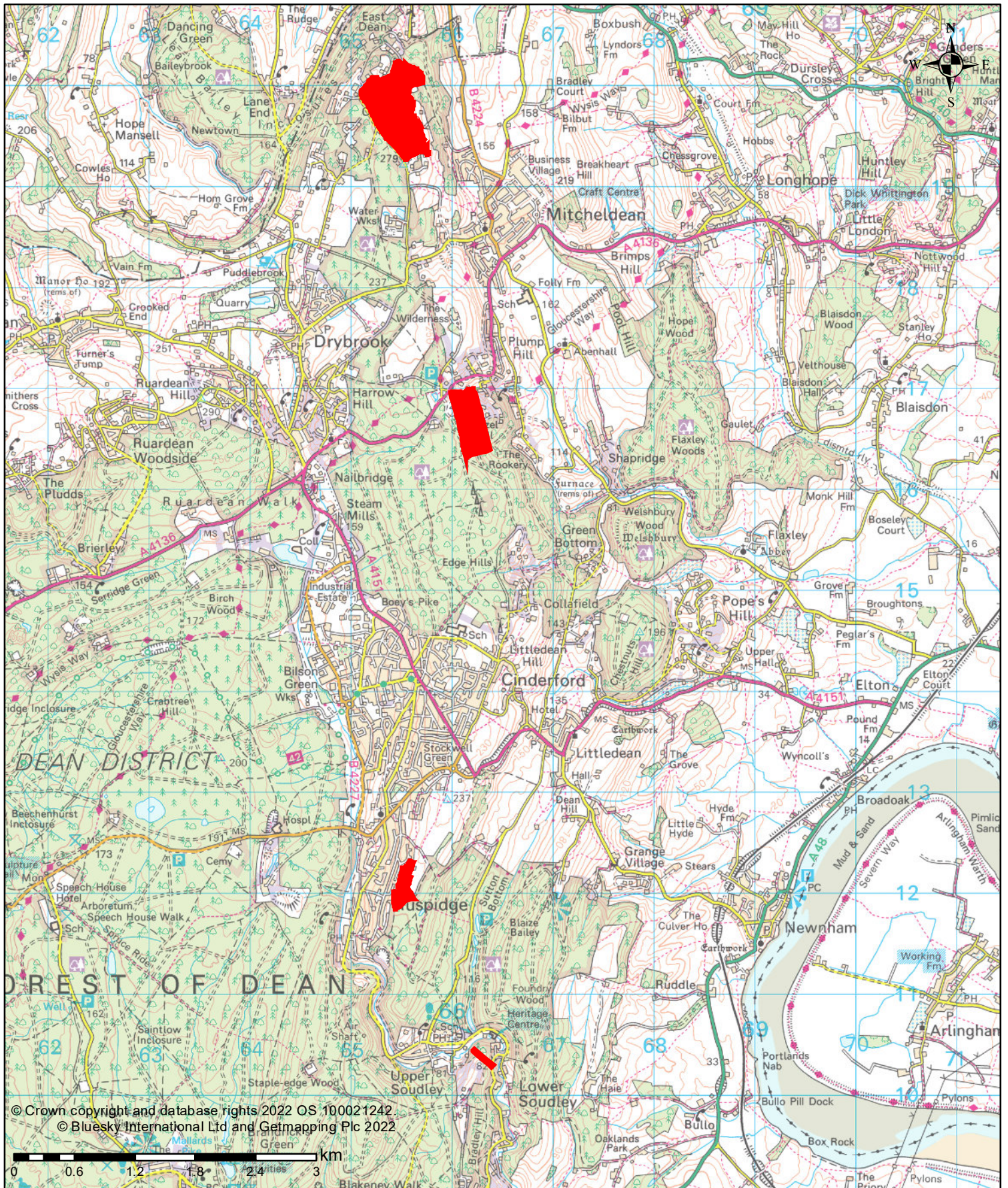
Blocks

Blocks

Special Areas of Conservation

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Appendix A, Map 2: Relevant SSSI associated with Wye Valley & Forest of Dean Bat Sites/Safleoedd
Ystlumod Dyffryn Gwy a Fforest y Ddena SAC



