Appendix 6.1: Planning Policy and Legislation

Environment (Wales) Act 2016

The Environment (Wales) Act 2016 passed into law in March 2016. Part 1 of the Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

Section 6 of the Act places a duty on public authorities to '*seek to maintain and enhance biodiversity*' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to '*promote the resilience of ecosystems*'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience. This is expanded on in sub-section (2):

In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects—

- diversity between and within ecosystems;
- the connections between and within ecosystems;
- the scale of ecosystems;
- the condition of ecosystems (including their structure and functioning);
- the adaptability of ecosystems.

Section 7 concerns biodiversity lists and the duty to take steps to maintain and enhance biodiversity. It replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

Planning Policy Wales 11

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is periodically revised. The latest iteration is PPW version 11 (February 2021).

The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation and resultant duties.

Biodiversity and Ecosystem Resilience

PPW sets out to outline the planning system's role in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. The following are key principles:

- Biodiversity and resilience considerations should be taken into account at an early stage in both development plan preparation and when proposing or considering development proposals.
- "*All reasonable steps must be taken to maintain and enhance biodiversity and promote the resilience of ecosystems and these should be balanced with the wider economic and social needs of business and local communities. Where adverse effects on the environment cannot be avoided or mitigated, it will be necessary to refuse planning permission.*"

- Planning Authorities should refer to up to date ecological survey information.

The Section 6 Duty

PPW further sets out that planning authorities must demonstrate that they have sought to fulfil the duties and requirements of Section 6 of the Environment Act by taking all reasonable steps to maintain and enhance biodiversity in the exercise of their functions. PPW set out that this means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.

- In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:
    - diversity between and within ecosystems
    - the connections between and within ecosystems
    - the scale of ecosystems
    - the condition of ecosystems including their structure and functioning; and • the adaptability of ecosystems.
- In fulfilling this duty, planning authorities must have regard to:
    - the list of habitats and species of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016;
    - the SoNaRR, published by NRW; and
    - any Area Statement that covers all or part of the area in which the authority exercises its functions.

Designated Sites

PPW states that planning authorities must have regard to the relative significance of international, national and local designations in considering the weight to be attached to nature conservation interests. PPW sets out:

- Statutory designation of a site does not necessarily prohibit development, but proposals must be carefully assessed to ensure that effect on those nature conservation interests which the designation is intended to protect are clearly understood; development should be refused where there are adverse impacts on the features for which a site has been designated.
- Statutorily designated sites must be protected from damage and deterioration, with their important features conserved and enhanced by appropriate management. The contribution of the designated site to a wider network of resilient ecosystems should be recognised and captured as part of policy and decision making.
- Before authorising development or adopting a land use plan which is likely to have a significant effect on a Special Area of Conservation (SAC) or Special Protection Area (SPA) (including where outside the boundary of the SAC or SPA), planning authorities must carry out an appropriate assessment of the implications for the designated features, consult NRW and have regard to NRW's representations. The development can normally only be authorised or the plan adopted, if the planning authority ascertains that it will not adversely affect the integrity of the site, if necessary taking into account any additional measures, planning conditions or obligations.
- There is a presumption against development likely to damage a Site of Special Scientific Interest (SSSI) and this presumption should be appropriately reflected in development plans and development management decisions.
- Non-statutory designated sites should be given adequate protection in development plans and the development management process. Before authorising development likely to damage a local wildlife designation, planning authorities should give notice of the proposed operation to the County Ecologist and third sector environmental organisations. Policies for non-statutory sites should make it clear that such designations do not preclude appropriate developments, where there are no adverse impacts on the features for which a site is designated.

Maintaining and Enhancing Biodiversity

PPW states that planning authorities must follow a stepwise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible. Where the adverse effect of development on the environment clearly outweighs other material considerations, the development should be refused.

The following principles apply:

- Damage to biodiversity and ecosystem functioning should be avoided and alternatives considered.
- Planning authorities should ensure that features and elements of biodiversity or green infrastructure value are retained on site, and enhanced or created (wherever possible), by adopting best practice site design and green infrastructure principles.
- Planning authorities should take care to ensure that any conditions necessary to implement this policy are, relevant to planning, relevant to the development to be permitted, enforceable, precise, and reasonable in all other respects.
- When all other options have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes, offsite compensation for unavoidable damage must be sought.
- This should normally take the form of habitat creation, or the provision of long-term management arrangements to enhance existing habitats and deliver a net benefit for biodiversity. It should also be informed by a full ecological assessment before habitat creation or restoration starts.
- Where possible, a landscape-scale approach, focusing on promoting wider ecosystem resilience, should help guide locations for compensation. This exercise will determine whether locations for habitat compensation should be placed close to the development site, or whether new habitat or additional management located further away from the site would best support biodiversity and ecosystem resilience at a wider scale.
- Where compensation for specific species is being sought, the focus should be on maintaining or enhancing the population of the species within its natural range. It should also be accompanied by a long term management plan of agreed and appropriate mitigation and compensation measures.

Protected Species

With regard to protected species PPW states:

- A species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.
- Planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site, and potentially the surrounding area, concerned.
- An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the development management process. It is considered best practice that screening to determine the presence of protected species should be carried out by a competent ecologist on the basis of data provided by the relevant Local Environmental Record Centre.

Developments are always subject to the legislation covering European protected species. Proposals for which development works would contravene the protection afforded to European protected species require derogations from the provisions of the Habitats Directive. A derogation may only be authorised if there is no satisfactory alternative and if the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

Trees, Woodland and Hedgerow

PPW sets out:

- Planning authorities should consider the importance of native woodland and valued trees, and should have regard, where appropriate, to local authority tree strategies or SPG.
- Permanent removal of woodland should only be permitted where it would achieve significant and clearly defined public benefits. Where woodland or trees are removed as part of a proposed scheme, developers will be expected to provide compensatory planting.
- Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits; this protection should prevent potentially damaging operations and their unnecessary loss.
- In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW.

TAN 5 Nature Conservation and Planning

Technical Advice Note (TAN) 5 supplements Planning Policy Wales and provides advice about how the land use planning system in Wales 'should contribute to protecting and enhancing biodiversity and geological conservation.'

The TAN provides guidance to local planning authorities on: 'the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and, development affecting protected and priority habitats and species.'

In section 2.4 when deciding planning applications that may affect nature conservation, 'local authorities should:

- contribute to the protection and improvement of the environment…seeking to avoid irreversible harmful effects on the natural environment;
- ensure that appropriate weight is attached to designated sites of international, national and local importance;
- protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of a development on nature conservation;
- ensure that the range and population of protected species is sustained;
- adopt a stepwise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered.'

At section 3.3.2 regarding Local Development Plans policies the guidance states that a policy should be included in respect of the application of the precautionary principle.

Section 4 includes specific and detailed guidance, expanding on the principles set out in 2.4, in respect of the development control process including pre-application discussions, preparing planning applications, requests for further information and ecology in respect of Environmental Impact Assessment (EIA). The broad principles of development control requirements are set out as follows:

- ‘adopting the five-point approach to decision-making – information, avoidance, mitigation, compensation and new benefits;
- ensuring that planning applications are submitted with adequate information, using early negotiation, checklists, requiring ecological surveys and appropriate consultation;
- securing necessary measures to protect, enhance, mitigate and compensate through planning conditions and obligation;
- carrying out effective panning enforcement; and
- identifying ways to build nature conservation into the design of new development.’

Greater Gwent Nature Recovery Action Plan (GGNRAP)

The GGNRAP covers the county boroughs of Caerphilly, Torfaen, Blaenau Gwent, Newport, Monmouthshire and part of the Brecon Beacons National Park Authority’s administrative area. It aims to address the main drivers of biodiversity loss, build ecosystem resilience for the region, and facilitate nature recovery at the landscape and regional scales. Objectives are to:

- Engage and support participation and understanding to embed biodiversity throughout decision making at all levels.
- Safeguard species and habitats of principal importance and improve their management.
- Increase the resilience of our natural environment by restoring degrading habitats and habitat creation.
- Tackle key pressures on species and habitats
- Improve our evidence, understanding and monitoring of species and habitats to inform nature recovery actions
- Put in place a framework of governance and support for delivery of nature recovery

Actions, outcomes and suggested mechanisms for delivery of these are included in the Plan.

Torfaen Local Development Plan (LDP)

Policy S7 of the adopted Torfaen LDP (2013) states:

“Development proposals should seek to ensure the conservation and enhancement of the Natural, Built & Historic Environment of Torfaen, in particular:

a. Biodiversity resources;
b. Geodiversity resources;
c. Water environment;
d. Landscape setting;
e. Character of the built environment; and
f. Historic assets

The LDP indicates that Policy BW1 should be referred to when assessing impacts on European designated sites, policies BW1 and BG1 when assessing impacts on SINCs and Local Nature Reserves, and policy BW1 when considering impacts on ecological networks.

Policy BW1 (Part B) states:

All development proposals will be considered favourably providing they comply with the following criteria where they are applicable

a. The proposal does not result in unacceptable adverse effects in respect of land contamination, instability or subsidence; air, heat, noise or light pollution; landfill gas; water pollution; or flooding, from or to the proposal;

b. The proposal does not result in significant adverse effects on the integrity of a European designated site or its designated features in the context of the site's conservation objectives;

c. The proposal does not result in a significant adverse effect on a nationally designated site

d. The proposal contributes to the conservation and/ or enhancement of the strategic biodiversity network of Torfaen and does not result in a significant adverse effect on the network

e. The proposal does not result in the unacceptable loss or harm to features of landscape importance including trees and woodland that have natural heritage or amenity value; and

f. The proposal does not have an unacceptable adverse impact upon the water environment or pose an unacceptable risk to the quality and quantity of controlled waters (including groundwater and surface water), and where practicable and reasonable improves water quality.

Supplementary Planning Guidance issued by Torfaen County Borough Council on Biodiversity, Ecosystem Resilience and Development (2023)

The guidance sets out that financial contributions may be levied from development proposals by the LPA. The scale of these will depend on the development type and characteristics and its potential impact on ecology and biodiversity. The guidance further states that there is no standard threshold or trigger for such payments, and as such, discussion with the Council as to the likelihood of such a contribution should be initiated at the earliest opportunity.

Caerphilly County Borough Local Development Plan (2010)

There are a number of policies concerning biodiversity within the Local Development Plan. These are:

- Policy SP10, which states, "*The Council will protect, conserve, enhance and manage the natural heritage of the County Borough in the consideration of all development proposals within both the rural and built environment.*"
- Policy CW4, which states, "Development proposals that affect locally designated natural heritage features, will only be permitted:
    - A Where they conserve and where appropriate enhance the distinctive or characteristic features of the Special 2 49 Landscape Area (SLA) or Visually Important Local Landscape (VILL).
    - B Within, or in close proximity to sites designated as Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), Regionally Important Geological Sites (RIGS), Green Corridors, or Local Priority Habitats and Species, where proposals either:
        - i Conserve and where appropriate enhance the ecological or geological importance of the designation, or
        - ii Are such that the need for the development outweighs the ecological importance of the site, and where harm is minimised by mitigation measures and offset as far as practicable by compensation measures designed to ensure that there is no reduction in the overall value of the area or feature."
- Policy CW5 concerns protection of the water environment and states, "Development proposals will only be permitted where:
    - A They do not have an unacceptable adverse impact upon the water environment, and
    - B Where they would not pose an unacceptable risk to the quality of controlled waters (including groundwater and surface water)"

- Policy CW6 Concerns trees, woodland and hedgerow protection, and states, "Development proposals on sites containing trees, woodlands and hedgerows, or which are bordered by one of more such trees or hedgerows, will only be permitted provided that:
    - A Where arboricultural surveys are required, they are submitted and approved, including any mitigation, compensation or management requirements, as part of the planning application.
    - B Root systems will be retained and adequately protected for the duration of all development activity on site.
    - C Development proposals have made all reasonable efforts to retain, protect and integrate trees, woodlands or hedgerows within the development site.
    - D Where trees, woodlands or hedgerows are removed, suitable replacements are provided where appropriate.

