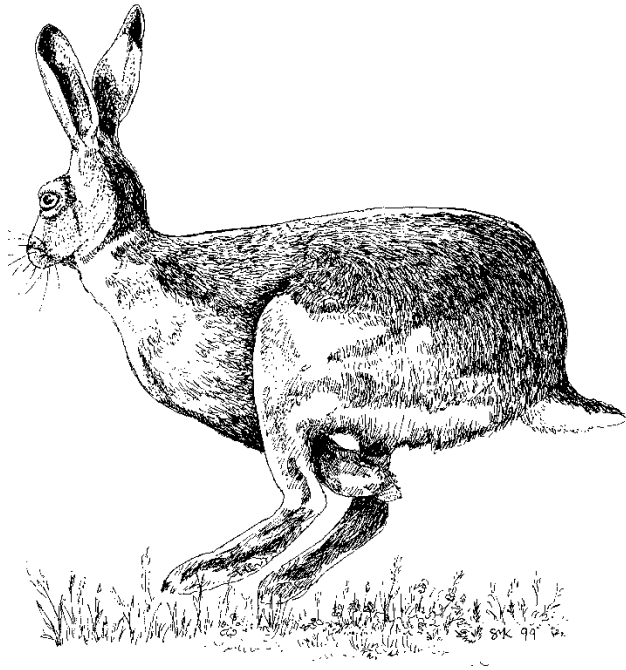


Mount Ballan:
Oak Grove Farm
Portskewett
Monmouthshire
NP26 5UT



**A Preliminary
Ecological Appraisal
By:**



On Behalf Of:



April 2020

Client	Monmouthshire County Council
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1 Executive Summary

- 1.1 Oak Grove Farm, near Portskewett, is being put forward as part of the Mount Ballan Settlement proposal, as a candidate site for Monmouthshire County Council's Local Development Plan. A Preliminary Ecological Appraisal of the site was therefore commissioned to provide baseline ecological information in line with relevant policy and legislation. This comprised an ecological assessment of habitats and protected/priority species in November and December 2019, including its potential to qualify as a Site of Importance for Nature Conservation (a known Local Wildlife Site).
- 1.2 The primary aim of this report is to highlight, as far as reasonably possible, the overall ecological value of Oak Grove Farm and the degree to which its allocation could potentially impact biodiversity. Recommendations appropriate to the findings of the survey are provided at the end of this report.
- 1.3 Covering an area of approximately 51 hectares, the survey area consists mostly of species poor semi-improved grassland, with vegetated boundaries and field margins that are made up of both intact and defunct hedgerows, in addition to woodland habitat and trees. The farmstead is situated at the western edge of the site, and is composed of a series of buildings that are surrounded by hardstanding and discrete patches of ruderal vegetation. A small band of woodland that extends from the adjacent Bradbury Farm is present at the south-west corner of the site.
- 1.4 Of the buildings on site, a farmhouse, which is in-use, and a series of attached buildings, were assessed as having moderate potential for roosting bats, therefore requiring additional survey. A second house, to the east of the farmhouse, was not accessed. The agricultural livestock sheds to the south of the attached buildings were assessed as having negligible potential for bats. More comprehensive survey effort must be carried out on those buildings with moderate potential, in addition to the farmhouse that was not accessed, prior to planning approval to assess the numbers, species, status and precise locations of bat roosts on site.
- 1.5 As a whole, Oak Grove Farm was assessed as having medium ecological value. Although further survey effort is required to more comprehensively assess ecological impacts, only discrete parts of the site, namely the buildings associated with bat roosts, were of potential Site of Importance for Nature Conservation quality and the small area of woodland is of SINC quality. Despite the potential for ecological impacts on protected and priority species, there is no reason why such impacts could not be avoided or appropriately mitigated with a well-conceived design layout and responsible build/management strategy and this baseline assessment presented no major ecological constraints that would prevent the site's Local Development Plan allocation. Nevertheless, any future development plans must be adequately informed by the results from more focussed bats, dormouse, breeding bird and invertebrate assessments.

2 Introduction

- 2.1 The Just Mammals Consultancy LLP was commissioned by Monmouthshire County Council (MCC) to complete a Preliminary Ecological Appraisal (PEA) of Oak Grove Farm, near Portskewett, Monmouthshire, which makes up part of the Mount Ballan Settlement proposal. This comprised an ecological survey of the site and formal desktop study in accordance with current guidelines (CIEEM 2017). The survey was completed on the 25th November and 9th December 2019, and included an assessment of habitats, as well as protected/priority species. The site was also assessed for its potential to qualify as a Site of Importance for Nature Conservation (SINC).
- 2.2 Oak Grove Farm landholding is being put forward as a candidate site for MCC's Local Development Plan (LDP), as part of the Mount Ballan Settlement proposal; a plan for an entirely new settlement.
- 2.3 Situated to the north of Portskewett, the site is currently used for agricultural purposes, and is located approximately 1.5km north-east of Caldicot. The centre of the site is at National Grid Reference (NGR) ST 49832 90071, at an altitude of roughly 47m Above Ordnance Datum (AOD).
- 2.4 The primary aim of this report is to highlight, as far as reasonably possible, the overall ecological value of the site and the degree to which its allocation could potentially impact biodiversity. Recommendations appropriate to the findings of the survey are provided at the end of this report (Section 10).
- 2.5 Objectives of this PEA include:
 - using a formal desk study to assess the ecological value of the surrounding area and zone of influence (see Section 7);

- determining the ecological value of the site using a formal assessment of on-site habitats and protected and priority species (see Section 9);
- identifying the key constraints or opportunities the site's LDP allocation may have on ecology and biodiversity (see Section 9); and
- highlighting potential requirements for further survey effort, mitigation measures and ecological enhancement opportunities for safeguarding biodiversity in the event of allocation (see Section 10).

3 Survey Team Experience

- 3.1 The field survey was undertaken by Phoebe Williams and Robert Morgan. Table 1 below describes their relevant experience. Phoebe Williams is author of this report.

Table 1: Survey Team Experience

Name/Position	Licences	Experience
Robert Morgan Ecologist	78046:OTH:CSAB:2018 expiry 31 January 2020	Robert has over twelve years' experience with bats (NRW licence holder), carrying out roost surveys, emergence surveys, radio tracking of lesser horseshoes and monitoring of important sites. He holds a City & Guilds Level 2 award for working in Medium Risk Confined Spaces. Rob has expertise in respect of dormice with 22 years' experience monitoring dormouse boxes at a Local Nature Reserve and surveying for dormice at various other sites (NRW licence holder). Rob is also licenced to disturb barn owls listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) with six years' experience surveying for this species (NRW licence holder). He has experience surveying for otters, water voles, reptiles, amphibians, birds and marsh fritillary butterflies. Rob is an Ecologist with the Just Mammals Consultancy LLP
Phoebe Williams BA (Hons) Student CIEEM Assistant Ecologist		A Geography graduate from the University of Exeter, and a former trainee at Gwent Wildlife Trust she has completed a Natural Talent trainee programme, studying Hemiptera at the National Museum of Wales. Practical experience includes survey work for dormice, botany, newts, reptiles, and invertebrates. She has also carried out practical habitat management work whilst volunteering for Gwent Wildlife Trust. Phoebe is undertaking an MSc in Wildlife and Conservation Management at the University of South Wales, and is a Student Member of Chartered Institute of Ecology and Environmental Management (CIEEM). She is an Assistant Ecologist with the Just Mammals Consultancy LLP
Maja Hudej BA (Hons) MSc Student CIEEM Trainee Ecologist		Maja is an MSc graduate in Wildlife and Conservation Management, and Student Member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Maja is a Trainee Ecologist with the Just Mammals Consultancy LLP