Title: Appendix A, Map 2

Date: 15 February 2022

Author: Sam Pegler

Scale @ A4: 1:50,000



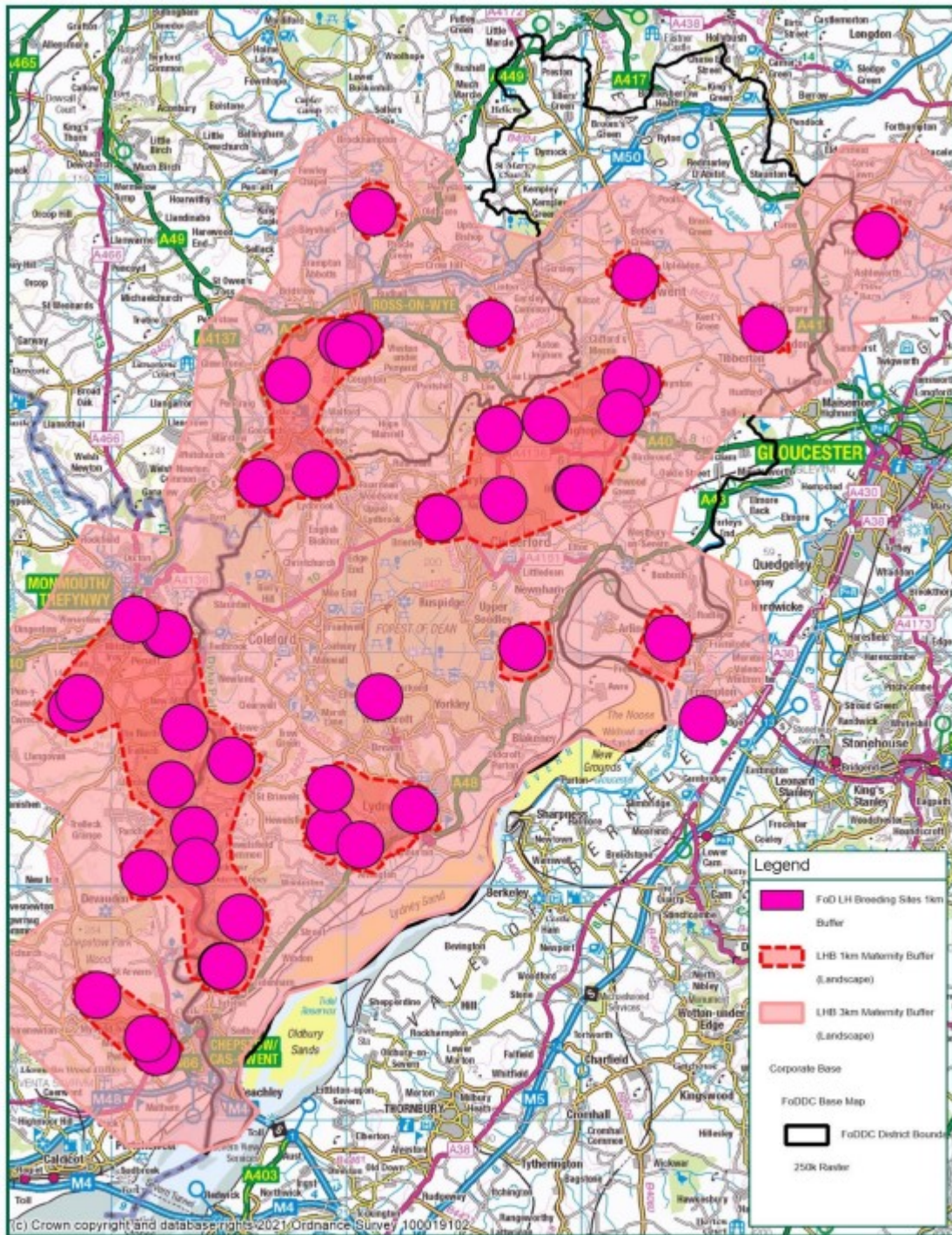
Forestry England
 forests and woodlands
 have been certified in
 accordance with the UK
 Woodland Assurance
 Standard (UKWAS)



Primary Sustainably
 Managed
 www.pefc.org

HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

Appendix A, Map 3: The Core Sustenance Zones of greater horseshoe bat and lesser horseshoe bat associated with relevant SSSI, an excerpt from “*Interim Guidance; Wye Valley and Forest of Dean Bat SAC Development Management - Horseshoe Bat activity survey and assessment guidance*”, Natural England, July 2021.