Caerphilly and Torfaen Biodiversity Action Plans (BAPs)

The BAPs provide a framework for nature conservation within Caerphilly and Torfaen. Both the Torfaen and Caerphilly BAPs are dated (2003).

The aim of the LBAPs is to focus on conserving habitats in order to maintain and enhance biodiversity. The documents provide action plans for habitats of national and/or international importance, those that support Section 7 species, are of local importance (habitats that are rare, in decline and/or under threat) species of national and/or international importance, Section 7 species and species listed in the Birds of Conservation Concern/IUCN red lists) or of particular local importance.

European protected species (Animals)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

"European protected species" (EPS) of animal are those which are shown on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are subject to the provisions of Regulation 43 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

g. Intentionally or deliberately capture, injure or kill any wild animal included amongst these species

h. Possess or control any live or dead specimens or any part of, or anything derived from a these species

i. deliberately disturb wild animals of any such species

j. deliberately take or destroy the eggs of such an animal, or

k. intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place

For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—

a. to impair their ability—
    i. to survive, to breed or reproduce, or to rear or nurture their young, or
    ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

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

Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in England are currently determined by Natural

England (NE) for development works and by Natural Resources Wales in Wales. In accordance with the requirements of the Regulations (2017, as amended), a licence can only be issued where the following requirements are satisfied:

c. The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'

d. 'There is no satisfactory alternative'

e. The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Definition of breeding sites and resting places

Guidance for all European Protected Species of animal, including bats and great crested newt, regarding the definition of breeding and of breeding and resting places is provided by The European Council (EC) which has prepared specific guidance in respect of the interpretation of various Articles of the EC Habitats Directive.[1] Section II.3.4.b) provides definitions and examples of both breeding and resting places at paragraphs 57 and 59 respectively. This guidance states that 'The provision in Article 12(1)(d) [of the EC Habitats Directive] should therefore be understood as aiming to safeguard the ecological functionality of breeding sites and resting places.' Further the guidance states: 'It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.'

Badger

Badger is protected under the Protection of Badgers Act 1992. It is not permitted to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it. A badger sett is defined in the legislation as "a structure or place, which displays signs indicating current use by a badger".

ODPM Circular 06/2005[2] provides further guidance on statutory obligations towards badger within the planning system. Of particular note is paragraph 124, which states that "The likelihood of disturbing a badger sett, or adversely affecting badgers' foraging territory, or links between them, or significantly increasing the likelihood of road or rail casualties amongst badger populations, are capable of being material considerations in planning decisions."

Natural England provides Standing Advice[3], which is capable of being a material consideration in planning decisions. Natural England recommends mitigation to avoid impacts on badger setts, which includes maintaining or creating new foraging areas and maintaining or creating access (commuting routes) between setts and foraging/watering areas.

Birds

All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

[1] Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. (February 2007), EC.
[2] *ODPM Circular 06/2005. Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impacts within the Planning System* (2005). HMSO Norwich.
[3] http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/standingadvice/specieslinks.aspx

The Conservation of Habitats and Species Regulations 2017 (as amended) places duties on competent authorities (including Local Authorities and National Park Authorities) in relation to wild bird habitat. These provisions relate back to Articles 1, 2 and 3 of the EC Directive on the conservation of wild birds (2009/147/EC, 'Birds Directive') (Regulation 10 (3)) requires that the objective is the 'preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of Article 2 of the new Wild Birds Directive…' Regulation 10 (7) states: 'In considering which measures may be appropriate for the purpose of security or contributing to the objective in [Regulation 10 (3)] Paragraph 3, appropriate account must be taken of economic and recreational requirements'.

In relation to the duties placed on competent authorities under the 2017 Regulations, Regulation 10 (8) states: 'So far as lies within their powers, a competent authority in exercising any function [including in relation to town and country planning] in or in relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds (except habitats beyond the outer limits of the area to which the new Wild Birds Directive applies).'

Reptiles

All native reptile species receive legal protection in Great Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Viviparous lizard, slow-worm, grass snake and adder are protected against killing, injuring and unlicensed trade only. Sand lizard and smooth snake receive additional protection as "European Protected species" under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) and are fully protected under the Wildlife and Countryside Act 1981 (as amended).

All six native species of reptile are included as 'species of principal importance' for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act 2006 and Section 7 of the Environment (Wales) Act 2016.

Current Natural England Guidelines for Developers[4] states that 'where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.' Further the guidance states: 'Normally prohibited activities may not be illegal if 'the act was the incidental result of a lawful operation and could not reasonably have been avoided'. Natural England 'would expect reasonable avoidance to include measures such as altering development layouts to avoid key areas, as well as capture and exclusion of reptiles.'

The Natural England Guidelines for Developers state that 'planning must incorporate two aims where reptiles are present:

- To protect reptiles from any harm that might arise during development work;
- To ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the reptile population, either on-site or at an alternative site, with no net loss of local reptile conservation status.'

[4] English Nature, 2004. *Reptiles: guidelines for developers.* English Nature, Peterborough. https://webarchive.nationalarchives.gov.uk/20150303064706/http://publications.naturalengland.org.uk/publication/76006

Appendix 6.2. Stakeholder Meeting Records

BSG | ecology

Caerphilly County Borough Council Meeting: Mynydd Maen Wind Farm

05 June 2023. 15:00-16:10

Present: Erica Dixon (CCBC), Chris Jackson (RES), James Garside (BSG)

A summary of key actions and discussion points is below. A summary of all of the work previously completed had been provided to CCBC by email on 02/06/2023 to inform the meeting.

Item	Details	Action
1	**Introductions** JG gave a brief background / purpose of the meeting: • CCBC, RES and BSG last met to discuss this project in May 2021. • There has been a lot of ornithological and ecological work completed at the site since then, and the project design has also moved forward. • We also met with Torfaen CBC at that time and have had a similar update meeting with them recently. • We couldn't secure a meeting with NRW despite repeated attempts. • BSG / RES did get some comment from NRW eventually via PEDW's response to the scoping report for the site. • RES are now starting to move towards EIA, so it seemed a logical time to revisit the project. JG stated that what BSG / RES would like to get out of the meeting was: • Clarity that ED feels CCBC have been appropriately consulted and (ideally) are content with the scope of survey work. • A clear indication of anything CCBC are not content with, so that BSG / RES can act on it.	

2	**Overview of Project**
	CJ provided an update on the project and intended timelines:
	• Pre-application consultation is planned for June / July 2023.
	• Application is planned for September / October 2023.
	• CJ displayed a plan showing the updated red line boundary, and described:
	  ○ The positions of 13 turbines.
	  ○ The likely layout of the access track.
	• Developing on common land means deregistering areas where infrastructure will be and adding in additional areas from around the fringes to compensate for the loss.
	• These areas will need to be looked at under a replacement land application.
	• RES were previously looking at Twmbarlwm, but are now looking at three alternative parcels adjacent to the common to the north and east.	

3	**Summary of Ornithology** JG summarised the methods of the ornithology survey to date: • Two years of survey (each with a breeding season and winter) have been completed to date, all in accordance with SNH et al (2017) guidance and raptor survey methods recommended by Hardey *et al*. • 36 hours of VP survey has been conducted in each season, from three VP locations. • Additional VP work was conducted in August - September 2022. • In both breeding seasons, raptor survey on site and within 1-2 km of it (according to species / guidance) was conducted. This involved checks of quarries, cliffs, buildings and forest edge. • Targeted goshawk survey was also conducted during late winter / early spring 2021. • Breeding wader survey was conducted during 2020 (Year 1) and was scoped out ahead of 2021 (Year 2). • Nightjar survey was conducted during both years. And summarised the key findings: • Kestrel. The most frequently recorded target species during the breeding season. Activity was highest in the NE part of the site. Juveniles were present from late summer in both years suggesting local breeding, but no nest site was located. Activity peaked in August / September 2022. Activity was lower in winter. • Goshawk. Recorded occasionally from VPs. A nest site was located to the west – within approximately 1 km, and was likely to have been successful in 2021 (juveniles were recorded in mid-summer). • Peregrine. A nest site was located within 1 km (to the N) in 2020 but was not present in 2021. Locally breeding birds appear to primarily forage away from the site. • Hobby. Recorded occasionally from VPs in both breeding seasons and during August – September 2022 (4, 12 and 2 flights respectively). No evidence of local breeding was recorded during targeted raptor survey work. • Red kite. Present frequently throughout the year. No evidence of local breeding was recorded during targeted raptor survey work. • Long-eared owl nest fledged two young within 1 km of the site during 2020 (breeding season). Not present in 2021. • Other species (each with 6 flights or fewer) were merlin, osprey, hen harrier, short-eared owl, marsh harrier, golden plover and kittiwake (the latter being a notable inland sighting). • Nightjar. 13 territories were recorded in 2020, 14 in 2021, all in plantation and clearfell off Site. Territory locations were similar between years. Birds were recorded foraging low over the site. ED confirmed that she was satisfied with the scope of the ornithology work.	

4	**Summary of Ecology** JG summarised the methods and findings of all ecology survey work to date: <u>Phase 1</u> Initial Phase 1 of the site was conducted in July 2020, and updated in August 2022. The access route was surveyed in April 2022. Key findings were: • The unenclosed upland mostly comprises a series of SINCs. • Some Section 7 habitats (wet heath and acid flushes on open ground and sections of hedgerow along the access route) and some Annex 1 habitats are present. • Some loss of the heath habitats are unavoidable, but the flushes are around the fringes and are likely to be avoided. <u>Great Crested Newts</u> JG presented a figure showing all pond locations, and summarised the work and findings to date: • Following initial Habitat Suitability Index assessments of all ponds on site, eDNA surveys were completed of five on-site ponds in 2020. Negative results were returned for all ponds. As BSG were aware of recent records, surveys were repeated in 2021, with samples collected from 10 ponds. • Presence / absence survey of Ponds 1-3 were conducted during 2021, and found small populations of GCN in all three, along with eggs (indicating breeding). • Presence / absence at Pond 15 during 2022 found a moderate GCN population, and eggs. In spring 2023 ponds 1-4 are being resurveyed, and HSI and eDNA of the others on site has been conducted, supplemented by torching and egg searching. ED noted the apparent discrepancy in the eDNA results from 2020, and stated approval of the 2023 repeat and supplementary torching and egg searching. ED Highlighted the acidity of the water as a possible reason for the apparent reduced reliability of the eDNA survey. JG also highlighted the possibility that water had been pumped into the pond by the farmer before the samples were taken in 2020, citing the presence of a pipe from the farm to ponds 2 and 3. <u>Bats</u> JG summarised the bat survey methods and key findings to date were: • Preliminary roost assessment of the ruined building and trees on / adjacent to the Site and access track, during 2021 and 2022	

	respectively. 14 trees within 250 m of proposed infrastructure / turbine locations were found to have moderate potential. Most are above Cwm Lickey (10) with the remainder along the access track (4). • An emergence survey of the building on site (which has low potential to support roosting bats), during June 2021. No evidence of roosting bats was recorded. • Activity data collection from the indicative locations of twelve turbines on 10 nights (from each location) in Spring, Summer and Autumn 2021 (in accordance with SNH (now Nature Scot) 2019 guidance), and the deployment of a weather station on site so that bat data can be linked to weather data. • Most activity involved pipistrelles and noctule. Other species (including greater and lesser horseshoe bats) were recorded less frequently. • Low activity was recorded close to sunset and sunrise, suggesting no / very little roosting locally. Climbed inspections of the trees assessed as having moderate roost potential were conducted during April and May 2023. No roosting bats were recorded. ED noted historical records of barbastelle in a quarry above Cwmbran. JG stated that barbastelle were not recorded during the work on site. <u>Otter and Water Vole</u> Watercourses on site were surveyed in June and September 2021. During July 2022 watercourses adjacent to the access track were surveyed. No evidence of otter or water vole was recorded during any survey visit. <u>Dormouse</u> Survey of the main site was not conducted due to a lack of suitable habitat. Hedgerows along the access track were surveyed during 2022. 55 nest tubes were deployed. No dormouse or evidence of their presence was recorded. ED confirmed that she would not expect dormouse survey of the main site, considering the lack of suitable habitat. <u>Badger</u> No setts or evidence of presence were recorded during the Phase 1 survey. A pre-construction check for active badger setts will be conducted. <u>Reptiles</u> Common lizard were recorded incidentally on site. Nigel Hand completed an adder habitat assessment in 2022, which found that suitable habitat is present in the NE part of the site. ED stated that presence of common reptile species should be assumed (without the need for survey) and that sensitive working practices should be implemented during the construction phase.	

