
4.3 Protected/Notable Species

Badger

Bats

Bat records were found both within the site and within 1 km of the site. No direct observations were made. No signs of any bat presence were noted at the time of the survey. Woodland and scrub within and around the site could support foraging and commuting bats. Some of the trees within and around the site could potentially support roosting bats. Development of the site will result in the loss of suitable habitats for bats. Any bats or roosts present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Brown Hare

Brown hare records were found within 1 km of the site. No direct observations were made. No signs of any brown hare presence were noted at the time of the survey. Given the proximity of the site to open farmland, the woodland and scrub within and around the site could potentially support foraging and commuting brown hares. Development of the site will result in the loss of suitable habitat for brown hares. Any brown hares present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Fox

No direct observations were made; however, fox droppings were noted along the tracks within the site at the time of the survey. Development of the site will result in the loss of suitable habitat for foxes. Any foxes present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Hedgehog

Hedgehog records were found within 1 km of the site. No direct observations were made. No signs of any hedgehog presence were noted at the time of the survey. Woodland and scrub within and around the site could potentially provide suitable commuting and foraging habitat for hedgehogs. Overgrown areas could also provide suitable nesting and hibernating sites for hedgehogs. Development of the site will result in the loss of habitats for hedgehogs. Any hedgehogs, including any nesting or hibernating hedgehogs, present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Otter

Otter records were found within 1 km of the site, including for locations along the Glanyrafon Brook, which is located around 360 m to the north of the site. No direct observations were made. No signs of any otter presence were noted at the time of the survey. The habitats within the site were not generally suitable for otters. As a precaution, recommendations are provided in Section 5.0.

Polecat

Polecat records were found within 1 km of the site. No direct observations were made. No signs of any polecat presence were noted at the time of the survey. Woodland and scrub within and around the site could potentially provide suitable commuting and foraging habitat for polecats. Development of the site will result in the loss of habitat for polecats. Any polecats present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Rabbit

No direct observations were made; however, rabbit droppings were noted within the ephemeral habitat in the centre of the site at the time of the survey. Development of the site will result in the loss of suitable habitat for rabbits. Any rabbits or warrens present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Water Vole

No water vole records were found within 1 km of the site. No direct observations were made. No signs of any water vole presence were noted at the time of the survey. The habitats within the site were not generally suitable for water voles. As a precaution, recommendations are provided in Section 5.0.

Birds

Over two hundred and fifty bird records were found within 1 km of the site. The habitats within the site were supporting a variety of breeding birds at the time of the survey: blue tits, long-tailed tits, goldfinches, chiffchaffs, blackbirds, magpies, and crows. The habitats within the site could potentially support other birds, including Section 7 bird species which have been recorded within 1 km of the site, such as: linnet, dunnoek, starling, song thrush, house sparrow, swift, and herring gull. Development of the site will result in the loss of breeding, nesting, foraging and commuting habitats for birds. Any birds or nests present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Reptiles and Amphibians

Reptile and amphibian records were found within 1 km of the site. Several great-crested newt records were found for ponds within 500 m of the site. No direct observations were made and no signs of any reptile or amphibian presence were noted at the time of the survey. Habitats within the site could potentially support reptiles and amphibians including great-crested newts. Development of the site will result in the loss of suitable habitats for reptiles and amphibians, and any reptiles and amphibians present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Invertebrates

Invertebrate records were found within 1 km of the site including records for the following species, which were all recorded on the Bersham Pit Tip site to the north of the site:

- Buff-tailed Bumblebee
- Cinnabar (UK BAP & S7)
- Common Carder Bee
- Early Colletes
- Red-tailed Bumblebee
- Small Garden Bumblebee
- White-tailed Bumblebee

A golden-ringed dragonfly was also recorded along the Glanyrafon Brook to the north of the Bersham Colliery Tip site, to the north of the site. Whilst none of these particular species were observed at the time of the survey, the habitats within the site provided foraging resources that would be likely to support these species.

A variety of invertebrates were directly observed foraging within the site including cinnabar moths (S7) and brown-banded carder bees (S7). The habitats within the site could also potentially support dingy skippers (S7), and grizzled skippers (S7). Development of the site will result in the loss of breeding, foraging, nesting, and commuting habitats for invertebrates. Any invertebrates present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

Plants

Records for over sixty higher or lower plant species were found within 1 km of the site. No notable plant species were recorded during the survey. The colliery spoil habitats within the site have the potential to support notable plants. Development of the site will result in the loss of suitable habitats for notable plants. Any notable plants present within the site would be at risk of direct harm. Recommendations are provided in Section 5.0.