4 Survey Methodology

- 4.1 Sites of nature conservation interest within 1km of Oak Grove Farm were identified using the web-based MAGIC database (www.MAGIC.gov.uk). These included sites with statutory designations of international importance; Special Areas of Conservation (SACs), Special Protected Areas (SPAs) and Ramsar sites, as well as sites of national importance; Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). This resource was also used to assess whether the site falls within the Juvenile Sustenance Zone for the Wye Valley and Forest of Dean Bat Sites SAC. This was taken to be 600m for lesser horseshoe bats (*Rhinolophus hipposideros*), and 1km for greater horseshoe bats (*R. ferrumequinum*).
- 4.2 South East Wales Biodiversity Records Centre (SEWBReC) was consulted for records of Protected and Priority species within 1km of the survey area. The records centre also provided details of any Local Wildlife and SINC sites within 1km, as well as any listed on the Ancient Woodland Inventory.
- 4.3 MCC's Ecological Connectivity Assessment (Gwent Ecology, 2010) was examined to assess Oak Grove Farm in the context of the local landscape. The MCC LDP web pages were also examined for any previous walkover information relating to the site.
- 4.4 The PEA was completed on 25th November and 9th December 2019 by an experienced ecologist and an assistant(s). This is outside the optimal time of year for assessing habitats and biodiversity in Britain. The site and its boundaries were appraised according to the standard methodology

detailed in the 'Handbook for Phase-1 habitat survey' (JNCC 2010). All habitats were mapped, described and photographed. Accompanying species lists and features of nature conservation interest were recorded. The assessment was extended to account for priority habitats listed under Section 7 of the Environment (Wales) Act. A digitised Phase-1 habitat map can be found in Figure 4 (see Appendix II) with photos in Appendix III.

- 4.5 Hedgerows were surveyed for their native species-richness and the degree to which they were classified as 'important' under the Hedgerow Regulations (1997). Surveyors also assessed the site for the presence of veteran trees in accordance with 'Veteran Trees: A Guide to Good Management' (Reed, 2000).
- 4.6 Surveyors appraised the site's suitability for protected species. These included badger (*Meles meles*), bats, otter (*Lutra lutra*), dormice (*Muscardinus avellanarius*), water vole (*Arvicola amphibius*), reptiles and amphibians. Where present, field signs or the animals themselves were also recorded. For great crested newts (*Triturus cristatus*), ponds within 500m of the site were identified using Ordnance Survey maps, aerial imagery and assessed *in-situ* during the survey where access was available. Other priority species listed under Section 7 of the Environment (Wales) Act were also considered, such as brown hare (*Lepus europaeus*), west European hedgehog (*Erinaceus europaeus*), and harvest mouse (*Micromys minutus*).
- 4.7 Buildings on site were assessed for their suitability for roosting bats and nesting birds on the 25th November 2019. The external assessment involved examining outer surfaces from the ground and looking for signs of bat presence including bat faeces (droppings) on walls, ledges, doors and sills. A high-powered lamp was used to examine potential access and roosting areas. Any gaps or crevices were inspected as closely as possible. Where internal access was available and considered safe, this included a careful examination of the internal rooms for live bats, droppings and insect parts. Surveyors also searched for other evidence of bat occupation, including discarded fragments of moth wings and staining on the surfaces of exposed timbers, paintwork or windows caused by bat urine or oil from their fur. Nesting birds in the buildings were also considered with surveyors recording any signs of historic bird activity, nesting material, bird droppings and feathers.
- 4.8 Invasive species, such as Japanese knotweed (*Fallopia japonica*), and Himalayan balsam (*Impatiens glandulifera*), were also recorded, where present.

5 Site Description

- 5.1 Situated to the east of Caldicot, approximately 1.3km north of Portskewett, Oak Grove Farm is roughly 51ha in size, and mostly consists of semi-improved grassland with semi-natural vegetated boundaries. The land is used for agricultural purposes, with a farmstead located at the western edge of the site. The farmstead is made up of a mix of attached outbuildings, separate agricultural livestock sheds, and a farmhouse, to the west. A second dwelling is also present to the east of the farmstead, this was not assessed as no access was provided. Hardstanding areas surround the buildings, with patches of dispersed ruderal vegetation. A small band of woodland is present at the south-west corner of the site, which extends from woodland habitat within the adjacent Bradbury Farm. The surrounding landscape is typically rural and primarily characterised by pastoral farmland, with a solar farm situated immediately north-west of the site.

6 Survey Constraints

- 6.1 The comprehensiveness of any ecological assessment may be limited by the season in which the site visit was undertaken. It must be noted that this PEA assessment is not intended to confirm the presence or absence of all plant species on site. This would require a more detailed botanical assessment over multiple site visits. However, it does provide a comprehensive ecological assessment of habitat types and dominant species at the time of the survey and highlights areas where further survey effort would be required.
- 6.2 No access was provided to the residential dwelling to the east of the farmstead. All other buildings on site were accessible.

7 Desktop Study

- 7.1 Although no part of the site is within or directly adjacent to any statutory sites of nature conservation interest, the desktop study confirmed six sites of interest within 2km of the site. The Severn Estuary

(Ramsar, SSSI, SPA and SAC) is located approximately 2km south-east of the site; Bush Close SSSI is some 1.5km south-east of the site; Dinham Meadows SSSI is roughly 1.3km north-east of the site; Gwent Levels – Magor and Undy SSSI approximately 2km south of the site, and; Nedern Brook Wetlands, Caldicot SSSI is located roughly 0.7km west of the site. Within 2km of the site the Wye Valley Area of Outstanding Natural Beauty is also located.