	Silurian moth Following the meeting in April 2021, Owain Gabb spoke to Martin Anthoney (who has since passed away). Martin provided the following information: • Silurian Moth is only known from sites above 450 m asl. A Butterfly Conservation (BC) report of 2018 confirms range as 450-655 m asl (there is only a very small part of the site that exceeds 450 m altitude (the high point being 472 m asl)). • It is found in areas where bilberry and heath bedstraw foodplants are growing up through tussocky grass and moss, which reduces apparently suitable habitat further. Historical survey work commissioned by CCW did not record the species in the area (Waring – cited by Anthoney). A south-east Wales survey for Silurian moth (Tordoff & Williams, 2018) scoped the site out as unsuitable (based on modelling of parameters). JG stated that BSG are working with BC to survey a site elsewhere for Silurian this year. George Tordoff has stated that the species may be contracting its range due to climate. It follows that we have not completed survey for Silurian moth at MM. ED asked whether marsh fritillary had been considered during the work. JG stated that no targeted survey for this species had been conducted, but that no devil's-bit scabious had been recorded within marshy grassland on site. ED proposed that if any marshy grassland fell within the infrastructure layout of the site (once frozen), it could be surveyed for devil's-bit scabious. ED stated that she was satisfied with the scope of the ecology work and was pleased with the thorough approach to the work. JG asked ED if CCBC currently have local biodiversity enhancement schemes for which funding could be offered, as there are limitations as to the level of on-site enhancement that can be implemented due to the common land use of the site. ED listed: • Plant a patch (wildflower planting scheme). • Willow tit and swift nest box scheme. • Enhancement work for curlew at a breeding site in the north of the county. ED suggested pond creation to strengthen the GCN population on site, to create a stepping-stone between ponds 1-3 and the remainder of the site. This could help to avoid a local extinction of this population. This would constitute priority habitat creation.	

	Given difficulties with management, ED stated she would like to see a robust monitoring programme (particularly for bat and bird fatalities).	

Meeting Ends 16:10

BSG | ecology

Caerphilly County Borough Council Meeting: Mynydd Maen Wind Farm

13 May 2021. 11:00-12:30

Present: Erica Dixon (Caerphilly Council Ecologist), Owain Gabb, Rachel Taylor (BSG Ecology), Chris Jackson (RES Ltd). Apologies Margaret Iles (Caerphilly Council Principal Ecologist)

A summary of key actions and discussion points is below. An outline of all of the work previously completed had been provided to CCBC by email on 11/03/2021 to inform the meeting.

Item	Details	Action
1	**Purpose of the Meeting** Following introductions RT gave an overview of the purpose of the meeting. This was to: - Provide a summary of work completed to date, and key issues identified. - Provide an overview of, and ideally agree the ecological scope of works for the site ahead of EIA. - Identify any concerns CCBC have with regard to ecology / ornithology at Mynydd Maen, and whether they would like to see any changes to the proposed scope of work.	
2	**Project Introduction** CJ provided an initial overview: - Mynydd Maen is a proposed ~16 turbine Wind Farm on land within the County Boroughs of Torfaen and Caerphilly. - CJ shared a plan showing indicative turbine locations and constraints to the buildable area. - The turbines will be up to 149.9 m height, based on early landscape and visual feasibility studies. - Access arrangements are yet to be finalised. Working plan is to bring Abnormal Indivisible Loads (AILs) in from the south west from junction 28 of the M4, up the A467 to Newbridge, then through the Pantside Estate along Old Pant Road and up onto the site. - All cabling will be underground between the turbines and the substation, Western Power Distribution will then link up to the grid from the sub-station. - Targeting planning submission for wind farm is Q2/3 2022 - This is a development of national significance and is within a National Development Framework Pre Assessed Area for renewable energy. The application will be submitted to the Planning Inspectorate and determined by Welsh ministers. CCBC will be asked to provide a local impact report. Common land consent will be required. ED indicated that she was familiar with the area and had no questions.	
3	**Ecological Consultation** RT explained that requests for consultation had been caried out with Torfaen County Borough Council in April and requests had been made to Natural Resources Wales but that no dates had been secured at this point.	

4	**Desk Study** RT provided an overview of sources of desk-based data sources identified and secured. These included: - SEWBReC data - NBN data - Gwent bird reports / the Gwent Avifauna - The UK Government's Magic website RT mentioned that Steve Williams (Torfaen County Borough Council) had suggested getting in touch with Gwent Ornithological Society, specifically Steve Roberts and Jerry Lewis. BSG have contact details for both. RT asked if there were other sources of information that CCBC were aware of that could be used to inform the scope of works. ED agreed with Steve Williams and was happy with the scope of the desk study.	
5	**Ornithology** OG noted that the breeding season report for 2020 had been provided. This would now be updated to be a Year 1 report (including the winter results), which would be provided when complete. OG stated that work completed in 2020 had been closely based on SNH (2017) guidance and comprised: - Breeding season VP work. 36 hours of survey was completed at each of 3 VPs overlooking the site between April and July inclusive. - Winter VP survey, using the same three locations between October 2020 and March 2021. - Raptor survey of an area extending 1-2 km around the turbines. The distances vary by species, with GI and HY to 1 km and other Schedule 1 raptors (as relevant) to 2 km in accordance with SNH guidance. Quarries, cliffs, building, forest edge and mature stands - Wader survey of moorland within approximately 800 m of indicative turbine locations. Based on Brown & Shepherd method. Adjusted to 4 visits in line with SNH (2017). - Nightjar reccy followed by walked transect with stopping points on 2 dates in both June and July. VP Results - 22 red kite flights over the breeding season. A good proportion around the slopes on the edges of the site. Mainly singletons and twos. Relatively even spread over May-July - Goshawk activity mainly west of the site. April, June and July. - Peregrine activity throughout the season. 28 minutes of flight activity recorded including apparent adults and a juvenile bird. A lot of this over the northern edge of the site. - Almost 3 hours of kestrel activity at collision risk height - Periodic hobby flights. April, May, July. Raptor Survey - No evidence to suggest any raptors nested within the site boundary - Peregrine nest recorded approximately 500 m to north of site. - Active kestrel nest not located. One disused nest site found in a quarry approx. 550 m east of site. - Short-eared owl seen twice in May, but no indication of breeding.	

	- Breeding long-eared owl towards the edge of the plantation to the west. Wader Survey - 2 snipe recorded in April were the only records of waders on site. Likely to have been spring passage birds. Nightjar - Appears abundant in suitable plantation habitats (clearfell and pre-thicket growth). Churring males recorded in 13 discrete locations. - Some use of site noted – a NJ was seen sitting on a track. It is likely that they forage over the moorland in suitable weather conditions. Non focal species: - Red grouse (mainly in north) - Raven (breeds locally – Mynydd Henllys quarry) - Most common breeding birds skylark and meadow pipit. Other species include stonechat, wheatear, whinchat, and (likely) cuckoo Overview of Winter 2021. - Kestrel and red kite activity continued, albeit at lower levels. - Hen harrier seen in October / November (low level flights involving a minimum of two birds – an adult male and a 1st winter) - Goshawk territory identified from work in February and March in plantation to the south-west of the site Main issues are likely to be: - Collision of kestrel - Collision of peregrine (this could vary considerably depending on layout as many flights are peripheral to the development area) During 2021/22 we will - Repeat the breeding and winter VP work. - Repeat the raptor survey work and incorporate some early season goshawk display survey (this latter is now done) - Not repeat the wader work - Extend the NJ work to 3 nights on 2 occasions ED asked whether impacts on ground nesting birds (such as skylark and meadow pipit) would be considered. OG confirmed that we would review the available research, but that some displacement during construction of tracks / turbine bases and occasional collision may occur. There is no collision risk model for passerines. ED noted that there had been 3 osprey passes recorded in Rudry (10.5 km south west of the site) in late April / early May. No osprey passes have been recorded during VP work at Mynydd Maen. ED indicated that she was happy with the scope of the bird work, including the decision not to repeat wader survey in 2021.	
6	**Phase 1** RT stated that the Phase 1 survey of the site had been completed in July 2020. The survey included the attribution of habitats to NVC categories in the field by an experienced botanist. The Site is an area of unenclosed upland and is almost entirely covered by a series of Sites of Importance for Nature Conservation (a non-statutory designation). Much of the level ground within the site supports dry heath (an Annex 1 priority habitat).	

	There are also several Section 7 (Environment Wales Act, 2016) priority habitats present including wet heath and acid flushes (although the latter is located on steeply sloping ground at the fringes of the site and unlikely to be within the buildable area). These are potential groundwater dependent terrestrial ecosystems (GWDTEs). Other habitats include acid grassland, marshy grassland, poor semi-improved grassland, improved grassland, plantation woodland, bracken, dry stream beds and ponds. No further habitat survey was proposed. Habitats on and around the Site have potential to support a range of protected species including bats, ground nesting birds, badger, great crested newt (GCN) and dormouse. ED agreed with the scope and findings of the Phase 1 habitat survey.	
7	**Great Crested Newt** GCN eDNA surveys were completed on five ponds in 2020 (seven ponds additional that appear on OS maps were dry at the time of survey). Negative results were returned for all ponds. As the desk study returned records for GCN in one of the ponds (Pond 3) from 2019, we are repeating survey in 2021. Survey has included eDNA survey of ten ponds which held water on 15 April and presence / absence survey of Pond 1, 2 and 3 which are all connected by drainage channels. Following the meeting the eDNA results came back positive for two of the ponds (Pond 1 and 3), and GCN have been recorded during standard surveys at Ponds 1, 2 and 3. ED indicated that she was happy that presence / absence surveys were being completed, as eDNA of upland ponds can be unreliable in her experience.	
8	**Bats** RT confirmed that bat data collection will be complete in 2021 in line with current guidance (SNH *et al*, 2019). This will involve: - Data collection from the indicative locations of twelve turbines. 10 nights of data will be collected from each location in each of, Spring, Summer and Autumn 2021. - The deployment of a weather station on site so that bat data can be linked to weather data. - Roost survey (emergence / re-entry surveys) of buildings and trees on site within 250 m of potential turbine locations. There is a derelict building which has low potential for roosting bats. RT noted that there were concerns on potential theft of equipment, and that locations around the site had been selected with this in mind. She also noted that given the number of detectors deployed, characterisation of bat activity across the site should still be possible if there are some losses. ED agreed with the scope of the bat work. She noted that there is a greater horseshoe bat roost at Navigation Colliery (3 km to west), records of lesser horseshoe bat, long-eared bat sp., soprano and common pipistrelle at a housing development application in Hafodrynys (1.5 km to north west), and	