4.4 Invasive Species

Invasive species records were found within 1 km of the site including records for Japanese knotweed and harlequin ladybird which were recorded within the Bersham Colliery Tip site to the north of the site. Japanese knotweed was present within the northern portion of the site during the survey. Development of the site will involve the movement of soils and substrate, and any Japanese knotweed present within the site could be potentially spread to other locations within the site or off-site. Recommendations are provided in Section 5.0.

5.0 RECOMMENDATIONS

5.1 Designated Sites

Statutory Sites

Johnstown Newt Sites Special Area of Conservation (SAC)

As a precaution, mitigation measures to prevent any potential indirect impacts (i.e., dust/particulates, noise, light) on this site are recommended. Appropriate control measures during the site clearance, construction and operational phases are also recommended. General mitigation measures should be adhered to (see Section 5.5). As the development could potentially impact mobile qualifying features of the SAC (great-crested newts), it is recommended that a Habitats Regulations Assessment (HRA) screening assessment is completed, and a Section 28 SSSI Assent application is submitted to Natural Resources Wales.

Stryt Las a'r Hafod Site of Special Scientific Interest (SSSI)

As a precaution, mitigation measures to prevent any potential indirect impacts (i.e., dust/particulates, noise, light) on this site are recommended. Appropriate control measures during the site clearance, construction and operational phases are also recommended. General mitigation measures should be adhered to (see Section 5.5). As the development could potentially impact mobile qualifying features of the SSSI (great-crested newts), it is recommended that a Habitats Regulations Assessment (HRA) screening assessment is completed, and a Section 28 SSSI Assent application is submitted to Natural Resources Wales.

Non-statutory Sites

North East Wales Important Invertebrate Area (IIA)

As a precaution, mitigation measures to prevent any potential indirect impacts (i.e., dust/particulates, noise, light) on this site are recommended. Appropriate control measures during the site clearance, construction and operational phases are also recommended. General mitigation measures should be adhered to (see Section 5.5).

W317 Erddig Estate Wildlife Site

As a precaution, mitigation measures to prevent any potential indirect impacts (i.e., dust/particulates, noise, light, pollution) on this site are recommended. Appropriate control measures during the site clearance, construction and operational phases are also recommended. General mitigation measures should be adhered to (see Section 5.5).

Ancient Woodland

As a precaution, mitigation measures to prevent any potential indirect impacts (i.e., dust/particulates, noise, light, pollution) on this site are recommended. Appropriate control measures during the site clearance, construction and operational phases are also recommended. General mitigation measures should be adhered to (see Section 5.5).

Bonc yr Hafod Country Park

As a precaution, mitigation measures to prevent any potential indirect impacts (i.e., dust/particulates, noise, light, pollution) on this site are recommended. Appropriate control measures during the site clearance, construction and operational phases are also recommended. General mitigation measures should be adhered to (see Section 5.5).

5.2 Habitats

Mature and Early-mature Trees

Sensitive review and update of the Landscape Master Plan to avoid the loss of existing mature and early mature trees including along the south eastern boundary, and within parts of the woodland and scrub areas throughout the site is recommended. Retention of existing trees, and creation of new habitats incorporating these trees as part of a habitat creation scheme for the site is recommended. Protection of trees that are to be retained from any potential damage to roots and pollution, in accordance with British Standard 5837: 2012 "Trees in relation to design, demolition and construction - recommendations" is also recommended. General mitigation measures should be adhered to (see Section 5.5).

Scrub

Sensitive review and update of the Landscape Master Plan to avoid the loss of existing scrub including along the south eastern boundary, and within parts of the woodland and scrub areas throughout the site is recommended. Retention of existing scrub, and creation of new habitats incorporating these areas of scrub as part of a habitat creation scheme for the site is recommended. Protection of scrub that is to be retained from any potential damage to roots and pollution, in accordance with British Standard 5837: 2012 "Trees in relation to design, demolition and construction - recommendations" is also recommended. General mitigation measures should be adhered to (see Section 5.5).

Neutral Grassland

Sensitive review and update of the Landscape Master Plan to avoid the loss of neutral grassland habitats is recommended. Retention of existing neutral grassland habitats, and creation of new neutral grassland habitats as part of a habitat creation scheme for the site is recommended. These should incorporate the same and/or enhanced species mix, including abundant butterfly food plants, and plants favoured by brown-banded carder bees, Cinnabar moths, other bumblebees, and pollinating insects. Protective measures to avoid any impacts on any retained and created neutral grassland habitats during site works, including ecological supervision of works is recommended. General mitigation measures should be adhered to (see Section 5.5).

Foxgloves, Bird's-foot Trefoil and Cinquefoil

Sensitive review and update of the Landscape Master Plan to avoid the loss of bird's foot trefoil, creeping cinquefoil, and foxgloves through the retention of these plants in-situ where possible, and creation of new habitats incorporating these plants as part of a habitat creation scheme for the site is recommended. Protective measures to avoid any impact on any of these plants during site works, including ecological supervision of works is recommended. General mitigation measures should be adhered to (see Section 5.5).