- 7.2 No part of the site falls within the Juvenile Sustenance Zone for the Wye Valley and Forest of Dean Bat Sites SAC.
- 7.3 The desk-study indicated that two SINC sites were present within 1km, one of which is directly adjacent to the site. These are listed in order of proximity:
- Ballan Wood: immediately west of the site, a combination of ancient semi-natural woodland (ASNW) and a restored ancient woodland site (RAWS);
 - Sunny Bank: approximately 390m to the north of the site (ASNW).
- 7.4 SEWBREC's record search reported 17 sites within 1km, listed on the Ancient Woodland Inventory, two of which are described above. Crown Hill woodland (RAWS) situated within Bradbury Farm, is immediately to the south-west of the site. The remaining woodland sites are to the east of Oak Grove Farm, and comprise a mix of ASNW and RAWS.
- 7.5 SEWBREC's record search (unique reference 0190-389) reported 137 species records within 1km of the site. These are briefly summarised in the bullet list below.
- land mammals – excluding bats – accounted for 40 records. Records of hedgehog within close proximity to the site have been returned, including a record within a garden neighbouring the site. Polecat (*Mustela putorius*) has been recorded within the surrounding area. Records of badger have been returned within the adjacent woodland – Ballan Wood, in addition to field signs for dormice. Otter records have been returned within 2km;
 - bats accounted for 46 of species records. The closest record is over 700m from the site, of a foraging common pipistrelle (*Pipistrellus pipistrellus*). The closest roost was a day roost of a common pipistrelle bat, approximately 761m from the site. Other records of bats foraging and commuting include soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), Natterer's (*Myotis nattereri*), and whiskered/Brandt's (*Myotis mystacinus/brandtii* agg.). Lesser horseshoe bats have been recorded over 1600m from the site;
 - a single reptile record, but no amphibian records were returned from the search. A grass snake (*Natrix helvetica*) was recorded approximately 843m from the site,
 - birds accounted for 41 species records. Kestrel (*Falco tinnunculus*), and house sparrow (*Passer domesticus*), have been recorded immediately north of the site. Additional Section 7 species including starling (*Sturnus vulgaris*) and lapwing (*Vanellus vanellus*) have been recorded over 500m from the site;
 - plants accounted for just two records, with one record of bluebell (*Hyacinthoides non-scripta*), and small-flowered sticky eyebright (*Euphrasia officinalis subsp. anglica*) both approximately 1378m from the site;
 - invertebrates accounted for 7 species records. Brown-banded carder-bee (*Bombus humilis*), and shrill carder bee (*Bombus sylvarum*) have been recorded over 800m from the site;
 - no records of fish and aquatic invertebrates were returned from the data search.
- 7.7 MCC's Ecological Connectivity Assessment (Gwent Ecology, 2010), was examined to assess Oak Grove Farm in the context of the local landscape. A discrete area in the south of the site is highlighted for its connectivity for great crested newts (see Figure 4). This is likely based on the presence of ponds to the south-east.
- 7.8 The MCC LDP web pages were examined for any previous walkover information relating to Oak Grove Farm, although no further information was available.

8 Survey Results

- 8.1 The extended Phase 1 survey was carried out on 25th November and 9th December 2019, by an experienced ecologist and an assistant. Details of the conditions under which the survey was conducted are given in Table 2 below. Wind speeds shown employ the Beaufort scale.

Table 2: Summary of Survey Activity and Weather Conditions

Survey Type	Date	Timing	Weather Conditions
Day time visual inspection, botanical survey and habitat assessment, including protected species assessment. (RM, PW)	25/11/2020	10.30 – 13.45 hours Greenwich Mean Time (GMT)	Air temperature: 11°C Cloud cover: 8/8 oktas Wind speed: F1, light air Conditions: Dry
Day time visual inspection, botanical survey and habitat assessment, including protected species assessment (PW, MH)	09/12/2020	09.40 – 11.35 hours GMT	Air temperature: 7°C Cloud cover: 6/8 oktas Wind speed: F5, fresh breeze Conditions: Dry
Surveyors	Rob Morgan, Phoebe Williams, Maja Hudej		

- 8.2 For recording purposes, the site was divided into six different habitat types and mapped following the codes and conventions described in the Phase 1 Habitat Survey Handbook (JNCC 2010). Table 3 below describes the on-site habitats including an indication of the surface area covered by this type of habitat. The most dominant plant species are also listed.

Table 3: Summary of Phase 1 Habitat Notes

Habitat	Phase 1 Classification	Description of Area and Typical Species
Type 1	J3.6 – Buildings (<1% of the site's surface area)	A series of farm buildings are present to the west of the site. Building descriptions are provided in Table 6 below
Type 2	B6 – Semi-improved grassland (95% of surface area)	The agricultural fields that make up the site are composed of this habitat. Evidence of grazing is apparent due to short sward height in several of the fields. The most common species include creeping buttercup (<i>Ranunculus repens</i>), common chickweed (<i>Stellaria media</i>), white clover (<i>Trifolium repens</i>) and ribwort plantain (<i>Plantago lanceolata</i>)
Type 3	J5 – Hardstanding (1% of surface area)	The areas surrounding the buildings at Oak Grove Farm are made up of this habitat, with ruderal species growing amongst the cracks. Species present include pineapple weed (<i>Matricaria discoidea</i>), dandelion (<i>Taraxacum officinale</i>) and groundsel (<i>Senecio vulgaris</i>)
Type 4	J2.2.2 – Defunct hedgerow (Species Poor) (1% of surface area)	To the west of the site a single stretch of gappy hedgerow runs from west to east. Newly planted hedgerow, also classified within this habitat type, stretches along sections of the western boundary, where the site lies adjacent to the solar farm park. Species present include birch (<i>Betula sp.</i>), hawthorn (<i>Crataegus monogyna</i>), maple (<i>Acer sp.</i>) and holly (<i>Ilex aquifolium</i>)
Type 5	A3.1 – Broad-leaved scattered trees (<1% of surface area)	Across the site and within the site boundaries are scattered trees, three of which have been highlighted for their potential for roosting bats. Tree species include field maple (<i>Acer campestre</i>) and oak (<i>Quercus sp.</i>)
Type 6	J2.1.2 – Intact Hedgerow (Species Poor) (1% of surface area)	Species-poor intact hedgerow, with <5 woody species along a typical 30m length, stretch across the site, predominantly to the south-west of the site. The woody component is dominated by blackthorn (<i>Prunus spinosa</i>), hawthorn and field maple. Associated herbaceous plants recorded include foxglove (<i>Digitalis purpurea</i>), cleavers (<i>Galium aparine</i>) and ground ivy (<i>Glechoma hederacea</i>)
Type 7	C3.1 – Tall Ruderal (<1% of surface area)	A small area of this overgrown habitat is present to the east of the farmstead. Discrete areas are also growing from cracks in the hardstanding. Species present include goosegrass, hedge mustard (<i>Sisymbrium officinale</i>) and nettle (<i>Urtica dioica</i>)
Type 8	A1.1.1 – Broad-leaved semi natural woodland (<1% of surface area)	A thin band of woodland is present at the south-west corner of the site. The woodland trees are dispersed across a bank which slopes to the north-west. This narrow stretch of woodland expands from the woodland at Bradbury Farm. Species present include ash (<i>Fraxinus excelsior</i>), silver birch (<i>Betula pendula</i>) and hazel (<i>Corylus avellana</i>). Within the woodland area ground flora is relatively sparse, patches of bramble thicket are present
Type 9	J1.2 - Amenity grassland (<1% of surface area)	The garden areas of the two farm properties comprise this habitat, the sward height of the lawns are relatively short with planted shrubs and trees which include an apple tree (<i>Malus sp.</i>) and elder (<i>Sambucus nigra</i>)
Type 10	J2 – Boundary (Fence) (<1% of surface area)	Post-and-wire fences acting as partially-stock proof site boundaries

- 8.3 Target Notes used to describe habitats not readily conforming to recognised types and evidence of, or suitability for, protected and priority species are described in Table 4.