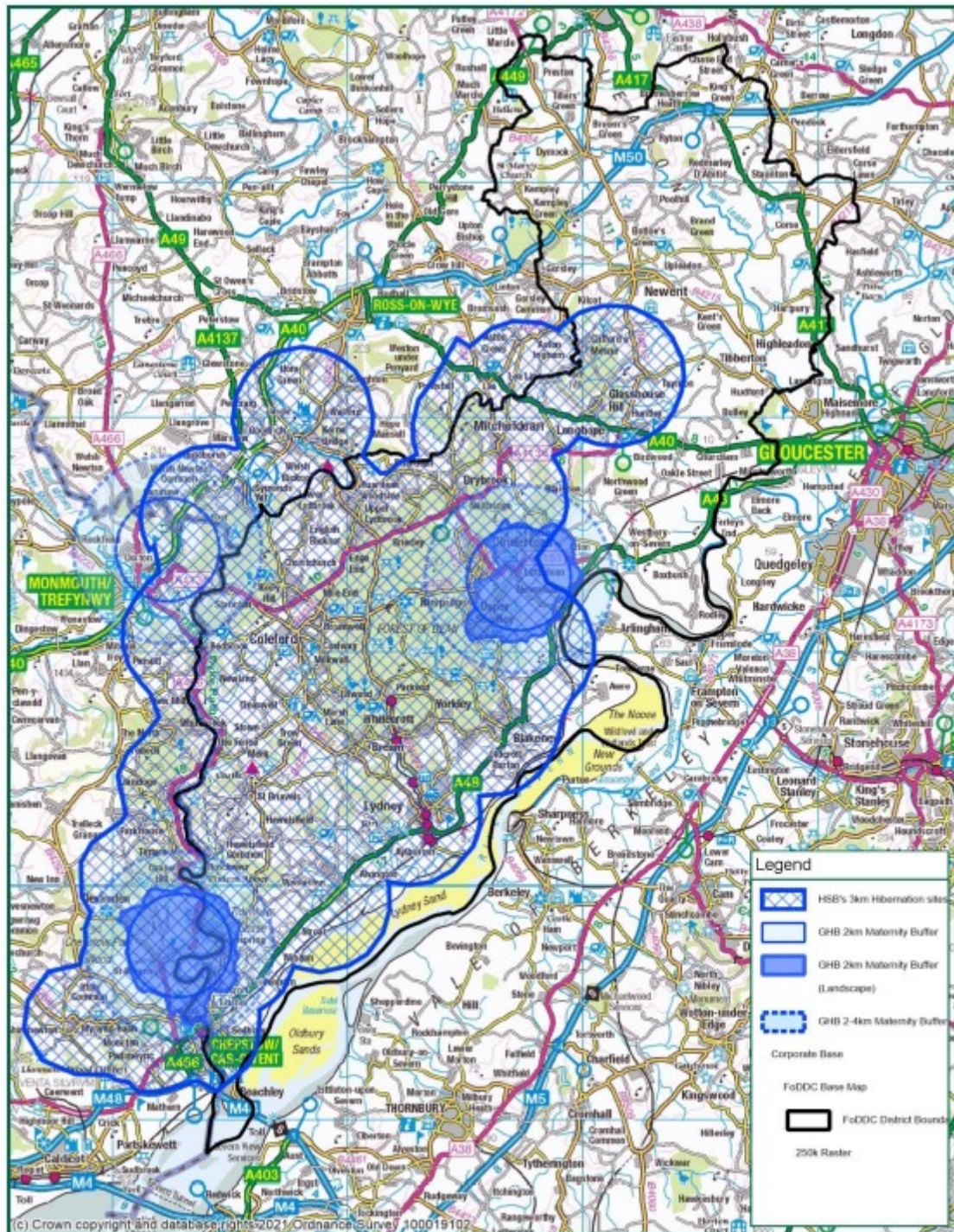


**Map A Lesser Horseshoe Bats
(Version 1.2)**

Scale: 1:200000

19 July 2021





**Map B Greater Horseshoe Bats
(Version 1.2)**

Scale: 1:200000

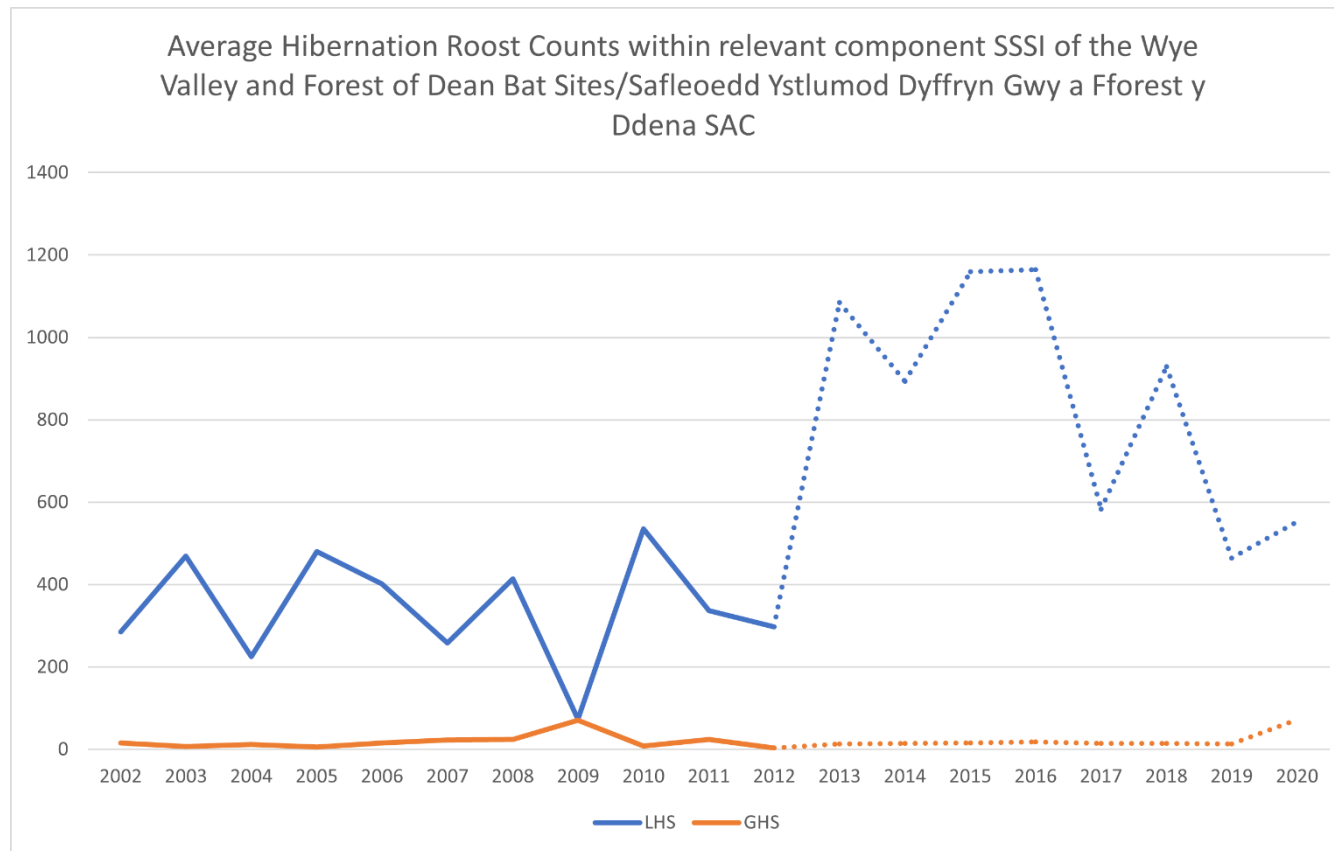
19 July 2021



HRA Screening: Parkend Walk and Blakeney Walk Forest Plan

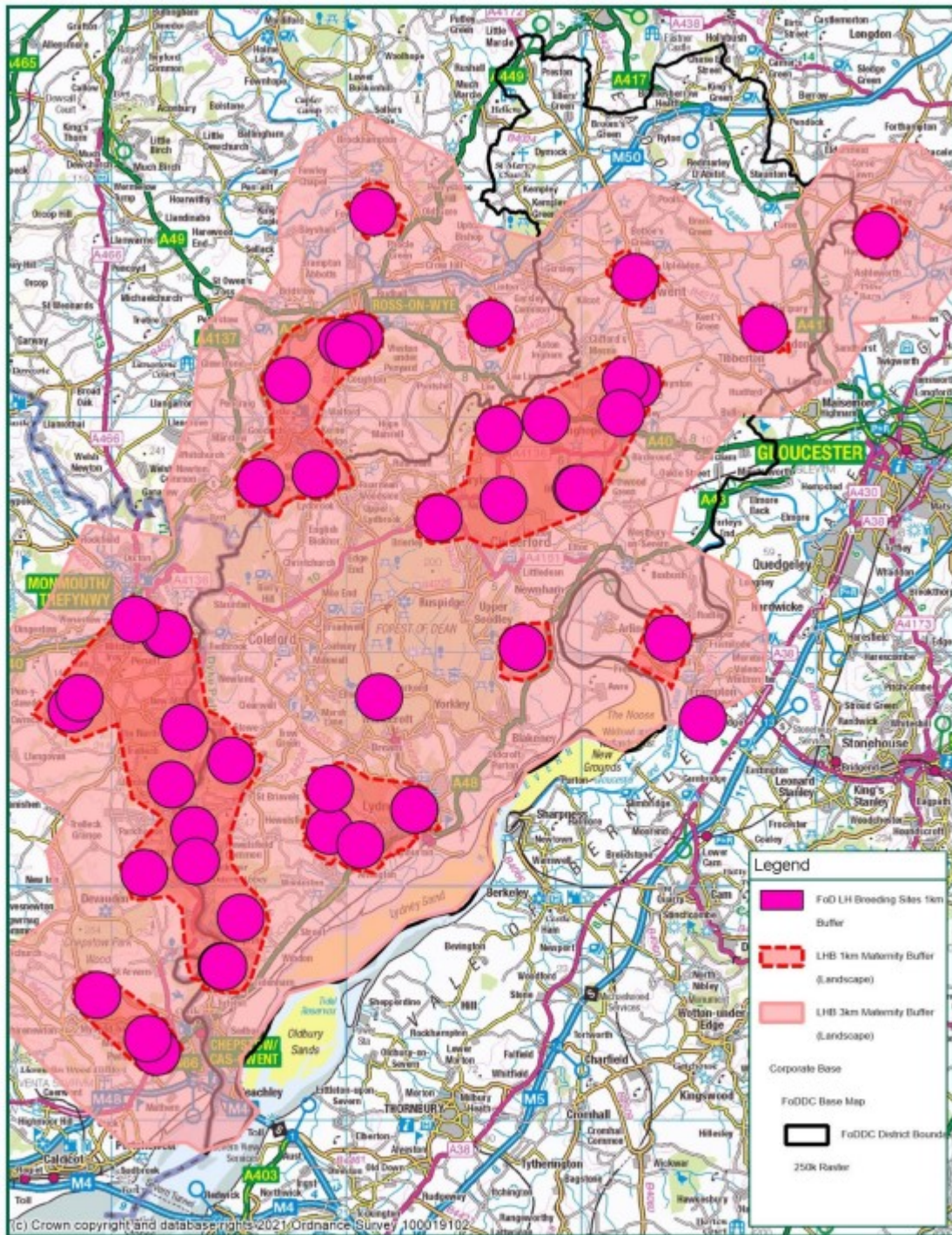
Appendix A, Figure 1: Average Hibernation Roost Counts within relevant component SSSI of the Wye Valley and Forest of Dean Bat Sites/Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC

*Note - 2012 - 2020 data is for Old Bow and Old Ham Mines SSSI only (indicated by dotted line)



Forest of Dean Bat SSSI Management Plan 2022 - 2032

Appendix 7: Extract from “*Wye Valley and Forest of Dean Bat SAC Development Management - Horseshoe Bat activity survey and assessment guidance*” (Natural England 2021) detailing buffers from known lesser horseshoe bat and greater horseshoe bat roosts.