Open Mosaic Habitats on Previously Developed Land

Sensitive review and update of the Landscape Master Plan to avoid the loss of open mosaic habitats through retention of existing open mosaic habitats in-situ where possible, and creation of new open mosaic habitats as part of a habitat creation scheme for the site is recommended. Protective measures to avoid any impact on any retained or created areas of open mosaic habitat during site works, including ecological supervision of works is recommended. General mitigation measures should be adhered to (see Section 5.5).

5.3 Protected/Notable Species

Badger

A specialist badger survey of the site, including habitats located within 30 m of any areas that will be impacted by site works, is recommended in order to inform mitigation, habitat retention and creation requirements. The survey should be completed by a suitably experienced and licensed badger specialist and can be completed at any time of year. Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for badgers, through habitat retention and creation is recommended. Protective measures to avoid any impacts on badgers or setts during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Bats

The habitats within and around the site could potentially support foraging, commuting and roosting bats. Bat activity surveys and Preliminary Bat Roost Assessment (PBRA) surveys are recommended to inform the requirement for any further bat surveys, and inform mitigation, habitat retention and creation requirements. Bat activity surveys can be carried out between April and October, with one visit per month, and the Preliminary Bat Roost Assessments can be carried out at any time of year (BCT, 2016). Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for bats, through habitat retention and creation is recommended. Protective measures to avoid any impacts on bats or roosts during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Brown Hare

The habitats within and around the site could potentially support foraging and commuting brown hares. Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for brown hares, through habitat retention and creation is recommended. Protective measures to avoid any impacts on brown hares during site works, including pre-construction checks, and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Fox

The habitats within the site are supporting foxes. Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for foxes, through habitat retention and creation is recommended. Protective measures to avoid any impacts on foxes or fox earths during site works, including pre-construction checks, and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Hedgehog

The habitats within and around the site could potentially support commuting, foraging, nesting, and hibernating hedgehogs. Whilst further survey to inform appropriate mitigation would be recommended, the habitats within the site are not considered to be conducive to further survey because of factors including a lack of clearly defined edge habitats, the uneven and unstable terrain, and the nature of the substrate, which would all undermine the accuracy of any survey. Sensitive review and update of the Landscape Master Plan to avoid the loss of any suitable habitat for hedgehogs, through habitat retention and creation is recommended. In the absence of further survey, it is recommended that habitat retention and creation for hedgehogs is based on a general estimate assuming the presence of a maximum number of one hog per hectare (Morris, 2006). With the Phase 1 site being approximately 4 Ha, this would mean habitat provision for around four hedgehogs for this area. Protective measures to avoid any impacts on hedgehogs including nesting or hibernating hedgehogs during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Otter

The habitats within the site were not generally suitable for otters, however, otter records have been found for the Glanyrafon Brook which is around 360 m to the north of the site. As a precaution, protective measures to avoid any impacts on otters or holts during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Polecat

The habitats within and around the site could potentially support commuting and foraging polecats. Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for polecats, through habitat retention and creation is recommended. Protective measures to avoid any impacts on polecats during site works, including pre-construction checks, and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Rabbit

The habitats within the site are supporting rabbits. Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for rabbits, through habitat retention and creation is recommended. Protective measures to avoid any impacts on rabbits or warrens during site works, including pre-construction checks, and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Water Vole

The habitats within the site were not generally suitable for water voles, however, the Glanrafon Brook which is around 360 m to the north of the site could potentially support water voles. As a precaution, protective measures to avoid any impacts on water voles or burrows during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Birds

The habitats within the site are supporting breeding birds and could potentially support other notable birds. Breeding bird surveys of the site are recommended to inform mitigation, habitat retention and creation requirements. Breeding bird surveys can be carried out from March to July, typically consisting of between four and six visits. Sensitive review and update of the Landscape Master Plan to avoid loss of any suitable breeding, nesting, foraging and commuting habitats for birds is recommended. Retention of existing habitats, and creation of new habitats, including scrub and neutral grassland, as well as woodland that is supportive to birds, as part of a habitat creation scheme for the site is recommended. Protective measures to avoid any impacts on birds or nests during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Reptiles and Amphibians

The habitats within the site could potentially support reptiles and amphibians. Specialist reptile surveys of the site are recommended to inform mitigation, habitat retention and creation requirements. Reptile surveys can be carried out from March to October (Froglife, 1999). The habitats within the site could potentially support great-crested newts. Great-crested newt surveys (HSI assessment and eDNA surveys) to assess the suitability of waterbodies within the site and within 500 m of the site for great-crested newts are recommended. HSI assessments can be carried out at any time of year. eDNA surveys can be undertaken from mid-April to the end of June. Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for reptiles and amphibians, through habitat retention and creation is recommended. Protective measures to avoid any impacts on reptiles and amphibians during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Invertebrates