	a barbastelle roost in a quarry in Torfaen (from Tirpentwys Quarry 2.5 km to north). Serotine and Nathusius' pipistrelle have also been recorded locally. ED asked if there were any open mine workings on site, CJ confirmed that the there are no open mine entries or mine workings on site. ED asked that the use of acoustic deterrents are considered within impact analysis.	RT
9	**Other Protected Species** *Otter and Water Vole* RT stated that there was an intention to survey for otter and water vole in habitats within 200 m of wind farm infrastructure. Most of these habitats are sub-optimal but are connected to watercourses in the wider area used by otter. Checks for water vole will be completed at the same time, however the upper reaches of the water courses are considered unsuitable. *Dormouse* Habitats on Site are unlikely to support dormouse and no further survey is currently planned. Impacts on any suitable habitats around the access route will be considered once this is confirmed. *Badger* No setts or other evidence of badger were identified during the Phase 1 survey, although woodland at the edge of the site are suitable for sett building. A pre-development check is recommended. *Reptiles* The Site provides suitable habitat for common species of reptile. No further survey is planned, as impacts on reptiles can be limited through the use of a working method statement. ED agreed with the conclusions and approach, and consider water vole and dormouse presence to be unlikely – albeit appreciated the need to confirm if potential impacts are predicted (along the access route for example). ED welcomed the suggestion by Steve Williams to contact Martin Anthoney for most up to date records and information on specific habitat preferences (which are likely to include heath bedstraw and bilberry as larval food plants) of Silurian moth.	
10	**Closing Comments** Much of the Site has good potential for habitat enhancement, including an increased extent and improved condition of priority habitats. This could be delivered through the implementation of a long-term habitat management plan. RT noted that BSG / RES intend to speak to Alvin Nicholas (South East Wales Resilient Uplands Manager) with regard to work that has already been completed in the area and the potential for further management. RT asked if ED had any thoughts on potential habitat enhancements. ED would like to see appropriate mitigation and enhancement for a range of the species / habitats that are present on site (rather than concentration on EPS species only). She would welcome well thought out long term monitoring that can feed into the local knowledge base.	

	All agreed that the meeting had been useful, and that a follow up meeting in Spring 2022 should be arranged. In advance of this, RT / OG will forward updated reports (the updated year 1 bird report in a month or so, and other reports at the end of the year). ED suggested that one meeting that includes Caerphilly and Torfaen would be the most useful – All agree.	RT/OG

Meeting Ends: 12:30

BSG | ecology

Torfaen County Borough Council Meeting: Mynydd Maen Wind Farm

28 April 2021. 09:30-11:00

Present: Steve Williams (Torfaen Council Team Leader for Ecology), Rachel Edwards (Torfaen Council Ecologist), Owain Gabb, Rachel Taylor (BSG Ecology), Chris Jackson (RES Ltd)

A summary of key actions and discussion points is below. An outline of all of the work previously completed had been provided to TCBC by email on 14/04/2021 to inform the meeting.

Item	Details	Action
1	**Purpose of the Meeting** Following introductions RT gave an overview of the purpose of the meeting. This was to: - Provide a summary of work completed to date, and key issues identified. - Provide an overview of, and ideally agree the ecological scope of works for the site ahead of EIA. - Identify any concerns TCC have with regard to ecology / ornithology at Mynydd Maen, and whether they would like to see any changes to the proposed scope of work.	
2	**Project Introduction** CJ provided an initial overview: - Mynydd Maen is a proposed ~16 turbine Wind Farm on land within the County Boroughs of Torfaen and Caerphilly. - CJ shared a plan showing indicative turbine locations and constraints to the buildable area. - The turbines will be up to 149.9 m height, based on early landscape and visual feasibility studies. - Access arrangements are yet to be finalised. Working plan is to bring Abnormal Indivisible Loads (AILs) in from the south west from the M4, up the A467 to Newbridge, then through the Pantside Estate along Old Pant Road and up onto the ridge. - All cabling will be underground as far as the onsite substation, Western Power Distribution will then link up to the grid from the sub-station. - Target of planning submission for wind farm is Q2/3 2022 - This is a development of national significance and is within the National Development Framework Priority Area for renewable energy. The application will be submitted to the Planning Inspectorate and determined by Welsh ministers. TCC will be asked to provide a local impact report. SW and RE indicated they were both familiar with the area proposed for the wind farm.	
3	**Ecological Consultation** RT explained that requests for consultation had been made to Caerphilly County Council and Natural Resources Wales but that no dates had been secured at this point.	

4	**Desk Study** RT provided an overview of sources of desk-based data sources identified and secured. These included: - SEWBReC data - NBN data - Gwent bird reports / the Gwent Avifauna - The UK Government's Magic website RT asked if there were other sources of information that TCC were aware of that could be used to inform the scope of works. SW suggested getting in touch with Gwent Ornithological Society, specifically Steve Roberts and Jerry Lewis. BSG have contact details for both.	RT/OG
5	**Ornithology** OG noted that the breeding season report for 2020 had been provided. This would now be updated to be a Year 1 report (including the winter results), which would be provided when complete. OG stated that work completed in 2020 had been closely based on SNH (2017) guidance and comprised: - Breeding season VP work. 36 hours of survey was completed at each of 3 VPs overlooking the site between April and July inclusive. - Winter VP survey, using the same three locations between October 2020 and March 2021. - Raptor survey of an area extending 1-2 km around the turbines. The distances vary by species, with GI and HY to 1 km and other Schedule 1 raptors (as relevant) to 2 km in accordance with SNH guidance. Quarries, cliffs, building, forest edge and mature stands - Wader survey of moorland within approximately 800 m of indicative turbine locations. Based on Brown & Shepherd method. Adjusted to 4 visits in line with SNH (2017). - Nightjar reccy followed by walked transect with stopping points on 2 dates in both June and July. VP Results - 22 red kite flights over the breeding season. A good proportion around the slopes on the edges of the site. Mainly singletons and twos. Relatively even spread over May-July - Goshawk activity mainly west of the site. April, June and July. - Peregrine activity throughout the season. 28 minutes of flight activity recorded including apparent adults and a juvenile bird. A lot of this over the northern edge of the site. - Almost 3 hours of kestrel activity at collision risk height - Periodic hobby flights. April, May, July. Raptor Survey - No evidence to suggest any raptors nested within the site boundary - Peregrine nest recorded approximately 500 m to north of site. - Active kestrel nest not located. One disused nest site found in a quarry approx. 550 m east of site. - Short-eared owl seen twice in May, but no indication of breeding. - Breeding long-eared owl towards the edge of the plantation to the west.	

	Wader Survey - 2 snipe recorded in April were the only records of waders on site. Likely to have been spring passage birds. Nightjar - Appears abundant in suitable plantation habitats (clearfell and pre-thicket growth). Churring males recorded in 13 discrete locations. - Some use of site noted – a NJ was seen sitting on a track. It is likely that they forage over the moorland in suitable weather conditions. Non focal species: - Red grouse (mainly in north) - Raven (breeds locally – Mynydd Henllys quarry) - Most common breeding birds skylark and meadow pipit. Other species include stonechat, wheatear, whinchat, and (likely) cuckoo Overview of Winter 2021. - Kestrel and red kite activity continued, albeit at lower levels. - Hen harrier seen in October / November (low level flights involving a minimum of two birds – an adult male and a 1st winter) - Goshawk territory identified from work in February and March in plantation to the south-west of the site Main issues are likely to be: - Collision of kestrel - Collision of peregrine (this could vary considerably depending on layout as many flights are peripheral to the development area) During 2021/22 we will - Repeat the breeding and winter VP work. - Repeat the raptor survey work and incorporate some early season goshawk display survey (this latter is now done) - Not repeat the wader work - Extend the NJ work to 3 nights on 2 occasions SW indicated that results were largely as expected. SW asked if red kite had been recorded breeding as a result of the work, as local birdwatchers suspect a nest site in the general area. OG indicated a nest / core territory had not been recorded in 2020. SW noted that long-eared owl has been recorded in similar habitat at Blaenavon and is under recorded due to the difficulties involved in surveying for the species. SB also noted that the short eared owl population varies annually. SW asked if nocturnal audio recording of passage birds had been considered, as local recorders had picked up a lot of wader / wildfowl passage using the technique in late winter / early spring. OG stated that there is no guidance on the commercial use of nocturnal audio recording at present, and no nocturnal recording had been completed to date. OG confirmed that the method would be further considered, and we would do some research into whether it could be applied to the scheme / would add value to the impact assessments and respond on the point to SW.	OG
6	**Phase 1**	

	RT stated that the Phase 1 survey of the site had been completed in July 2020. The survey included the attribution of habitats to NVC categories in the field by an experienced botanist. The Site is an area of unenclosed upland and is almost entirely covered by a series of Sites of Importance for Nature Conservation (a non-statutory designation). Much of the level ground within the site supports dry heath (an Annex 1 priority habitat). There are also several Section 7 (Environment Wales Act, 2016) priority habitats present including wet heath and acid flushes (although the latter is located on steeply sloping ground at the fringes of the site and unlikely to be within the buildable area). These are potential groundwater dependent terrestrial ecosystems (GWDTEs). Other habitats include acid grassland, marshy grassland, poor semi-improved grassland, improved grassland, plantation woodland, bracken, dry stream beds and ponds. No further habitat survey was proposed. Habitats on and around the Site have potential to support a range of protected species including bats, ground nesting birds, badger, great crested newt (GCN) and dormouse. SW / RE agreed that habitats were as expected for the area.	
7	**Great Crested Newt** GCN eDNA surveys were completed on five ponds in 2020 (seven ponds additional that appear on OS maps were dry at the time of survey). Negative results were returned for all ponds. As the desk study returned records for GCN in one of the ponds (Pond 3) from 2019, we are repeating survey in 2021. Survey has included eDNA survey of ten ponds which held water on 15 April and presence / absence survey of Pond 1, 2 and 3 which are all connected by drainage channels. We are expecting the results of the survey this week. No GCN have been recorded during standard surveys. RE and SW have previously found great crested newts under refugia around Pond 3, so are aware that there has been use of the pond by GCN in the past. RT asked if any information available (i.e. date of visit / number of GCN) could be forwarded, as the record has not been supplied by SEWBReC as part of the desk study.	SW/RE
8	**Bats** RT confirmed that bat data collection will be complete in 2021 in line with current guidance (SNH *et al*, 2019). This will involve: - Data collection from the indicative locations of twelve turbines. 10 nights of data will be collected from each location in each of, Spring, Summer and Autumn 2021. - The deployment of a weather station on site so that bat data can be linked to weather data.	