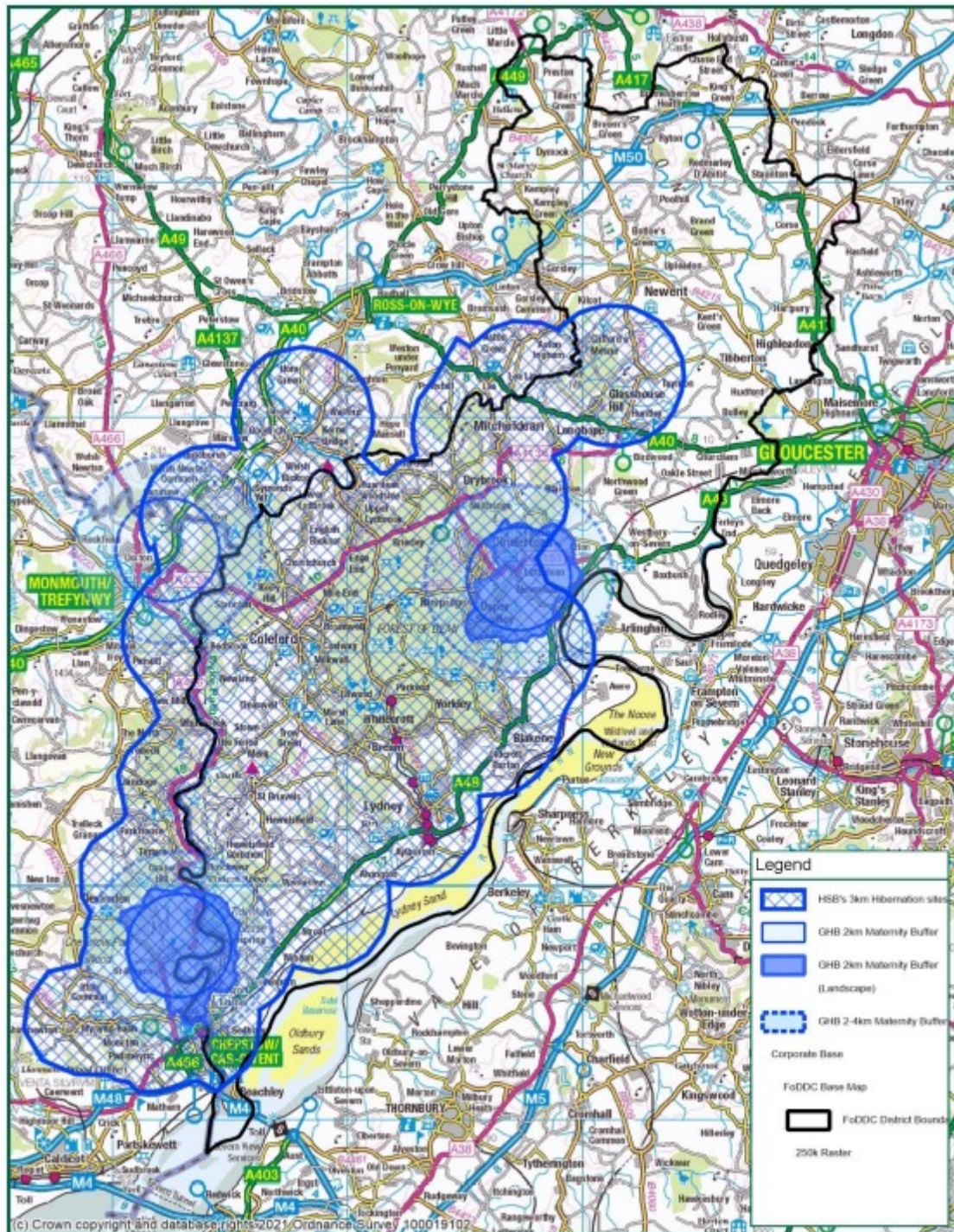


**Map A Lesser Horseshoe Bats
(Version 1.2)**

Scale: 1:200000

19 July 2021





**Map B Greater Horseshoe Bats
(Version 1.2)**

Scale: 1:200000

19 July 2021



Forest of Dean Bat SSSI Management Plan 2022 - 2032

Appendix 8: The Natural England Lesser and Greater Horseshoe Bat Conservation Strategy

EXTRACT FROM THE LESSER AND GREATER HORSESHOE BAT CONSERVATION STRATEGY

Natural England Lesser and Greater Horseshoe Bat Conservation Strategy

FOREWORD

This strategy has been produced by Natural England (Three Counties Team) in conjunction with members of the Gloucestershire Bat Group. It is hoped that in due course this document will develop into a joint strategy agreed with the Countryside Council for Wales (and other county Bat Groups) to reflect the nature of the widespread greater and lesser horseshoe bat populations across the England-Wales border.

The Strategy seeks to identify and direct the work of Natural England and the Gloucestershire (and other county) Bat Groups. It also seeks the involvement and support of a variety of other organisations/individuals whose areas of work may affect populations of lesser and greater horseshoe bats. These include:

- Forestry Commission England
- Deputy Gaveller (Forestry Commission England)
- Environment Agency
- County Councils
- District Councils
- Farming and Rural Conservation Agency Landowners Wye Valley AONB

The main thrust of the Strategy is to support the recent designation of several sites as Sites of Special Scientific Interest for horseshoe bat populations and the recent nomination of these sites for designation as a Special Area of Conservation under the provisions of the EC Habitats and Species Directive which reflects their international importance.

The Strategy also aims to draw attention to the roosts and habitats of horseshoe and other bat species across the area and outside designated sites. Some of the more specific measures focused at present on designated sites should also be applied to this wider resource in order to deliver the wider conservation of bat species.