Table 4: Target Notes

Target Note	Description
Target Note 1	Newly planted hedgerow adjacent to solar farm area, species present include birch, hawthorn, maple and holly. This hedgerow has been planted to enhance existing hedgerow boundary, and also to create new vegetated field margins
Target Note 2	Muck heap within field

Target Note 3	Mature ash tree within wooded area, no bat potential identified at time of survey
Target Note 4	Mature oak tree, no bat potential identified at time of survey
Target Note 5	Rabbit burrow with droppings
Target Note 6	Woodland edge habitat, edge of Ballan Wood
Target Note 7	Semi-mature oak tree, no bat potential identified at time of survey
Target Note 8	Small mammal burrows along field margins
Target Note 9	Line of trees
Target Note 10	Semi-mature hawthorn with old birds' nest
Target Note 11	Semi-mature oak
Target Note 12	Semi-mature hawthorn with old birds' nest

- 8.4 A Phase 1 map showing the habitats, building layout and Target Notes is displayed in Figure 2. Trees identified as having potential for roosting bats are shown in Table 5. Photographs of the site are provided in Appendix III.

Table 5: Trees with potential for roosting bats

Tree number	Description
Tree number 1	Mature oak tree with potential for roosting bats
Tree number 2	Over-mature oak tree with split bark and light ivy coverage
Tree number 3	Over-mature oak tree with split and lifted bark

- 8.5 Most of the survey area comprises a series of agricultural fields that are composed of semi-improved grassland with low species diversity. Agricultural buildings surrounded by hardstanding and discrete areas of ruderal vegetation are present to the west of the site. Boundary features and field margins are made up of semi-natural vegetated boundaries, which include defunct and intact hedgerow boundaries, scattered trees, a thin band of woodland, as well as woodland edge habitat. Although the grassland does not have any intrinsic ecological value in isolation, the boundary features are considered to be of some ecological importance, consequently, the site is assessed to be of moderate ecological value overall. The buildings are considered suitable for protected/priority species, such as roosting bats and nesting birds.
- 8.6 There is a clear lack of vegetated boundaries to the east of the site, where timber fences form the majority of the site and field boundaries. To the west of the site there are a series of hedgerows, which demark the site's boundaries and field margins. Newly planted hedgerows run adjacent to the solar farm park, a likely scheme of enhancement to improve the existing hedgerows and create new boundary features following the solar farm park development. Intact hedgerows across the site are not considered species-rich, since they have fewer than five native species within a specified length. Consequently, they are not classified as important under the Hedgerow Regulations. However, onsite hedgerows have several associated features in accordance with the Hedgerow Regulations, which are considered notable. These include:
- gaps accounting for less than 10% of its length; and
 - connections with other hedgerows and woodland.
- 8.7 The narrow band of woodland present at the south-west corner of the site extends from Crown Hill RAWS, present within Bradbury Farm. Ballan Wood is immediately adjacent to the south-west of the site. Both on site woodland and woodland edge habitat are considered to be of ecological importance.
- 8.8 Although none of the trees on site were assessed as 'veteran' using the principles outlined by Reed (200), four semi-mature trees, three mature trees and two over-mature trees were noted. Three of these trees were assessed as having potential for roosting bats.
- 8.9 Ecological assessment included identification of the potential for protected and priority species to be present on site. [REDACTED]
- 8.10 Hazel dormice are not only a woodland species, but also make use of connecting hedgerows and scrub, both for dispersal and long-term purposes. Although no evidence for the presence of dormice was found during the survey, woodland habitat and hedgerow on site are considered suitable for dormice. Records of field signs for the presence of dormouse were returned from the data search, within the adjacent Ballan Wood.

- 8.11 Reptiles favour tussocky, rank grassland with areas of bare ground, along with carried vegetative architecture. Although the ruderal habitat at the farmstead provides some suitability for reptiles, the heavily grazed grassland does not. Ruderal habitat on site is relatively isolated. No reptiles were found present during the survey.
- 8.12 Amphibians require ponds in which to breed and good quality terrestrial habitat that provides shelter, the grassland on site is not considered suitable and no ponds are present on site. However, since great crested newts are known to use terrestrial habitat up to 500m from their breeding ponds, the wider landscape must also be taken into consideration. From reviewing maps and aerial photographs there is one pond at Crown Hill Nursery, just over 100m from the site, this pond is located the south-east side of the B4245. No records of great crested newt were returned from the data search within 2km of the site.
- 8.13 The hedgerows, trees and woodland on site provide suitable habitat for nesting birds. Although no Section 7 birds were observed during the visit, the habitat is considered suitable for species such as song thrush (*Turdus philomelos*) and house sparrow. A more detailed breeding bird survey earlier in the season would be required to comprehensively assess the site's use by breeding birds.
- 8.14 In terms of habitat quality, the site's woodland, scrub and boundary features are likely to attract sufficient flying insects to provide suitable foraging opportunities for bats. The western part of the site is likely to have dark vegetated corridors and linear connectivity to the wider countryside.
- 8.15 The survey area contains buildings, most of which were assessed during the survey. Table 6 below briefly summarises the suitability of each building for roosting bats as indicated by their condition, presence of Potential Roosting Features (PRFs), evidence of roosting or live sightings. Suitability criteria follows guidelines as stipulated by the Bat Surveys Good Practice Guidelines (Bat Conservation Trust, 2016).

Table 6: Suitability of Buildings for Roosting Bats

Building Ref	Description	Potential Roosting Features (PRFs)/ Evidence of Use	Suitability
1	Detached domestic farmhouse (in-use). Brick built structure, covered with a rough cement render and painted cream. Timber roof structure, with a bitumen felt lining membrane. Asbestos-type roof tiles and concrete ridge tiles	Gaps beneath lead-flashing around chimney, gap at chimney, lifted roof tile and gap beneath ridge tile. No evidence of bats found	Moderate for day-roosting
2	Series of attached out-buildings; The Granary. Brick and concrete block lower, mixed timber and steel frame, covered with corrugated metal sheeting. Stands at the western end of the series of attached out-buildings	Open access to structure via missing doorframe and various holes in structure. One bat dropping found, in addition to a total of eight small tortoiseshell butterfly wings. Several old birds' nests	Confirmed bat roost. Likely night-roost Moderate for day-roosting
	Series of attached out-buildings; Cow Shed. Stone built structure attached to the granary and stone barn. Timber roof frame covered with slate-type tiles	Open access to structure, gaps in stone work, lifted/dropped roof tiles. A single bat dropping found internally. Two swallow (<i>Hirundo rustica</i>) nest and a single grassy nest	Moderate for day-roosting. Suitable for night-roosting
	Series of attached out-buildings; Stone Barn. Stone built barn, with bricked up windows. Timber roof frame covered metal sheeting	Gaps in stone work, gaps at apex. One small tortoise wing found internally. Old bird nest on top of wall plate	Moderate for day-roosting. Suitable for night-roosting
	Series of attached out-buildings; Dutch barn at eastern end of attached buildings. Connected to stone barn via preformed metal sheet covered structure. Sloping roof to rear south side	Ivy coverage. No evidence of bats found	Low-moderate for day-roosting. Suitable for night-roosting
3	Detached domestic farmhouse, to the east of the farmstead	No access provided	Further assessment required