	- Roost survey (emergence / re-entry surveys) of buildings and trees on site within 250 m of potential turbine locations. There is a derelict building which has low potential for roosting bats. RE / SW agreed that the building was likely to be of low potential for roosting bats given it's location. RT noted that there were concerns on potential theft of equipment, and that locations around the site had been selected with this in mind. She also noted that given the number of detectors deployed, characterisation of at activity across the site should still be possible if there are some losses. SW / RE agreed.	
9	**Other Protected Species** *Otter and Water Vole* RT stated that there was an intention to survey for otter and water vole in habitats within 200 m of wind farm infrastructure. Most of these habitats are sub-optimal but are connected to watercourses in the wider area used by otter. Checks for water vole will be completed at the same time, however the upper reaches of the water courses are considered unsuitable. *Dormouse* Habitats on Site are unlikely to support dormouse and no further survey is currently planned. Impacts on any suitable habitats around the access route will be considered once this is confirmed. *Badger* No setts or other evidence of badger were identified during the Phase 1 survey, although woodland at the edge of the site are suitable for sett building. A pre-development check is recommended. *Reptiles* The Site provides suitable habitat for common species of reptile. No further survey is planned, as impacts on reptiles can be limited through the use of a working method statement. RE and SW agreed with the conclusions and approach and consider water vole and dormouse presence to be very unlikely – albeit they appreciated the need to confirm if potential impacts are predicted (along the access route for example). SW asked if any other Section 7 species would be considered and made specific reference to Silurian moth. OG noted that no records for the species had been returned during the desk study. SW suggested getting in touch with Martin Anthoney for most up to date records and information on specific habitat preferences (which are likely to include heath bedstraw and bilberry as larval food plants). He also noted that as surveys are specialised, it is possible the species is under recorded.	RT/OG
10	**Closing Comments** Much of the Site has good potential for habitat enhancement, including an increased extent and improved condition of priority habitats. This could be delivered through the implementation of a long-term habitat management plan. RT asked if TCC had any thoughts on potential habitat enhancements.	

	SW suggested that we speak to Alvin Nicholas (South East Wales Resilient Uplands Manager) with regard to work that has already been completed in the area and the potential for further management. SW has subsequently forwarded Alvin's contact details. With regard to site access tracks, SW asked whether there was potential for increased use of the areas by off road motorbikes be considered, as there is already activity in the area. CJ noted that CCTV could potentially be incorporated on infrastructure. RT noted that there was an existed track through the area which although heavily rutted, was suitable for off road motorbikes. This will be considered further as the design progresses. SW asked if meetings with any other disciplines had been arranged. CJ confirmed none to date, but that landscape and visual consultation was likely once formal scoping was issued (in a month or so). CJ asked whether this was appropriate or if it would be worth opening communication sooner. SW suggested that CJ get in touch with Norman Jones (Development Control Team Leader) and copy in Richard Lewis (Head of Planning) to make them aware of the project. He also mentioned that Henrietta Lucas (Landscape Architect) was likely to be a key contact. All agreed that the meeting had been useful, and that a follow up meeting in Spring 2022 should be arranged. In advance of this, RT / OG will forward updated reports (the updated year 1 bird report in a month or so, and other reports at the end of the year).	RT/OG

Meeting Ends: 11:00

BSG | ecology

Torfaen County Borough Council Meeting: Mynydd Maen Wind Farm

04 April 2021. 14:00-14:55

Present: Steve Williams (TCBC), Chris Jackson (RES), Owain Gabb (BSG), James Garside (BSG)

A summary of key actions and discussion points is below. A summary of all of the work previously completed had been provided to TCBC by email on 04/04/2023 to inform the meeting.

Item	Details	Action
1	**Introductions** OG gave a brief background / purpose of the meeting: • TCBC, RES and BSG last met to discuss this project in April 2021. • There has been a lot of ornithological and ecological work completed at the site since then, and the project design has also moved forward. • After the previous meeting, we also met with Caerphilly CBC, but couldn't secure a meeting with NRW despite repeated attempts. • BSG / RES did get some comment from NRW eventually via PEDW's response to the scoping report for the site. • RES are now starting to move towards EIA, so it seemed a logical time to revisit the project. OG stated that what BSG / RES would like to get out of the meeting was: • Clarity that SW feels TCBC have been appropriately consulted and (ideally) are content with the scope of survey work. • A clear indication of anything TCBC are not content with, so that BSG / RES can act on it.	

2	**Overview of Project**
	CJ provided an update on the project and intended timelines:
	• Pre-application consultation is planned for June / July 2023.
	• Application is planned for September 2023.
	• CJ provided a plan indicating:
	  ○ The positions of 13 turbines.
	  ○ The likely layout of the access track (the positioning of sections passing over a high pressure gas main are yet to be confirmed).
	• Developing on common land means deregistering areas where infrastructure will be and adding in additional areas from around the fringes to compensate for the loss. Approximately 14 hectares of 'land swop' will be required.
	• These areas will need to be looked at under a replacement land application.
	• Site investigation has been conducted to confirm that turbine locations are suitable and no shallow mine workings are present.	

	• Phase 1 and Phase 2 peat surveys have been carried out. RES are waiting for results of the Phase 2 survey. The findings are unlikely to significantly affect the layout.	
3	**Summary of Ornithology** JG summarised the methods of the ornithology survey to date: • Two years of survey (each with a breeding season and winter) have been completed to date, all in accordance with SNH et al (2017) guidance and raptor survey methods recommended by Hardey *et al*. • 36 hours of VP survey has been conducted in each season, from three VP locations. • Additional VP work was conducted in August - September 2022. • In both breeding seasons, raptor survey on site and within 1-2 km of it (according to species / guidance) was conducted. This involved checks of quarries, cliffs, buildings and forest edge. • Targeted goshawk survey was also conducted during late winter / early spring 2021. • Breeding wader survey was conducted during 2020 (Year 1), and was scoped out ahead of 2021 (Year 2). • Nightjar survey was conducted during both years. And summarised the key findings: • Kestrel. The most frequently recorded target species during the breeding season. Activity was highest in the NE part of the site. Juveniles were present from late summer in both years suggesting local breeding, but no nest site was located. Activity peaked in August / September 2022. Activity was lower in winter. • Goshawk. Recorded occasionally from VPs. A nest site was located to the west – within approximately 1 km, and was likely to have been successful in 2021 (juveniles were recorded in mid-summer). • Peregrine. A nest site was located within 1 km (to the N) in 2020 but was not present in 2021. During both years activity over the site was infrequent. Locally breeding birds appear to primarily forage away from the site. • Hobby. Recorded occasionally from VPs in both breeding seasons and during August – September 2022 (4, 12 and 2 flights respectively). No evidence of local breeding was recorded during targeted raptor survey work. • Red kite. Present frequently throughout the year. No evidence of local breeding was recorded during targeted raptor survey work. • Long-eared owl nest fledged two young within 1 km of the site during 2020 (breeding season). Not present in 2021. • Other species (each with 6 flights or fewer) were merlin, osprey, hen harrier, short-eared owl, marsh harrier, golden plover and kittiwake (the latter being a notable inland sighting).	

	• Nightjar. 13 territories were recorded in 2020, 14 in 2021, all in plantation and clearfell off Site. Territory locations were similar between years. Birds were recorded foraging low over the site. SW confirmed that based on the evidence provided the ornithology work appeared to be comprehensive and that he was satisfied with the scope. All agreed that collision impact on kestrel and, to a lesser extent red kite, were the principal issues.	
4	**Summary of Ecology** JG summarised the methods and findings of all ecology survey work to date: <u>Phase 1</u> Initial Phase 1 of the site was conducted in July 2020, and updated in August 2022. The access route was surveyed in April 2022. Key findings were: • The unenclosed upland mostly comprises a series of SINCs. • Some Section 7 habitats (wet heath and acid flushes on open ground and sections of hedgerow along the access route) and some Annex 1 habitats are present. • Some loss of the heath habitats is unavoidable, but the flushes are around the fringes and are likely to be avoided. <u>Great Crested Newts</u> JG presented a figure showing all pond locations, and summarised the work and findings to date: • Following initial Habitat Suitability Index assessments of all ponds on site, eDNA surveys were completed of five on-site ponds in 2020. Negative results were returned for all ponds. As BSG were aware of recent records, surveys were repeated in 2021, with samples collected from 10 ponds. • Presence / absence survey of Ponds 1-3 were conducted during 2021, and found small populations of GCN in all three, along with eggs (indicating breeding). • Presence / absence at Pond 15 during 2022 found a moderate GCN population, and eggs. In spring 2023 ponds 1-3 will be resurveyed, and HSI and eDNA of the others on site will be conducted, supplemented by torching and egg searching. <u>Bats</u> JG summarised the bat survey methods and key findings to date were: • Preliminary roost assessment of the ruined building and trees on / adjacent to the Site and access track, during 2021 and 2022 respectively. 14 trees within 250 m of proposed infrastructure / turbine	

locations were found to have moderate potential. Most are above Cwm Lickey (10) with the remainder along the access track (4).

- An emergence survey of the building on site (which has low potential to support roosting bats), during June 2021. No evidence of roosting bats was recorded.
- Activity data collection from the indicative locations of twelve turbines on 10 nights (from each location) in Spring, Summer and Autumn 2021 (in accordance with SNH (now Nature Scot) 2019 guidance), and the deployment of a weather station on site so that bat data can be linked to weather data.
- Most activity involved pipistrelles and noctule. Other species recorded included greater horseshoe bat, lesser horseshoe bat and Nathusius' pipistrelle (activity for the latter three was less than 0.1 passes per hour).
- Activity was highest in autumn and lowest in spring. Low activity was recorded close to sunset and sunrise, suggesting no / very little roosting locally.
- Pairing the activity data with the weather data, supported observations that bats avoid high winds and wet weather.

Climbed inspections of the trees assessed as having moderate roost potential are planned in April and May 2023.

<u>Otter and Water Vole</u>

Watercourses on site were surveyed in June and September 2021. During July 2022 watercourses adjacent to the access track were surveyed.

No evidence of otter or water vole was recorded during any survey visit.

<u>Dormouse</u>

During the previous meeting it was agreed that there was no requirement for dormouse survey of the main site.

Hedgerows along the access track were surveyed during 2022. 55 nest tubes were deployed. No dormouse or evidence of their presence was recorded.

<u>Badger</u>

No setts or evidence of presence were recorded during the Phase 1 survey.

<u>Reptiles</u>

Common lizard were recorded incidentally on site. Nigel Hand completed an adder habitat assessment in 2022, which found that suitable habitat is present in the NE part of the site.

<u>Silurian moth</u>

Following the meeting in April 2021, OG spoke to Martin Anthoney (who has since passed away).

Martin provided the following information:

	• Silurian Moth is only known from sites above 450 m asl. A Butterfly Conservation (BC) report of 2018 confirms range as 450-655 m asl (there is only a very small part of the site that exceeds 450 m altitude (the high point being 472 m asl)). • It is found in areas where bilberry and heath bedstraw foodplants are growing up through tussocky grass and moss, which reduces apparently suitable habitat further. Historical survey work commissioned by CCW did not record the species in the area (Waring – cited by Anthoney). A south-east Wales survey for silurian moth (Tordoff & Williams, 2018) scoped the site out as unsuitable (based on modelling of parameters). OG stated that BSG are working with BC to survey a site elsewhere for Silurian this year. George Tordoff has stated that the species may be contracting its range due to climate. It follows that we have not completed survey for Silurian moth at MM. SW stated that the scope of the ecology work covered everything he would expect, and that he was pleased from an ecological perspective that great crested newt had been picked up (as he has recorded them in Pond 2 or 3 previously). He stated that he was a bit concerned that the eDNA didn't pick them up, and expressed a lack of confidence in that method. SW stated that overall he was pleased with the scope of work. SW asked whether hedgerows and individual trees were to be affected along the access track, and whether a hedgerow assessment had been conducted. JG confirmed that hedgerow assessment had been completed as part of the Phase 1 survey. CJ noted that to avoid tree and hedgerow loss the intention was to punch a hole through at the western end of the narrow point of the access and to return through at the eastern end. SW agreed this was a good idea in principle if this was species poor SI or I grassland, and noted that as much of the scrub / hedgerow and trees should be retained as possible. SW asked whether the access track would be reinstated after construction. CJ indicated that they could reinstate if that was preferred. SW stated that in his view birds and great crested newt were the greatest issues, and that the project team need to show that the turbine (and other infrastructure) locations were informed by the work. SW stated that overall he was satisfied with the approach to the work.	