The Strategy also includes a range of projects which could contribute significantly to the achievement of the UK Biodiversity Action Plans for horseshoe bats and offers opportunities for the various agencies and organisations with a remit to assist in securing the delivery of the planned targets. Natural England hopes that the Strategy will also offer the opportunity for the issues and opportunities identified in the profile for the Dean Plateau and Wye Valley to be addressed.

Natural England will be pleased to receive any comments which organisations/individuals would like to make on the content and direction of the Strategy and would welcome support that can be offered to assist with the delivery of the actions identified.

Introduction

All species of bat in Britain are fully protected under the provisions of the Wildlife and Countryside Act, 1981 and all are included on the Annexes of the EC Habitats and Species Directive which is implemented within the UK by the Conservation (of Natural Habitats &c.) Regulations 1994. The importance of bats is therefore recognised in both national and international terms.

In addition to the above, the UK Government is a signatory to the Agreement on the Conservation of Bats under the Bonn Convention (Convention on the Conservation of Migratory/ Species of Wild Animals) which make special provision for a number of bat species including horseshoe bats. These provide specifically for the protection of areas important for the shelter of bats and their feeding areas.

Lesser horseshoe bats (LHB) and greater horseshoe bats (GHB) have also been identified as species for which Species Action Plans should be prepared in order to fulfill the UK governments commitment to the Biodiversity Convention arising from the Rio Summit in 1992. These species have also been identified as being of outstanding importance to nature conservation in English Nature's profile for the Dean Plateau and Wye Valley Natural Area.

The GHB is one of the largest and rarest bats in Britain and is now found only in south-west England and south and west Wales. Only 15 colonies are known and the total UK population is estimated at 4,000 individuals. Britain has one of the largest populations of LHB in Western Europe estimated at 15,000. (see Distribution maps: Figures 1a and 1b).

The Wye Valley & Forest of Dean

The Forest of Dean and Wye Valley is an important area for LHB and supports approximately 10% of the mainland UK population. Two of the 15 known GHB breeding colonies in Britain are found within the Wye Valley and Forest of Dean area at Littledean Hall SSSI and Newton Court SSSI.

A number of sites within the wider Wye Valley and Forest of Dean have recently been notified as Sites of Special Scientific Interest (8 sites - 4 in England and 4 in Wales) for their importance as breeding roosts of horseshoe bats (see Figure 2).

These roosts alone give protection to approximately 60% of the estimated Wye Valley and Forest of Dean breeding population of LHBs. The importance of these roosts in the international protection of these species is also recognised by the recent inclusion of these roost sites on a list of Candidate Special Areas of Conservation (SAC) submitted by the UK Government to the European Commission.

Other features which are highly significant to the occurrence of high numbers of LHB and GHB within the Wye Valley and Forest of Dean are the availability of suitable hibernation sites in the old iron ore mines, caves, adits and scowles of the Forest of Dean and the extensive mosaic of deciduous and conifer woodland and old pasture feeding habitats.

The Strategy

The current emphasis in bat conservation in the Wye Valley and Forest of Dean is through the statutory protection of roosts (from destruction and disturbance) and via the general provisions of the Wildlife and Countryside Act, 1981. However, there are important aspects of the lifestyle of these vulnerable animals and conservation issues that affect them that cannot be addressed through roost protection alone.

The statutory designation of sites therefore needs to be supported by a number of coordinated wider countryside measures which seek to limit the threats and negative influences which may affect bats outside the roost and which secure more favourable conditions for their survival, for example, through the positive management of flight routes and feeding territories.

A conservation strategy must therefore address both the statutory protection requirements and the wider needs of LHBs and GHBs and include measures for all breeding roosts, hibernacula, flight routes and feeding habitats.

The Strategy, which has been developed by Natural England's Three Counties Team and members of the Gloucestershire Bat Group, is composed of a number of individual projects that will support the current SSSI (and proposed SAC) designations within the English section of the Wye Valley and Forest of Dean. The main aim is to ensure that the contribution that the designated sites make to achieving the "*favourable conservation status*" of these species is maintained and where possible enhanced, as defined by the EC Habitats and Species Directive.

The Strategy will encompass direct conservation action, data collation and education. It seeks the active involvement of various organisations/authorities, particularly with regard to the development of their relevant policies and practice where this affects bats and their habitats. The Strategy will also seek to develop better links between the conservation groups involved in bat conservation within the Wye Valley and Forest of Dean and improve their relationships with land managers and relevant decision makers within the area. Work in this area will focus on raising awareness of the issues affecting bats, giving advice on duties and powers and highlighting opportunities for securing better conservation.

In addition, the Strategy will seek to overcome the difficulties arising from the split of the LHB and GHB resource across county and country borders and address the need for further information on the extent of use of areas by the Dean and Wye Valley horseshoe bat populations. In due course it is intended that the Strategy will be developed into a joint Strategy between the Countryside Council for Wales, Gwent Bat Group and the Monmouth Bat Group. In summary the aims of the Strategy are:

- To identify and deliver measures/actions which provide increased protection of lesser and greater horseshoe bat populations and support the maintenance of the special interest of designated sites (SSSI and CSAC).
- To identify and promote opportunities for the involvement of organisations and authorities, whose work areas may impact on the conservation of horseshoe bats in assisting the delivery of the Strategy's actions and BAP and Natural Area targets.
- To raise awareness of the importance and special requirements of horseshoe bats and promote the need for integrated action to secure the maintenance and enhancement of populations throughout the Wye Valley & Forest of Dean.