- 8.16 The granary features evidence of roosting bats, with small tortoiseshell butterfly wings and a single bat dropping being found at the western end of the building. This was considered most likely to indicate the presence of an occasional night-roost. The granary also has potential for crevice roosting species, with a number of potential roost features identified during the survey. Similarly,

a single pipistrelle type dropping was found in the cow shed, which is attached to the granary and the stone barn, likely to indicate exploratory/foraging behaviour by another small bat species such as common pipistrelle. Further survey effort on all buildings will be necessary. The farmhouse and the series of attached buildings all have potential for roosting bats, with several roosting opportunities identified during the survey. All of which are assessed to have a 'moderate' level of suitability for day-roosting bats in accordance with current guidelines (Collins, 2016).

- 8.17 Despite the presence of over-mature trees across the site, only three trees were assessed as having potential for roosting bats. Features include split and lifted bark, with light ivy coverage. Since the reasonably rapid walkover survey did not assess trees on site in detail, it is possible additional survey effort in the future may reveal additional trees with potential to support roosting bats, due to the size and age, elevated survey effort may reveal cracks or crevice being found in the future.
- 8.18 No watercourses are within the survey area or directly adjacent to it. The site does not contain suitable cover or foraging habitat for otter. No otter records were returned from the data search.
- 8.19 Within 600m of the site records of polecat and hedgehog, were returned from the data search. The vegetated part of the site provides some suitability for these species. Although no evidence of use was recorded during the site visit, more extensive survey effort would be required to comprehensively assess the site's status for these species.
- 8.20 Over 800m from the site brown-banded carder bee and shrill carder bee have been recorded. No Section 7 invertebrates were found during the survey, and the presence of such species cannot be ruled out without more targeted surveys.

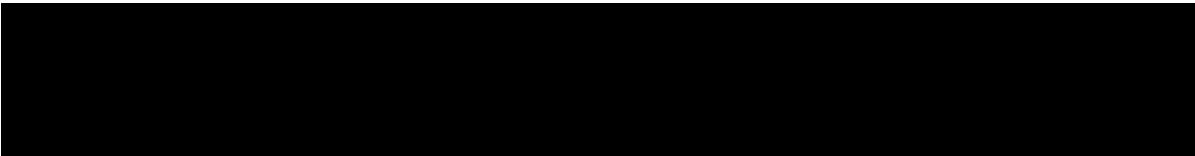
9 Discussion and Conclusions

- 9.1 Land at Oak Grove Farm is being put forward as a candidate site under the Local Development Plan, as part of the Mount Ballan Settlement, which includes plans for a mixed-use settlement. Table 7 below presents a summary table for ecological features identified at Oak Grove Farm. Where further survey is or may be required, this is indicated in the relevant column.

Table 7: Summary of Ecological Features

Habitat	Ecological Value	Further Survey
Semi-improved neutral grassland	Makes up the majority of the site, not of intrinsic ecological value in itself but potentially valuable to other protected/priority species such as song thrush, although this has not been confirmed	No
Trees	Three trees on site have potential for roosting bats. Trees also potentially valuable to other protected/priority species such as nesting birds	Yes. Bats
Tall ruderal	A discrete patch of this habitat is present adjacent to the farmstead to the west of the site. Potential for invertebrates	Possibly invertebrates
Hedgerow	Semi-natural habitat forms the boundary and field margins across the site. Hedges are a mix of intact or defunct and species poor, potentially valuable to protected/priority species such as nesting birds, foraging bats and possibly dormouse	Yes, if impacts cannot be avoided. - Dormouse - Foraging and commuting bats
Woodland	A thin band of habitat that expands from Crown Hill Wood present within Bradbury Farm. This habitat is potentially valuable to protected/priority species such as nesting birds, dormouse, foraging and commuting bats and badger	Yes, if impacts cannot be avoided. Dormouse
Buildings	A series of buildings on site are considered suitable for nesting birds and roosting bats.	Yes Bats
Protected/Priority Species		
Water vole	Site considered unsuitable and of negligible value for this species	None
Dormouse	Suitability provided by woody habitats around site periphery. Field signs for the presence of dormouse have been found within adjacent Ballan Wood – as shown from data search	Yes, if impacts cannot be avoided

Other Section 7 Mammals (excluding bats)	The habitats provide some suitable habitat for species such as European hedgehog and polecat	None
Bats (Roosting)	Three trees present to the south-west corner of the site, have PRFs	Yes, if impacts cannot be avoided
Bats (Foraging/commuting)	Hedgerow corridors likely to be of some value to foraging and commuting bats	If impacts, including lighting, cannot be avoided
Birds (nesting)	Hedgerow, woodland, trees and scrub are suitable for breeding efforts of birds	Breeding bird survey
Section 7 Birds	Habitats on site considered suitable for house sparrow, dunnock and song thrush	Breeding bird survey is likely to flag up presence of these species
Reptiles	Unsuitable grassland due to relatively short sward height. Ruderal areas have potential; however, these are relatively isolated in a wider landscape context. A single reptile record of grass snake, recorded over 800m from the site	None
Amphibians	Some limited suitability for widespread amphibians. No great crested newt records within 2km of the site were returned from the data search. No ponds on site. Habitat on site is considered unsuitable, although the southern edge of the site is highlighted as existing great crested newt connectivity by MCC	None
Invertebrates	Some suitability for invertebrate communities in discrete habitat types	Possibly. Entomologist to assess likelihood of usage due to low sward height and small areas of tall ruderal habitat
Otter	No watercourses are present within or adjacent to the site	None

- 9.2 The desktop study and field survey results were both used to evaluate the ecological value of the site's different habitat and species in accordance with Monmouthshire County Council's own evaluation criteria described in 'Guidelines for the Selection of Wildlife Sites in South East Wales' (Gwent Wildlife Trust, 2004). A completed Site Summary Form is proved in Appendix IV. Different habitat types and species groups have been assessed separately using the available information. An overall site value for biodiversity is also defined.
- 9.3 Although the thin band of woodland to the south-west of the site expands from Crown Hill RAWs into Bradbury Farm, it is not possible to conclusively determine whether this section of woodland at Oak Grove Farm is ancient. It is however of ecological value. This habitat type accounted for only a small proportion of the site, and therefore is not considered to be sufficiently substantive in terms of nature conservation value to warrant the site's designation as a Wildlife Site in isolation. There is plenty of scope for this habitat to be safeguarded and potentially enhanced.
- 9.4 None of the other habitats on site – including the areas of grassland, ruderal vegetation and scrub – were particularly valuable. Although all hedgerows have some intrinsic ecological value to a certain extent, all hedgerows on site are species poor and would not alone warrant the site's selection as a SINC habitat. None of these habitats featured the botanical diversity necessary to meet the standard criteria as Section 7 habitats. Nevertheless, they were suitable for other protected/priority species so did possess ecological value in this context
- 9.5 
- 9.6 Although no evidence of hazel dormice was recorded during the survey, habitat on site suitable. Records of field signs for the presence of dormice was returned from the data search in the adjacent Ballan Wood. The dispersal of dormice into on-site woody habitat is considered possible. Consequently, further survey effort would be required ahead of any planning proposal, unless impacts on connecting hedgerows and woodland can be avoided completely, including lighting. Although further survey effort is therefore likely to be required ahead of any planning proposal, there is nonetheless plenty of scope for avoiding or mitigating impacts to this species.
- 9.7 A single reptile record was returned from the data search, over 800m away from the site. Although ruderal habitat is present on site, in an area adjacent to the farmstead, this patch of habitat is relatively isolated in a greater landscape context. It is therefore considered unlikely that reptiles are present on site. In the case of amphibians, although there are no ponds on site there is one