Meeting Ends 14:55

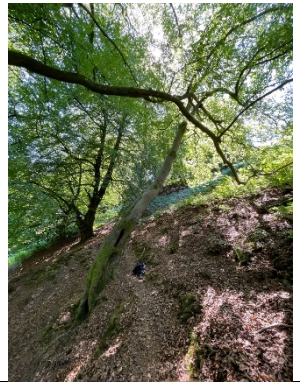
Appendix 6.3 Survey Tables and Bat Data Analysis Methods

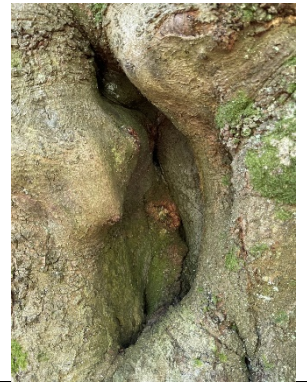
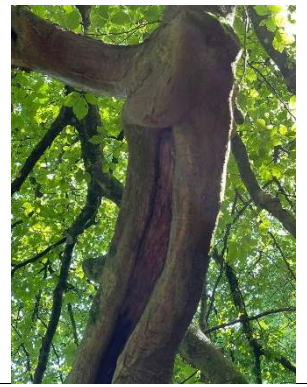
Table 1. Details of static bat detector deployments

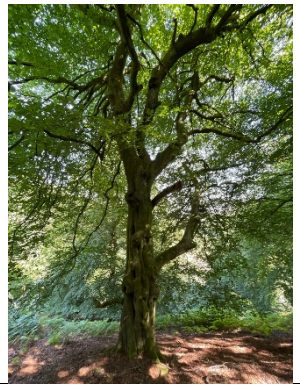
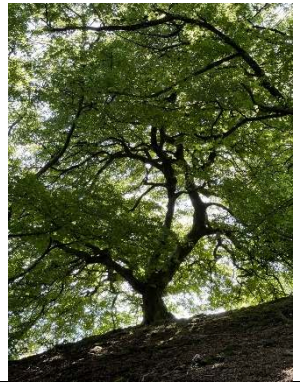
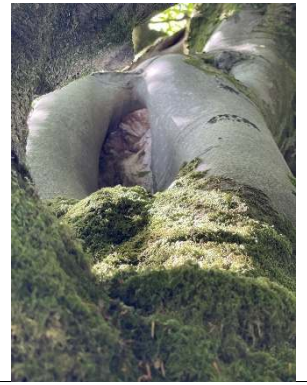
Period	Location	Deployment date	Collection date	Number of nights deployed	Number of nights of data recorded
Spring	D1	11/05/2021	21/05/2021	10	10
	D2	11/05/2021	21/05/2021	10	10
	D3	11/05/2021	21/05/2021	10	10
	D4	11/05/2021	21/05/2021	10	10
	D5	11/05/2021	21/05/2021	10	10
	D6	11/05/2021	21/05/2021	10	10
	D7	11/05/2021	21/05/2021	10	10
	D8	11/05/2021	21/05/2021	10	10
	D9	11/05/2021	21/05/2021	10	10
	D10	11/05/2021	21/05/2021	10	10
Summer	D1	21/07/2021	31/07/2021	10	10
	D2	21/07/2021	31/07/2021	10	10
	D3	21/07/2021	31/07/2021	10	10
	D4	21/07/2021	31/07/2021	10	10
	D5	21/07/2021	31/07/2021	10	10
	D6	21/07/2021	31/07/2021	10	10
	D7	21/07/2021	31/07/2021	10	10
	D8	21/07/2021	31/07/2021	10	10
	D9	21/07/2021	31/07/2021	10	10
	D10	21/07/2021	31/07/2021	10	10
Autumn	D1	15/09/2021	25/09/2021	10	10
	D2	15/09/2021	25/09/2021	10	10
	D3	15/09/2021	25/09/2021	10	10
	D4	15/09/2021	25/09/2021	10	10
	D5	15/09/2021	25/09/2021	10	10
	D6	15/09/2021	25/09/2021	10	10
	D7	15/09/2021	25/09/2021	10	10
	D8	15/09/2021	25/09/2021	10	10
	D9	15/09/2021	25/09/2021	10	10
	D10	15/09/2021	25/09/2021	10	10

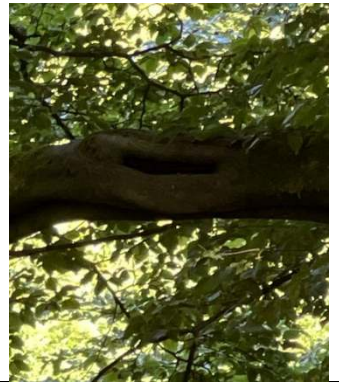
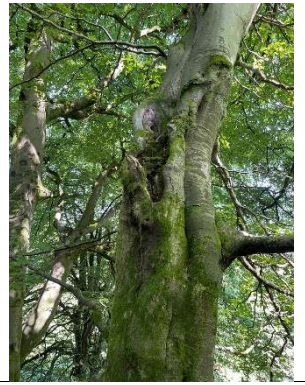
Table 2. Tree Survey Results

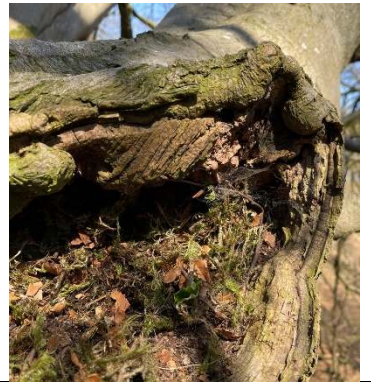
ID	Tree Description	Tree Photo	PRF Type	PRF Description	PRF Dimensions	Suitability	PRF Photo
10	Goat willow Alive 90cm DBH. 8 m high.		Wound 1 m high on Stem. N aspect.	Wound at base of double leader. Decay creating a cavity in stem.	External dimensions = 100 (h) x 30 (w). Internal dimensions = 90 (h) x 7 (w). Internal conditions = Clean, Blackened, Bumpy substrate and Dry	Moderate	
			Tear out 2 m high on Limb. SW aspect.	Tear out on limb following bank. Moderate cavity May support small colony of bats.	External dimensions = 10 (h) x 15 (w). Internal dimensions = 10 (h) x 10 (w). Internal conditions = Clean, smooth substrate and Dry	Moderate	

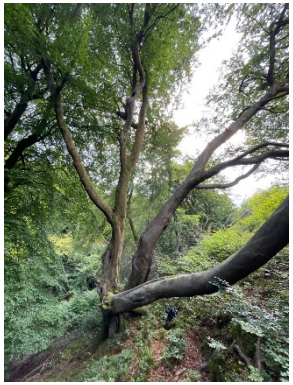
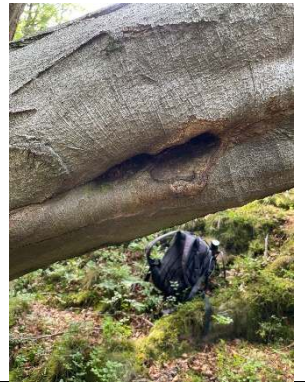
17	Beech Alive 80cm DBH. 0.5 m high.		Lightning strike 0.5 m high on Stem. NE aspect.	Cavity formed between ground and lightning strike on fallen tree. Low suitability given location on ground. More likely to be used by small mammals.	External dimensions = 50 (h) x 30 (w). Internal dimensions = 600 (h) x 20 (w). Internal conditions = Clean, Rough substrate and Dry	Low	
18	Beech Alive 100cm DBH. 20 m high.		Tear out 6 m high on Stem. N aspect.	Recent shallow tear out with some decay at apex. Inspected from ground level	External dimensions = 20 (h) x 15 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Dirty, Sludgy substrate and Damp	Low	
19	Beech Alive 50cm DBH. 12 m high.		Tear out 1 m high on Stem. W aspect.	Low tear out leading to hollow stem.	External dimensions = 40 (h) x 15 (w). Internal dimensions = 100 (h) x 30 (w). Internal conditions = Clean substrate and Dry	Moderate	

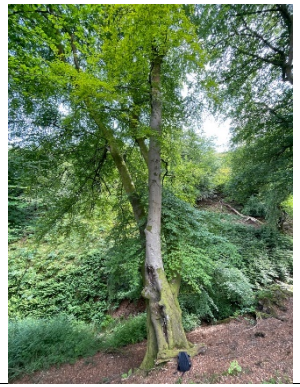
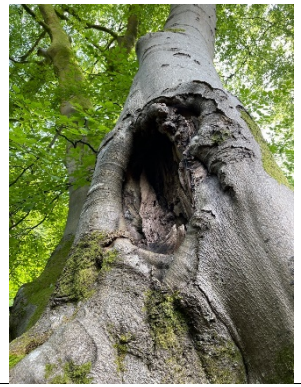
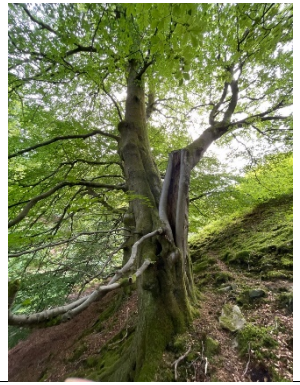
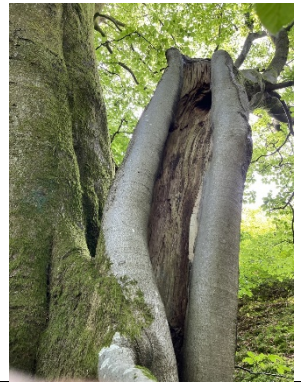
20	Beech Alive 90cm DBH. 24 m high.		Butt rot 0.5 m high on Stem. SW aspect.	Low entrance - 0.5m	External dimensions = 40 (h) x 20 (w). Internal dimensions = 50 (h) x 20 (w). Internal conditions = Rough, Debris substrate and Dry	Low	
21	Beech Alive 120cm DBH. 20 m high.		Flute 2 m high on Stem. N aspect.	Flute with small cavity at rear	External dimensions = 15 (h) x 15 (w). Internal dimensions = 5 (h) x 2 (w).	Low	
			Tear out 2.5 m high on Limb. NE aspect.	Tear out on underside of limb.	External dimensions = 3 (h) x 3 (w). Internal dimensions = 5 (h) x 2 (w). Internal conditions = Rough substrate and Dry	Low	

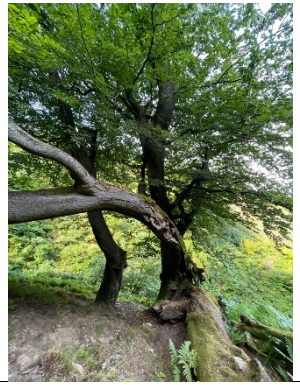
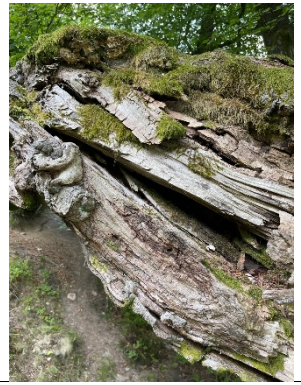
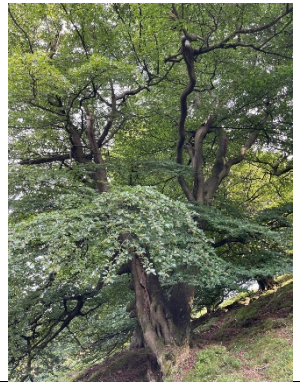
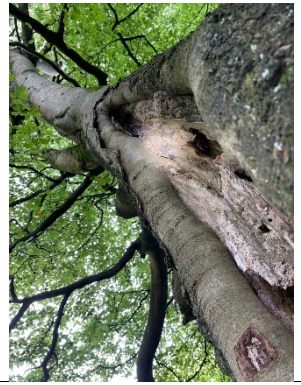
26	Beech Alive 90cm DBH. 18 m high.		Tear out 3 m high on Limb. E aspect.	On underside of limb. Small pocket at apex. Visible from ground	External dimensions = 30 (h) x 5 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Clean, blackened substrate and Dry	Low	
28	Beech Alive 50cm DBH. 12 m high.		Tear out 4 m high on Limb. NE aspect.	Tear out with shallow cavity at apex. Visible from ground level	External dimensions = 15 (h) x 5 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Blackened, Rough substrate and Dry	Low	
31	Beech Alive 40cm DBH. 12 m high.		Tear out 12 m high on Limb. NW aspect.	High tear out on limb. Cavity apparent	External dimensions = 20 (h) x 10 (w).	Moderate	