The main strands of the strategy are identified below. Where appropriate the most relevant organisations/individuals with a role in securing the success of the measures are identified:

- SSSI notification of principal breeding roosts (Natural England, landowners)
- SSSI notification of most important hibernacula (Natural England, landowners)
- Possible SAC designation of principal breeding roosts (European Union, Department of the Environment/Natural England, landowners)
- Agreement of SSSI/SAC management practices (Natural England, landowners, Forestry Commission England)
- Establishment of Planning Consultation Areas (Natural England, District and County Councils)

- Development of guidance/training on bats and landscape requirements for Forestry (Natural England, Forestry Commission England)
- Establishment of Tree Preservation Orders (Natural England, District Council)
- Positive management of critical feeding areas and principal flight routes (Natural England, FRCA, landowners, Forestry Commission England)
- Continued monitoring of roost and hibernacula use (Natural England, Gloucestershire Bat Group)
- Agreement of a Joint Working statement between Natural England and the Gloucestershire Bat Group
- Agreement of a Joint Working statement between Natural England, Forestry Commission England and the Deputy Gaveller's Office of Forestry Commission England
- Development of a Code of Practice for underground visitors (Natural England, Forestry Commission England, Caving Clubs, Other Clubs/Associations)
- Establishment of a Bat Site Inventory for use in consultation (Natural England, Forestry Commission England, Deputy Gaveller, Environment Agency, District Council, County Council)
- Promotion of importance of bats through the Natural Area (and Character Areas) projects and production of information packs for partners and landowners (Natural England, Wye Valley AONB)

(This strategy was developed in 2000)

Forest of Dean Bat SSSI Management Plan 2022 - 2032

Appendix 9: Wye Valley and Forest of Dean Bat Site Special Area of Conservation; Monitoring of underground sites: a joint protocol between Natural England, the Forestry Commission and the Forest of Dean Cave Conservation and Access Group

WYE VALLEY AND FOREST OF DEAN BAT SITE SPECIAL AREA OF CONSERVATION

Monitoring of underground sites: a joint protocol between Natural England, the Forestry Commission and the Forest of Dean Cave Conservation and Access Group

Introduction

The Wye Valley and Forest of Dean Bat Sites Special Area of Conservation (SAC) is composed of 13 Sites of Special Scientific Interest in England and Wales. These SSSI are the major hibernation or breeding roosts for an internationally important population of greater and lesser horseshoe bats. On the English side of the border there are 5 hibernation sites and 4 breeding roosts.

Parts of the 5 hibernation sites have underground workings which lie within the Hundred of St Briavels and which are therefore under the jurisdiction of the Deputy Gaveler of the Forestry Commission. As competent authorities Natural England and the Forestry Commission are charged with ensuring that the hibernation sites are maintained in favourable condition (so that they meet the requirements of the conservation objectives produced by Natural England). To this end the condition of the roosts and their use needs to be monitored as part of a programme for both the individual sites and the SAC as a whole. Natural England commissioned work in 2004/5 which collated existing count data and recorded the physical condition of each site. This has provided baseline data for future monitoring.

The nature of the underground workings and safety issues affecting these sites means that restrictions are placed on underground access and working within these sites and access is necessarily restricted to appropriately skilled and insured individuals. The process for authorising access is via an umbrella caving group, the Forest of Dean Cave and Conservation Access Group (FODCCAG). This was also the group through which the collation of baseline data was undertaken.

This joint protocol aims to set the framework and agree the principles within which the SSSI and SAC monitoring programme will be carried out.

Access to underground sites & disused tunnels etc

An access agreement (which is renewed annually exists between the Forestry Commission and FODCCAG. Under this agreement FODCCAG indemnifies FC against any claims for loss or damage resulting from the access FODCCAG administers. FODCCAG are responsible for co-ordinating all survey and conservation work relating to the caves, other sites of speleological interest, disused railway tunnels and tramways that fall within the mineral estate of the Forest of Dean district (west of the River Severn).

Annual monitoring

Natural England re-assesses the condition of SSSI on a 6 year cycle, results of the assessments are recorded on Natural England's national database and information about condition of the SAC is drawn from this database. However it would not be possible to judge population trends if counts were undertaken this infrequently. Monitoring of the bat population therefore depends on annual counts undertaken by bat workers on a voluntary basis.

- Annual counts to be undertaken at various points in the underground systems. Detailed counts to be submitted to NE & summary counts to be supplied to FC
- Every 6 years either NE or FODCCAG on behalf of NE will assess the condition of entrances etc

Co-ordination of counts

The access agreement with FC gives the responsibility for survey coordination to FODCCAG. Survey co-ordination should be based on the following principles:

- Annual programme to be drawn up by bat workers & FODCCAG Conservation Officer by the end of November each year identifying the week in which counts at each SSSI will be carried out. Any changes to be notified in advance to the FODCCAG Conservation Officer.
- NE & FC will be notified in writing/by email of the annual programme. Any changes to the programme will also be notified in advance.
- FODCCAG Conservation Officer to be available by telephone or email — in the event of an absence another member of FODCCAG to be nominated to act as contact for bat workers
- Count records to be supplied to NE & FC by the end of June following the winter when counts were undertaken

Other works

Cavers who are members of the following groups (Royal Forest of Dean Caving Club, Hades Caving Club & Gloucestershire Speleological Society) have free access to the underground systems. At present there is no evidence of impacts on the bat populations from current levels of access. However this will continue to be monitored through the annual counts and may require re-assessment in future. Cave Conservation Plans will also be produced for each SSSI.