pond present within 500m of the site. This pond is situated approximately 100m south-east, on the other side of the B4245. It is likely the southern edge of Oak Grove Farm has been highlighted for its connectivity for great crested newts as part of the MCCs Ecological Connectivity Assessment as a result of the proximity of the site to this pond. However, the habitats on site by way of open, short-sward grassland with limited hedgerows within the highlighted area are not considered suitable for great crested newts. The B4245 is considered to be a potential barrier to their movement, from habitat that is considered more suitable, within close proximity to the pond at Crown Hill Nursery. It is therefore, considered unlikely that great crested newts are using Oak Grove Farm at this time.

- 9.8 Although no Section 7 birds were observed during the site visit, hedgerow, trees and woodland on site provide suitable nesting habitat. All breeding birds, their active nests and their eggs are protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended) and it is an offence to damage, destroy or disturb an active nest. Birds must be allowed permanent access to the nest site until all chicks have fledged. Only when the nest is no longer in active use can it be destroyed and removed. Without a more focused breeding bird assessment in the spring or early summer months, it is not possible to formally assess the site for the breeding birds listed on Table 9 (Gwent Wildlife Trust 2004). Although it is feasible that on-site habitats may provide nesting opportunities for some of these species, as well as other Section 7 birds, it would not be reasonable for the site to be selected on this basis alone since the extent and quality of on-site habitats are unlikely to be of critical importance for these species. Although some further survey effort is recommended ahead of any future planning application, there would nonetheless be scope for safeguarding nesting birds on site.
- 9.9 The farmhouse and the series of attached outbuildings that includes the granary, stone barn, and cow shed in addition to the second farmhouse that was unassessed due to access restrictions, all feature opportunities for roosting bats, with several PRFs being noted during the survey. These were all assessed as having a 'Moderate' level of suitability in accordance with BCT's Bat Surveys Good Practice Guidelines (Collins 2016). The agricultural livestock sheds were noted as having negligible levels of suitability.
- 9.10 Considering the presence of a night roost and potential for day roosting by bats on site, more comprehensive survey effort must be implemented prior to planning approval to assess the numbers, species and status and precise locations of bat roosts on site. Any roost removal or modification would require a detailed mitigation strategy approved by NRW as part of a formal EPS licence application. An important component of this would be that suitable alternative roosting structures are integrated into revised layout plans.
- 9.11 This Preliminary Ecological Appraisal indicates the site has some ecological value as far as roosting bats are concerned. However, this alone is not considered sufficient to warrant the site's selection as a Wildlife Site unless roosting bat numbers and diversity are 'significant' in accordance with Table 8 of the guidelines produced by Gwent Wildlife Trust (2004). It is proposed that its allocation is re-assessed after further survey effort has established the relative importance of any on-site roosts in the context of the surrounding area. If any such roosts are recorded, there is likely to be scope for safeguarding roosting bats with an appropriate mitigation strategy.
- 9.12 Although most trees on site were classified as having 'negligible' suitability for roosting bats (Collins 2016), three trees to the south-west of the site were assessed as having some suitability, with the presence of PRFs. Such features can develop very quickly in trees of a certain size and age, so elevated survey effort may reveal cracks or crevices being found in the future. The south-west corner of the site is likely to be dark with numerous vegetated features.
- 9.13 Oak Grove Farm has some potential for forming part of the territory for polecat. However, since this species' territory is so large (16-500ha), such a site is unlikely to form a critical component for foraging or breeding. No further survey effort is recommended and it would not be reasonable for the occasional presence of this species to form the basis of Wildlife Site selection.
- 9.14 Several records of Section 7 invertebrates, including shrill carder bee and the brown-banded carder bee were returned from the data search, over 800m from the site. It is recommended that an entomologist is consulted to assess the site's potential for rare, UK Red Data Book or Nationally Scarce invertebrates prior to a planning application.
- 9.15 Overall, using MCC's Evaluation Criteria, Oak Grove Farm has been assessed as having medium value. Although further survey effort is required to more comprehensively assess ecological

features (Table 7), only discrete parts of the site were of borderline SINC quality and a small part of SINC quality. It is considered unlikely that further survey information would trigger the site's upgrade from 'medium' to 'high' value even if additional species were recorded. Furthermore, despite the potential for ecological impacts on protected and priority species, there is no reason why such impacts could not be avoided or appropriately mitigated with a well-conceived design layout and responsible build/management strategy. Indeed, the site's allocation is likely to present several opportunities for ecological enhancements. Overall, this baseline assessment presented no major ecological constraints that would prevent the site's LDP allocation.

10 Recommendations

- 10.1 Below is a summary of the recommended further survey effort for more comprehensively assessing ecological impacts prior to a formal planning application.

Table 8: Summary of Recommended Further Survey

Species/Habitat Feature	Scope of Work	Timescale
Bats	Further survey effort must be completed if any trees are to be removed, in order to fully assess the impacts on roosting bats in trees on site. Further survey is also required for the farmhouse and series of outbuildings	May to September
Breeding birds	An initial 'scoping' breeding bird survey between mid-March to mid-April, by an experienced ornithologist to assess the extent to which Section 7 or Red Listed bird species may be impacted. The results of this must be used to inform whether any further survey effort would be reasonable and proportionate for informing a suitable mitigation strategy, LEMP proposals and/or artificial nesting provisions	Mid-March to mid-April
Dormouse	If impacts on hedgerows and scrub are anticipated, a dormouse-nest tube survey must be considered for establishing the presence or absence of this species prior to a planning application	April to November for standard nest-tube surveys
Invertebrates	Initial desk-based study or 'scoping' survey by an experienced entomologist to assess the site's potential value to invertebrate fauna and whether the layout design and/or mitigation proposals for any future development would benefit from more focussed and detailed survey effort	To be confirmed by appointed entomologist