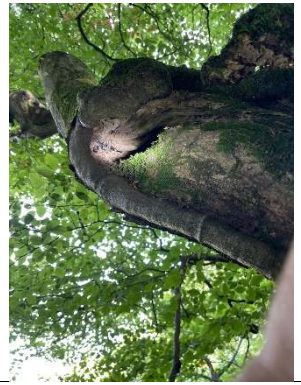
32	Beech Alive 60cm DBH. 20 m high.		Knot hole 4 m high on Stem. E aspect.	Shallow, but may shelter single bat.	External dimensions = 4 (h) x 4 (w). Internal dimensions = 4 (h) x 4 (w). Internal conditions = Clean, Rough substrate and Dry	Low	
33	Beech Alive 70cm DBH. 18 m high.		Tear out 5 m high on Limb. N aspect.	Tear out on top of limb. Apex visible from ground	External dimensions = 15 (h) x 3 (w). Internal dimensions = 2 (h) x 2 (w). Internal conditions = Rough, Debris substrate and Damp	Low	
35	Beech Alive 100cm DBH. 18 m high.		Tear out 3 m high on Stem. SW aspect.	0	External dimensions = 20 (h) x 10 (w). Internal dimensions = 3 (h) x 5 (w). Internal conditions = Clean, Smooth, Debris substrate and Dry	Low	

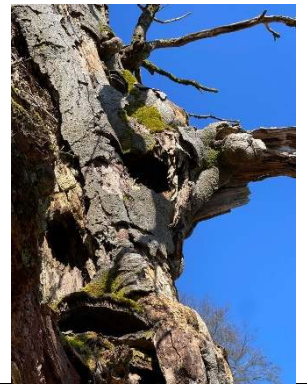
			Tear out 10 m high on Limb. S aspect.	Deep apex cavity, internal height not visible from ground. Internal inspection on 20/04/23 : limb failed. Feature now 3m in height.	External dimensions = 30 (h) x 15 (w). Internal dimensions = 20 (h) x 10 (w). Internal conditions = Clean, Blackened substrate and Dry	Moderate	
36	Beech Alive 90cm DBH. 22 m high.		Canker 5 m high on Limb. NE aspect.	Wound/ canker on limb leading to cavity. Hollow section of stem. Squirrel present on 20/04/23	External dimensions = 10 (h) x 10 (w). Internal dimensions = 50 (h) x 10 (w). Internal conditions = Clean, Bumpy, Debris substrate and Dry	Moderate	
			Tear out 8 m high on Limb. NE aspect.	Tear out with heartwood decay lading to cavity	External dimensions = 20 (h) x 7 (w). Internal dimensions = 20 (h) x 10 (w). Internal conditions = Rough, Debris substrate and Damp	Moderate	

37	Beech Alive 80cm DBH. 20 m high.		Tear out 2 m high on Limb. NW aspect.	Large tear out leading to hollowed cavity tube terminating at upward facing knot hole. Lower tear out is dome extending to 50 cm.	External dimensions = 40 (h) x 20 (w). Internal dimensions = 100 (h) x 15 (w). Internal conditions = Dirty, Debris substrate and Damp	Moderate	
38	Beech Alive 200cm DBH. 20 m high.		Tear out 1 m high on Limb. N aspect.	Small tear out with squirrel damage leading to large hollow cavity in fallen limb.	External dimensions = 15 (h) x 3 (w). Internal dimensions = 110 (h) x 7 (w). Internal conditions = Dirty, Dusty substrate and Dry	Moderate	
			Stress fracture 2 m high on Stem. S aspect.	Seam 2 m in height terminating with small pocket at apex.	External dimensions = 15 (h) x 1 (w). Internal dimensions = 5 (h) x 2 (w). Internal conditions = Clean, Rough, Dusty substrate and Dry	Low	

39	Beech Alive 90cm DBH. 22 m high.		Tear out 2 m high on Stem. W aspect.	Large cavity extending upward into stem	External dimensions = 30 (h) x 20 (w). Internal dimensions = 50 (h) x 10 (w). Internal conditions = Dirty, Debris substrate and Dry	Moderate	
40	Beech Alive 100cm DBH. 18 m high.		Tear out 4 m high on Limb. NW aspect.	Large tear out with wide cavity at apex	External dimensions = 30 (h) x 20 (w). Internal dimensions = 30 (h) x 7 (w). Internal conditions = Blackened, Rough, Debris substrate and Damp	Moderate	
42	Beech Alive 100cm DBH. 18 m high.		Canker 3 m high on Stem. SW aspect.	Canker leading to bowl cavity.	External dimensions = 15 (h) x 20 (w). Internal dimensions = 0 (h) x 15 (w). Internal conditions = Clean, Rough substrate and Dry	Low	

43	Beech Alive 90cm DBH. 20 m high.		Tear out 4 m high on Stem. W aspect.	Large tear out with large cavity at apex	External dimensions = 30 (h) x 20 (w). Internal dimensions = 50 (h) x 10 (w). Internal conditions = Dirty, Debris substrate and Dry	Moderate	
44	Beech Alive 80cm DBH. 18 m high.		Stress fracture 2 m high on Limb. S aspect.	Large split at base of failed limb creating narrow cavities	External dimensions = 15 (h) x 2 (w). Internal dimensions = 2 (h) x 2 (w). Internal conditions = Rough, Dusty substrate and Dry	Low	
45	Beech Alive 50cm DBH. 16 m high.		Tear out 2.5 m high on Stem. S aspect.	Low tear out. Small pocket at apex	External dimensions = 20 (h) x 5 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Rough, Debris substrate and Dry	Low	

46	Beech Alive 60cm DBH. 12 m high.		Tear out 3 m high on Stem. S aspect.	Tear out with wide cavity at apex	External dimensions = 30 (h) x 15 (w). Internal dimensions = 20 (h) x 10 (w). Internal conditions = Rough, Dusty, Debris substrate and Damp	Moderate	
47	Beech Alive 100cm DBH. 18 m high.		Tear out 2.5 m high on Limb. S aspect.	Old tear out that has decayed most of the lower limb. Shallow cavity at apex.	External dimensions = 7 (h) x 10 (w). Internal dimensions = 10 (h) x 7 (w). Internal conditions = Rough, Debris substrate and Damp	Low	
50	Beech Alive 1500cm DBH. 6 m high.		Decay 1 m high on Stem. SE aspect.	Rot holes leading to large internal cavities.	External dimensions = 20 (h) x 20 (w). Internal dimensions = 50 (h) x 30 (w). Internal conditions = Clean, Rough substrate and Dry	Moderate	

			Decay 2.5 m high on Stem. SE aspect.	Rot hole. Little owl present.	External dimensions = 20 (h) x 15 (w). Internal dimensions = 50 (d) x 30 (w). Internal conditions = Clean, Rough substrate and Dry	Moderate	
51	Beech Alive 1500cm DBH. 18 m high.		Tear out 4.5 m high on Limb. NW aspect.	Old tear out with significant decay leading to large sheltered cavity	External dimensions = 100 (h) x 30 (w). Internal dimensions = 90 (h) x 20 (w). Internal conditions = Clean, Smooth substrate and Dry	Moderate	
			Tear out 6 m high on Stem. S aspect.	Tear out / knot hole with Tawny owl chick + egg when inspected on 21/04/23	External dimensions = 20 (h) x 10 (w). Internal dimensions = 150 (h) x 20 (w). Internal conditions = Dirty, Debris, Sludgy substrate and Damp	Moderate	

			Tear out 6 m high on Stem. S aspect.	Small tear out at base of limb. Bird nest (great tit) present	External dimensions = 16 (h) x 5 (w). Internal dimensions = 12 (h) x 27 (w). Internal conditions = Clean, Blackened, Smooth substrate and Damp	Moderate	
			Tear out 4 m high on Limb. E aspect.	Tear out on underside of limb. Cavities at top and bottom of feature.	External dimensions = 30 (h) x 7 (w). Internal dimensions = 25 (h) x 4 (w). Internal conditions = Blackened, Rough substrate and Damp	Moderate	
52	Beech Alive 120cm DBH. 12 m high.		Tear out 3 m high on Limb. W aspect.	Large tear out on limb with large cavity leading away from stem	External dimensions = 40 (h) x 15 (w). Internal dimensions = 30 (h) x 10 (w). Internal conditions = Debris substrate and Dry	Moderate	

53	Beech Alive 80cm DBH. 16 m high.		Tear out 8 m high on Stem. E aspect.	Large tear out with narrow cavity at apex	External dimensions = 15 (h) x 5 (w). Internal dimensions = 10 (h) x 2 (w).	Low	
			Tear out 12 m high on Limb. NE aspect.	Tear out under limb with cavity at base leading toward stem	External dimensions = 6 (h) x 4 (w). Internal dimensions = 0 (h) x 2.5 (w).	Moderate	
54	Beech Alive 100cm DBH. 16 m high.		Tear out 10 m high on Limb. E aspect.	Tear out high in canopy	External dimensions = 30 (h) x 20 (w). Internal dimensions = 10 (h) x 15 (w). Internal conditions = Dirty, Sludgy substrate and Wet	Moderate	

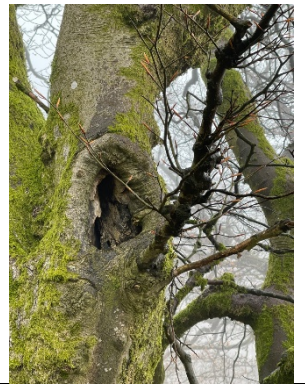
			Tear out 10 m high on Limb. E aspect.	Tear out with internal decay	External dimensions = 15 (h) x 15 (w). Internal dimensions = 10 (h) x 5 (w). Internal conditions = Blackened, Rough substrate and Damp	Moderate	

Table 3. Great crested newt habitat suitability index results

Pond No.	Pond Area (m^2)	Pond permanence	Water Quality	Pond Shading (%)	No. of waterfowl	Occurrence of fish	Ponds within 1km	Terrestrial Habitat within 500m	Macrophyte content (est % total)	HSI score	HSI Category	Notes
1	700	Sometimes dries	Moderate	10	Absent	Absent	5	Moderate	5	0.7029	Good	On farmers land. Lined and fed / drained by pipe to / from Pond 2.
2	650	Dries annually	Poor (assessed during earlier visits)	0	Minor	Absent	5	Good	10	0.565	Below average	Dry at the time of survey.
3	700	Dries annually	Poor	0	Minor	Absent	6	Good	30	0.5951	Below average	Shallow at the time of survey.
4	270	Dries annually	Assumed moderate for assessment	85	Absent	Absent	4	Good	90	0.5992	Average	Dry at the time of survey.
5	180	Sometimes dries	Moderate	0	Minor	Absent	4	Good	30	0.6652	Average	Nearly dry at time of survey (less than 5cm depth in central puddle).
6	190	Sometimes dries	Poor	0	Minor	Absent	5	Good	10	0.6056	Average	Shallow at the time of survey
7	25	Dries annually	Assumed moderate for assessment	0	Absent	Absent	6	Good	95	0.5102	Below Average	Dry at the time of survey.
8	20	Dries annually	Assumed moderate for assessment	0	Absent	Absent	6	Good	95	0.5102	Below Average	Dry at the time of survey.