Bats are also affected by changes in dynamic air-flow. No digging will be carried out by cavers unless FC and NE have given permission.

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Appendix 10: Natural England’s “*Operations likely to damage the special interest*” for Wigpool Ironstone Mine SSSI, Westbury Brook Ironstone Mine SSSI, Buckshraft Mine & Bradley Hill Railway Tunnel SSSI and Old Bow & Old Ham Mines SSSI

Operations likely to damage the special interest

Site name: Old Bow and Old Ham Mines, SSSI

OLD2000187

Ref. No.	Type of Operation
6	Application of pesticides or other toxic, harmful or irritant chemicals in or near the bat roosting area.
7	Dumping and discharge of any materials which might obstruct access to the site or produce noxious fumes in or near the sites.
8	Burning or incineration of materials in or near the bat roosting areas.
9	The release into the site of any wild, feral or domestic animal*.
10	The killing or removal of any wild animal*, including pest control.
12	Tree and/or woodland management+.
20	Extraction of minerals.
22	Storage of materials in or near to the bats roosting areas or access points including storage of material likely to produce noxious fumes.
23	Erection of permanent or temporary structures, or the undertaking of engineering works.
24	Modification of natural or man-made features, including the modification or alterations of cave, mine, shaft or tunnel entrances and interiors.
26	Use of vehicles, machinery or other devices likely to produce noise, fumes or heat near to the bat roosting areas or access points.
27	Recreational activities likely to cause disturbance to roosting bats.

* 'animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.

+ including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition. (Applies only to Area 1).

Operations likely to damage the special interest

Site name: Westbury Brook Ironstone Mine, SSSI

OLD2000188

Ref. No.	Type of Operation
6	Application of pesticides or other toxic, harmful or irritant chemicals in or near the bat roosting area.
7	Dumping and discharge of any materials which might obstruct access to the site or produce noxious fumes in or near the sites.
8	Burning or incineration of materials in or near the bat roosting areas.
9	The release into the site of any wild, feral or domestic animal*.
10	The killing or removal of any wild animal*, including pest control.
12	Tree and/or woodland management+.
20	Extraction of minerals.
22	Storage of materials in or near to the bats roosting areas or access points including storage of material likely to produce noxious fumes.
23	Erection of permanent or temporary structures, or the undertaking of engineering works.
24	Modification of natural or man-made features, including the modification or alteration of cave, mine, shaft or tunnel entrances and interiors.
26	Use of vehicles, machinery or other devices likely to produce noise fumes or heat near to the bat roosting areas or access point.
27	Recreational activities likely to cause disturbance to roosting bats.

* 'animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.

+ including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition. (*Applies only to Area 1*)

Operations likely to damage the special interest

Site name: **Wigpool Ironstone Mine**

OLD2000191

Ref. No.	Type of Operation
6	Application of pesticides or other toxic, harmful or irritant chemicals in or near the bat roosting area.
7	Dumping and discharge of any materials which might obstruct access to the site or produce noxious fumes in or near the sites.
8	Burning or incineration of materials in or near the bat roosting areas.
9	The release into the site of any wild, feral or domestic animal*.
10	The killing or removal of any wild animal*, including pest control.
12	Tree and/or woodland management+ (Applies only to Area 1).
20	The extraction of minerals.
22	The storage of materials in or near to the bats roosting areas or access points including storage of material likely to produce noxious fumes.
23	The erection of permanent or temporary structures, or the undertaking of engineering work.
24	The modification of natural or man-made features, including the modification or alteration of cave, mine, shaft or tunnel entrances and interiors.
26	The use of vehicles, machinery or other devices likely to produce noise, fumes or heat near to the bat roosting areas or access points.
27	Recreational activities likely to cause disturbance to roosting bats.

* 'animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.

+ including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition.

Operations likely to damage the special interest

Site name: Bucksrafft Mine and Bradley Hill Railway Tunnel

OLD2000192

Ref. No.	Type of Operation
6	Application of pesticides or other toxic, harmful or irritant chemicals in or near the bat roosting area.
7	Dumping and discharge of any materials which might obstruct access to the site or produce noxious fumes in or near the sites.
8	Burning or incineration of materials in or near the bat roosting areas.
9	The release into the site of any wild, feral or domestic animal*.
10	The killing or removal of any wild animal*, including pest control.
12	Tree and/or woodland management, including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in the species composition. <i>(Applies only to Area 1).</i>
20	The extraction of minerals.
22	The storage of materials in or near to the bats roosting areas or access points including storage of materials likely to produce noxious fumes.
23	The erection of permanent or temporary structures, or the undertaking of engineering work.
24	Modification of natural or man-made features, including the modification or alteration of cave, mine, shaft or tunnel entrances and interiors.
26	The use of vehicles, machinery or other devices likely to produce noise, fumes or heat near to the bat roosting areas or access points.
27	Recreational activities likely to cause disturbance to roosting bats.

* 'animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.