- 10.2 Since the site is situated immediately adjacent to Ballan Wood SINC, any future proposals must adequately mitigate for any possible damage to the habitat, by for example a Construction and Environmental Management Plan (CEMP). Protection of the small woodland area as a valuable habitat in itself and an extension of the SINC must be ensured, with adequate buffers being provided during and post construction. Similarly, newly planted hedgerow to the west of the site, likely planted as part of the solar farm development, will need to be retained and safeguarded.
- 10.3 Although habitats and their subsequent management would inevitably change following any future development, this would not necessarily affect the structure or function of the woodland areas providing appropriate safeguards and management processes were put in place. In particular, the following is recommended:
- any future layout design must, as a minimum, allow for the protection of these areas following guidance set out by British Standards (BS 5837:2012 Trees in relation to design, demolition and construction). This would ensure these features are suitably protected from any direct physical damage during construction;
 - the existing woodland could also be reinforced by planting additional woodland habitat adjacent the western and southern boundaries with native woodland species such as oak, hazel, blackthorn, hawthorn, holly and field maple.
- 10.4 Where impact to vegetated features, including lighting, such as hedgerow and trees cannot be avoided, further assessment is required. Future landscape proposals must be informed by the results of further surveys for dormice, nesting birds, bats and invertebrates.
- 10.5 A landscape and environmental management plan (LEMP) must cover how retained and newly planted habitats will be managed in the long-term. The LEMP must also set out any measures necessary to ensure protected species, such as roosting bats, are appropriately safeguarded.
- 10.6 Since part of the site is highlighted in MCCs Ecological Connectivity Assessment (Gwent Ecology, 2010), it is recommended that a wildlife pond is integrated into the final layout of the development. If designed and managed appropriately, such a feature would provide a significant enhancement

measure to the site and possibly the local area by providing valuable habitat for amphibians, aquatic plants and invertebrates such as dragonflies and damselflies.

11 References

Anon (2010). *'Ecological Connectivity Assessment of Settlements in Monmouthshire Report'*. Gwent Ecology, Monmouth

Anon (2017). *'Guidelines for Preliminary Ecological Appraisal - 2nd Edition'*. Chartered Institute of Ecology and Environmental Management, Winchester

Collins, J. (Ed.) (2016). *'Bat Surveys for Professional Ecologists – Good Practice Guidelines, 3rd Edition.'* Bat Conservation Trust, London

Anon (2004). *'Guidelines for the Selection of Wildlife Sites in South Wales'*. Gwent Wildlife Trust, Monmouth

Joint Nature Conservation Committee (1993). *'Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit'*. JNCC, Peterborough

Natural England (2010). *'Farm Environment Plan (FEP) Manual - Third Edition'*. Natural England, Peterborough

Reed, H (2000). *'Veteran Trees: A Guide to Good Management'*. Natural England, Peterborough

Rose, F. (1981). *'The Wild Flower Key'*. Frederick Warne, London

Appendix I: Site Plans

Figure 1: Site location plan



Aerial View of the Site

Site Reference:
GEN1619e

Map Scale:
1:25,000 & 1:25000

Source:
© Google Satellite Imaging
2019



Legend

- Site location
- Site boundary

Appendix II: Survey Findings

Figure 2: Phase 1 habitat map



Legend

- ✕ Trees with bat potential
- ⊙ Target notes
- A3.1 - Broadleaved scattered trees
- J2.1.2 - Intact hedge - species-poor
- - - J2.2.2 - Defunct hedge - species-poor
- J2.4 - Fence
- Building requiring further assessment
- C3.1 - Other tall herb and fern - ruderal
- J1.2 - Cultivated/disturbed land - amenity grass
- J3.6 - Buildings
- J5 - Other habitat
- A1.1.1 - Broadleaved woodland - semi-natural
- B6 - Poor semi-improved grassland

Phase 1 Habitat Survey Map

Project reference:
GEN1619e

Map scale:
1: 10000

Source:

© Google Satellite Imaging (2019)

Just
MAMMALS
Consultancy
Limited Liability Partnership

Figure 3: Plan of buildings surveyed



Aerial View of the Site

Site Reference:
GEN1619e

Map Scale:
1:1500

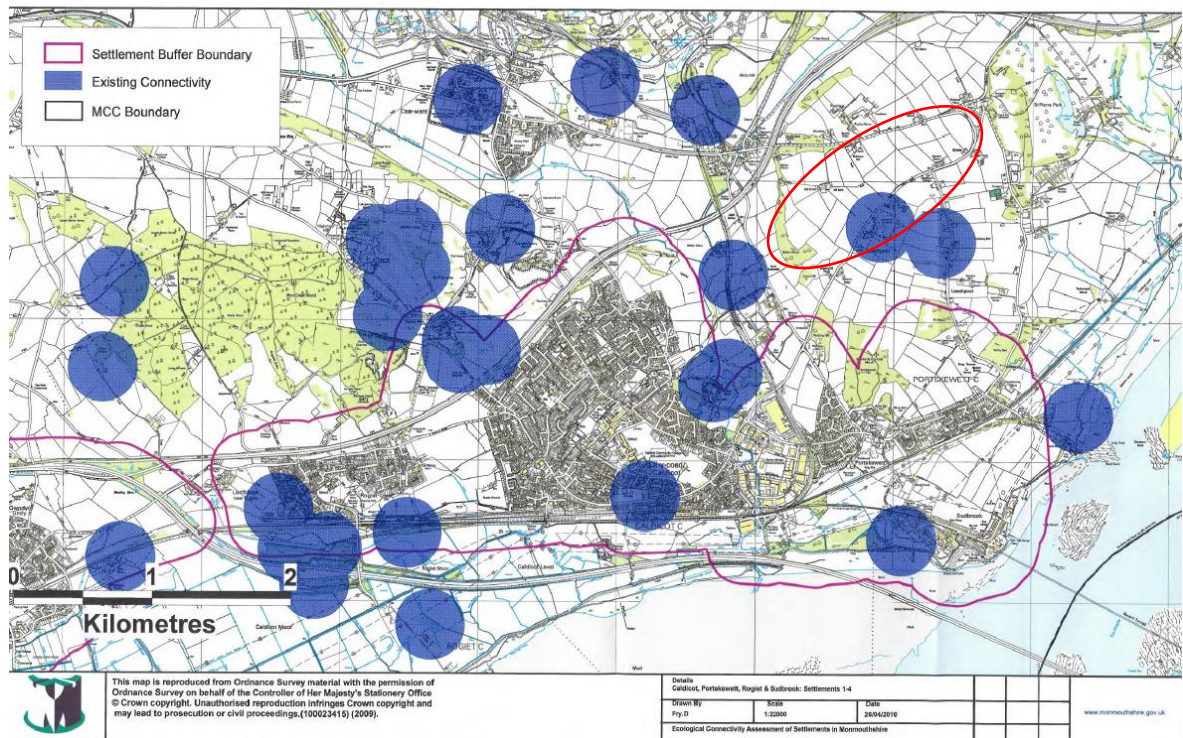
Source:
© Google Satellite Imaging
2019



Legend

- Boundary of site
- Building needing further assessment

Figure 4: Page 38 of MCC's ecological connectivity assessment with Oak Grove Farm highlighted by the red circle
Caldicot, Portskewett, Rogiet & Sudbrook: Great Crested Newt & Ponds Connectivity Map