9	50	Dries annually	Assumed moderate for assessment	0	Absent	Absent	6 (incl. Blaen Bran res.)	Good	80	0.5558	Below Average	Dry at the time of survey.
10	100	Sometimes dries	Poor	0	Minor	Absent	6 (incl. Blaen Bran res.)	Good	20	0.5844	Below Average	Shallow at the time of survey.
11	150	Sometimes dries	Moderate	0	Minor	Absent	1	Good	20	0.6137	Average	Shallow at the time of survey.
12	600	Sometimes dries	Moderate	0	Minor	Absent	3	Good	70	0.7697	Good	Juncus recently dredged from edges.
13	88	Dries annually	Poor	10	Absent	Absent	6	Poor	5	0.42	Poor	Dry at the time of survey.
14	109	Sometimes dries	Poor	25	Minor	Absent	6	Poor	5	0.51	Below average	Dry at the time of survey.
15	336	Never	Moderate	40	Minor	Absent	5	Moderate	20	0.71	Good	Known history of GCN.

Table 4. Great crested newt survey results 2021

Pond and date of survey	Bottle Trap				Torchlight				Egg Search	Vegetation (/5)	Turbidity (/5)	Comments
	Tc	Lv	Lh	Lv/Lh	Tc	Lv	Lh	Lv/Lh	Tc			
Pond 1												
08-09/04/2021										0	3	
10-11/05/2021										0	3	
17-18/05/2021		2♀ 4♂	4♀ 27♂		2♂			97 inc 3 efts		0	4	
19-20/05/2021		1♀ 2♂	12♀ 9♂		1♂	3♂			Yes	0	4	
26-27/05/2021	3♀, 1 Juv.	1♀ 5♂	3♀ 10♂		2♀ 5♂			347, 26 efts		0	4	
02-03/06/2021	1♂	3♀ 10♂	1♀ 5♂		2♂			101, 23 efts		0	3	
Pond 2												
08-09/04/2021								1		2	4	1 toad and tadpoles

10-11/05/2021										2	4	tadpoles
17-18/05/2021		2♀ 1♂			2♀ (terrestrial) 4♂ (aquatic)			16		2	2	female GCNs were found on land
19-20/05/2021		3♀ 1♂	2♀ 3♂		4♀ 1♂			22		2	3	
26-27/05/2021	1♀ 1♂	2♀ 4♂	18♀ 6♂		2♀ 6♂	1♂	4♂	103	Yes	2	2	
02-03/06/2021	1♀	4♀ 3♂	4♀ 4♂		1♀ 1♂			41		2	4	
Pond 3												
08-09/04/2021							1♀	1	No	1	4	1 toad
10-11/05/2021									No	1	4	
17-18/05/2021								4	No	2	3	
19-20/05/2021			1♀			1♂	2♂	78	No	3	3	
26-27/05/2021					1 Juv. (terrestrial)	2♀ 2♂	2♂	10	No	3	3	
02-03/06/2021					1 Juv. (terrestrial)			19	No	3	2	
Pond 15												
26-27/04/2022	1♂		1		3♀ 14♂	2	2	1	No	1	1	
28-29/04/2022	1♀ 4♂		2		5♀ 31♂			30+	Yes	1	1	
05-06/05/2022	1♂	3	6		3♀ 31♂	3	10	17	Yes	2	1	
11-12/05/2022	3♀ 4♂	5	10		5♀ 8♂	1	6	19	Yes	2	2	
26-27/05/2022			3		2♀ 4♂	1		13	Yes	2	2	
06-07/06/2021	2♂				1♂			29	Yes	2	1	

Table 5. Great crested newt survey results 2022 and 2023

Pond and date of Survey	Bottle trap				Torchlight				Egg search	Comments
	Tc	Lv	Lh	Lv/Lh	Tc	Lv	Lh	Lv/Lh	Tc	
Pond 1										

17-18/04/2023						13 adult			No – no vegetation	
11-12/05/2023							2♂ 1♀, 1 Juv.			
15-16/05/2023		1♂	3♂ 1♀		Possible 1♂			23♀		Tadpoles
22-23/05/2023	2♀	1♂	2♀					4		
30-31/05/2023		1♀						1♀		
05-06/06/2023		2♂	3♂			1♀		7♀		
Pond 2										
17-18/04/2023					2♀ 1♂	15 adult			No – no suitable vegetation that was safe to access.	
11-12/05/2023			1♀			1♂		1♀		1 common frog larvae
15-16/05/2023		1♂ 1♀	2♂		Possible 1♂ 1♀	1♂		8♀		Tadpoles
22-23/05/2023		1♀					1♂ 1♀	4		
30-31/06/2023										
05-06/06/2023								2♀		
Pond 3										
17-18/04/2023					2♂	58 adult			No - no suitable vegetation that was safe to access.	
11-12/04/2023										1 adult common frog
15-16/05/2023			1♀			1♀	1♀	7♀		Tadpoles
22-23/05/2023		1♂	1♂					4		
30-31/05/2023							1♂	2♀		
05-06/06/2023								3♀		
Pond 4										
17-18/04/2023		2♂					94 adult		Yes	
11-12/05/2023			2♂				21♀			
15-16/05/2023							1♂	25♀		Tadpoles

22-23/05/2023			1♂ 3♀					2♀ 7		
30-31/05/2023							2♀	10♀		
05-06/06/2023			1♂ 1♀				4♂	11♀		
Pond 5										
17-18/04/2023							~100 adult		No. No suitable vegetation	
Pond 6										
17-18/04/2023									No. No suitable vegetation	
Pond 7										
17-18/04/2023									No. No suitable vegetation	
Pond 8										
17-18/04/2023									No. No suitable vegetation	
Pond 9										
17-18/04/2023									No. No suitable vegetation	
Pond 10										
17-18/04/2023									No. No suitable vegetation	
Pond 11										
17-18/04/2023									No. No suitable vegetation	
Pond 12										
17-18/04/2023									No. No suitable vegetation	
Pond 13										
07/04/2022									HSI only: poor	
Pond 14										
07/04/2022									HIS only: below average	
Pond 15										
26-27/04/2022	1♂		1		3♀ 14♂	2	2	1	No	

28-29/04/2022	1♀ 4♂		2		5♀ 31♂			30+	Yes	
05-06/05/2022	1♂	3	6		3♀ 31♂	3	10	17	Yes	
11-12/05/2022	3♀ 4♂	5	10		5♀ 8♂	1	6	19	Yes	
26-27/05/2022			3		2♀ 4♂	1		13	Yes	
06-07/06/2022	2♂				1♂			29	Yes	

Appendix 6.4 Phase 1 Habitat Survey Target Notes

Target Note	Description	Photograph
1	Stag's horn clubmoss present within dry heath.	
2	Small area of wet heath with a series of pools. Vegetation is dominated by purple moor-grass and cross-leaved heath but with frequent hare's tail cottongrass, particularly around the pools which contain frequent common cottongrass and soft rush and some *Sphagnum denticulatum* and *S. fallax* at the margins.	

3	Dry heath which appears to have been affected by heather beetle *Lochmaea suturalis*.	

4	Derelict building. Some potential roost features including cavities under lintels but likely to be fairly exposed. Low potential for roosting bats due to location.	 

Appendix 6.5 Bat call identification

Recorded bat calls (full spectrum .wav files) were run through Wildlife Acoustics Kaleidoscope Pro auto-identification software, and then the zero-crossings output files were analysed / verified using the Analook software to confirm the identity of the bats present. Where a zero-crossings file was empty, the original full-spectrum (wav) file was checked, to confirm whether or not a bat pass had been recorded. Where possible, the bat was identified to species level. Species of the genera Myotis and Plecotus were analysed to genus level as overlapping call parameters make species identification problematic (Hundt, 2012).

For pipistrelle species the following criteria, based on measurements of peak frequency, were used to classify calls:

- Common pipistrelle ≥42 and <49 kHz
- Soprano pipistrelle ≥51 kHz
- Nathusius' pipistrelle <39 kHz
- Common pipistrelle / Soprano pipistrelle ≥49 and <51 kHz
- Common pipistrelle / Nathusius' pipistrelle ≥39 and <42 kHz

Calculation of relative activity

The SM4 detectors were configured to record above the level of ambient noise, such as from wind or rain, and set to define a bat pass (P) as a call note of >2 milliseconds (ms) separated from another by more than one second.

AnalookW (Version 4.2, 2017) software was used to verify bat calls. The software enables analysis of the relative activity (referred to as 'activity' in the text below) of different species of bats by counting the number of bat passes (P) recorded within a unit of time – hour (h) was used. More than one pass of the same species was counted within a sound file if multiple bats were recorded calling simultaneously. During analysis of sound files, it was possible to estimate the minimum number of bats recorded on individual sound files but not whether consecutive sound files had recorded, for example, a number of individual bats passing as they commute to a feeding habitat or one bat calling repeatedly as it flies up and down a feature cannot be distinguished. Although relative abundance cannot therefore be estimated from this analysis, the number of bat passes does provide an indication of the importance of features / habitats to bats by assigning a level of bat activity that is associated with that feature, regardless of the type of activity.

Analysis by sunset-sunrise times

As part of the analysis of nocturnal patterns of behaviour for bats the data were split into discrete time periods relating to their proximity to sunset or sunrise. The time categories (time codes: TC) were as follows:

- TC 0 = before sunset / after sunrise
- TC 1 = 0-20 min after sunset
- TC 2 = 20-40 min after sunset
- TC 3 = 40-60 min after sunset
- TC 4 = 60-80 min after sunset

- TC 5 = 80-100 min after sunset
- TC 6 = 100-120 min after sunset
- TC 7 = Middle of night (varies across seasons)
- TC 8 = 120-100 min before sunrise
- TC 9 = 100-80 min before sunrise
- TC 10 = 80-60 min before sunrise
- TC 11 = 60-40 min before sunrise
- TC 12 = 40-20 min before sunrise
- TC 13 = 20-0 min before sunrise

For each of these categories P/h was calculated to allow a comparison between the activity level recorded in different time periods, and a correction factor was applied to TC7 data to allow for variation in night length throughout the survey season.

Appendix 6.6. Photographs

Ref	Description	Photograph
1	Examples of dry heath from across the Site with heather (top) and bilberry (bottom) dominant.	 

2	Sheep grazed acid grassland dominated by mat grass (U5) in the north-western part of the survey area.	
3	Closely grazed acid grassland on Mynydd Llwyd dominated by common bent and sheep's fescue (U4)	

4	Wet heath with frequent purple moor-grass and cross-leaved heath, south-west of Mynydd Maen.	
5	Conifer plantation above Gwyddon fach.	

6	Pond 3 showing extensive livestock poaching at edges and limited marginal vegetation.	
7	Pond 5 with marginal vegetation limited to patchy cover of soft rush.	

8	Pond 6 livestock poached with limited marginal vegetation and dry at the time of survey (in 2022)	
9	Pond 15 with emergent and marginal vegetation and good surrounding habitat.	

10	Pond 12 recently dredged at the time of survey in 2020.	
11	Extensive bracken, typical of much of the sloping ground adjacent to the Site.	

12	Area of acid grassland / heath mosaic which had recently been mown prior to 2022 walkover survey, at the centre of the Site.	
13	Species poor hedgerow alongside access route.