Appendix III: Site Photographs

Plate 1: Hedgerow to the north of the site



Plate 2: Woodland area to the south-west of the site



Plate 3: Newly planted hedgerow to the west of the site



Plate 4: Farmhouse (in-use), west of site



Plate 5: Farmhouse (in-use) loft space



Plate 6: The Granary, southern elevation



Plate 7: Small tortoiseshell butterfly wing, in Granary



Plate 8: Attached outbuildings, looking south-west



Plate 9: South side attached outbuildings



Plate 10: Agricultural sheds, to south of farmstead



Plate 11: Lifted lead flashing around chimney of Farmhouse



Plate 12: Gap in stonework of Stone Barn



Plate 13: Looking east across the site



Appendix IV: Site Summary Form**Reference No: CS/0000**

Site General Information			
Name: Oak Grove Farm		Grid Reference: ST 49832 90071	
Current land use and management: Agriculture, livestock grazing		Size: 51.66Ha	
Proposed use: mixed-use settlement		Form Completed by: Just Mammals Consultancy LLP	
Overall Site Evaluation: HIGH / MEDIUM / LOW			
Site Summary Table			
Statutory Designated Site(s)	No	Section 7 Habitat(s)	Part
SAC Juvenile sustenance zone	No	Protected Species	Yes
Non Statutory Designated Site(s)	Yes	Section 7 Species	Yes
SINC Recommendation	Bord	Ecological Connectivity	Conn
SEWBRc unique data code: 0190-389			

Statutory Designated Sites

Is the site within or adjacent to an International or European Designated Site? (Special Protection Area, Ramsar Site or Special Area of Conservation) (*Underline the relevant designation*)

Whole of site	☐
Part of site	☐
Directly adjacent/within 250m buffer	☐
Within 500m buffer	☐
Within 1km buffer	☐
No	☒

Is the site within or adjacent to a Nationally Designated Site? (National Nature Reserve or Site of Special Scientific Interest) (*Underline the relevant designation*)

Within	☐
Part of site	☐
Directly adjacent/within 250m buffer	☐
Within 500m buffer	☐
No	☒

Juvenile sustenance zones – is any part of the site within 1km of a greater horseshoe bat roost SSSI or within 600m of a lesser horseshoe bat roost SSSI?

Greater Horseshoe	☐
Lesser Horseshoe	☐
Distance from roost (m)	☐
No	☒

Non Statutory Designated Sites

Is the site within or adjacent to a pre-designated Locally Designated Site? (Local Wildlife Site/Site of Importance for Nature Conservation or Ancient Semi Natural Woodland)

Within	☐
Part of site	☐
Directly adjacent/within 250m buffer	☒
Within 500m buffer	☐
No	☐

List All Relevant Statutory and Non-Statutory Designated Sites identified by the desktop study:

Bush Close (SSSI)
Dinham Meadows (SSSI)
Gwent Levels – Magor and Undy (SSSI)
Nedern Brook Wetlands, Caldicot (SSSI)
Ballan Wood (ASNW and RAWS);
Sunny Bank (ASNW).

SINC Recommendation

Is the whole site or part of the site of SINC (LWS) quality? (*Underline whole or part as appropriate*)

Yes: ☐ Whole: ☐ Part: ☐

Qualifying criteria:

Borderline:

☒

No:

☐

Has the Monmouthshire County Council Biodiversity & Ecology Team been contacted to discuss what further information may be required?

Yes: ☐ No: ☒

Date:

Priority Habitats and Important Features

Phase 1 Habitat	Wales Priority Habitat (Section 7)	% of whole site
A1 Broadleaved semi-natural woodland	Lowland Mixed Deciduous Woodland	~0.3%
J2.1.2 Hedgerow intact, species poor	Hedgerow	~1%

Are there any **veteran trees or over-mature trees** on site?

Yes: ☒

No: ☐

If 'Yes' how many and what species?

2 x over-mature oak trees

Does the site have any **hedgerows**?

Species-rich (high) potential
Hedgerow Regs Quality

0 Length (m)

Species-poor (medium)
Has some potential

~2500 Length (m)

Species-poor (low)
Single species dominant AND Gappy

~357 Length (m)

No

Does the site have any **water features** present?

Ponds

Streams

Ditches

Other:

No

☒

Ecological Connectivity

Adjacent Land Uses and Habitats

The surrounding landscape is typically rural and primarily characterised by pastoral farmland, with a solar farm situated immediately north-west of the site. Mount Ballan Wood is immediately west of the site. The A48 stretches around the northern end of the site, while the B4245 stretches around the eastern and southern sides of the site

Does the site have any ecological connectivity value to either adjacent habitat or the wider landscape?

Critical connectivity: ☐ Existing connectivity: ☒ No connectivity: ☐

Connectivity Opportunity: ☐

Protected Species

Have protected species been recorded at the site/reasonably likely to be present at site?

Confirmed: ☒ Reasonably likely: ☐ No and unlikely to be present: ☐

List Species:	Evidence of presence on site (seen directly or field signs)	Potential to be present on site (habitat and location mean that it is likely)
SEWBreC record	Bats (pipistrelle sp.) Nesting birds	Dormouse Badger

Priority Species

Are there records for Priority (Section 7) Species (not included above)?

Yes: ☒ Potential: ☐ No: ☐

List Species:	Evidence of presence on site (seen directly or field signs)	Potential to be present on site (habitat and location mean that it is likely)
SEWBreC record		European hedgehog Invertebrates

Conclusions

What additional ecological surveys/assessments will be required?

To determine if the site could be allocated for the purpose identified None	Prior to the submission of planning application to influence site design etc. Further bat roost surveys of buildings and trees. Dormouse nest-tube surveys (if impacts cannot be avoided). Breeding bird assessment. Invertebrate assessment.
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Summary of potential biodiversity constraints

Habitats: Broadleaved semi-natural woodland; hedgerow; scattered trees (mature/over-mature).

Protected/Priority species (confirmed): Roosting bats and nesting birds.

Protected/Priority species (reasonably likely): dormouse; European hedgehog, badger

Protected/Priority species (unlikely, but precautionary approach recommended): invertebrates.

Recommended avoidance/mitigation/compensation measures

Design layout to avoid and protect the Root Protection Areas (RPAs) of adjacent woodland habitat as set out by British Standards (BS 5837:2012 Trees in relation to design, demolition and construction).

Any future landscape proposals (including appropriate compensation measures if necessary) to be informed by the results of further protected species surveys including dormouse (if necessary), bats, breeding birds and invertebrates.

A landscape and environmental management plan (LEMP) for the operational site to cover how retained, newly planted habitats and species-specific measures will be managed in the long-term.

Any future layout proposals (including appropriate compensation measures if necessary) to be informed by the results of a more comprehensive site-wide bat roost assessment.

Enhancements that could be delivered through development including ecological connectivity opportunities

Reinforce existing woodland with additional planting.

A permanent wildlife pond to be integrated into the layout and managed appropriately in the long-term.

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Natural Problem Solvers

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