The habitats within the site are supporting notable invertebrates. Specialist invertebrate surveys of the site are recommended to inform mitigation, habitat retention and creation requirements. Invertebrate surveys can be carried out between April and September and will consist of between three and seven visits. Sensitive review and update of the Landscape Master Plan to avoid the loss of suitable habitat for invertebrates including brown-banded carder bees (S7 and Threatened bee), Cinnabar moths(S7), dingy and grizzled skippers (S7) is recommended. Retention of existing neutral grassland, ephemeral/short perennial and open mosaic habitats, and plants including bird's foot trefoil, creeping cinquefoil and foxgloves, in-situ where possible, and creation of new habitats, incorporating these habitats, and plants, as part of a habitat creation scheme for the site is recommended. Protective measures to avoid any impacts on invertebrates including surface and ground-nesting bumblebees during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

Plants

The colliery spoil and open mosaic habitats within the site have the potential to support notable plants. A Phase 2 botanical survey of the site is recommended to inform mitigation, habitat retention and creation requirements. Phase 2 botanical surveys can be carried out between April and September. Sensitive review and update of the Landscape Master Plan to avoid the loss of any notable plants through retention of any existing notable plants in-situ where possible, and creation of new habitats incorporating these notable plants as part of a habitat creation scheme for the site is recommended. Protective measures to avoid any impacts on notable plants during site works, including pre-construction checks, undertaking works under a Precautionary Method of Working (PMW) and ecological supervision of works would also be recommended. General mitigation measures should be adhered to (see Section 5.5).

5.4 Invasive Species

Japanese Knotweed

Japanese knotweed is present within the site. Applying appropriate control measures to avoid the spread of the Japanese knotweed during site works as advised by a specialist contractor would be recommended.

5.5 General Mitigation Measures

Mature and Early-mature Trees, and Scrub

It is recommended that all works are carried out in accordance with BS5837 to ensure protection of trees. Protective fencing should be erected around retained trees and scrub for the duration of construction including Root Protection Areas as directed by an arboriculturist and in accordance with the British Standard BS 5837:2012. All fuel should be stored in an appropriate compound outside of all tree root protection areas and appropriate capture systems should be put into place for the spillage of any oil and fuel to prevent any pollution.

Timing of Works

Given the large areas of potential bird nesting habitats present within the site, it is recommended that vegetation should only be cleared outside of the bird breeding season (outside of the end of February to end of August inclusive). Irrespective of this, all vegetation clearance should be undertaken under a Precautionary Method of Working (PMW) with regard to nesting birds and under the supervision of an Ecological Clerk of Works (ECoW). To minimise the potential for causing direct harm to any nesting or hibernating hedgehogs, clearance of vegetation should also only be undertaken outside of the main hedgehog breeding and hibernating seasons. A window of opportunity would typically exist from around the end of August to the end of October, potentially mid November with milder conditions, between the main breeding season but prior to hibernation. All vegetation clearance should be undertaken under a Precautionary Method of Working (PMW) with regard to nesting or hibernating hedgehogs and under the supervision of an Ecological Clerk of Works (ECoW).

Ecological Clerk of Works (ECoW)

All vegetation clearance work should be undertaken on a staged basis and under the supervision of a suitably qualified ecologist - Ecological Clerk of Works (ECoW). Given the diverse species likely to be present on site, the person(s) nominated to provide ECoW supervision should be suitably qualified, experienced and licensed to cover the full range of Protected and/or Priority Species that could be potentially present.

Pre-construction Checks

No vegetation clearance should be undertaken prior to thorough pre-construction checks being undertaken for all species, and to check the site's baseline. Pre-construction checks should be undertaken prior to the start of any site works by a suitably qualified ecologist - Ecological Clerk of Works (ECoW). No site works should commence without written confirmation from the ecologist - Ecological Clerk of Works (ECoW) that it is safe to proceed. Should any Protected or Priority or other species be found during pre-construction checks, appropriate steps should be taken as necessary, to safeguard any animals involved and ensure compliance with all relevant legislation.

Accidental Damage and Physical Harm

To prevent any impacts occurring, measures including following are recommended:

- Appropriate fencing should be placed around the site to exclude species from entering the construction site. The fencing would need to be carefully selected to ensure it is appropriate for safely excluding range of species including badgers, brown hares, foxes, hedgehogs, otters, polecats, rabbits and amphibians.
- Buffer zones of at least 2 m should be left between the site and adjacent habitats including any trees and scrub.
- Construction site features including excavated ground, tunnels, pipes, open water-filled trenches, and any hazardous materials, should be managed appropriately to prevent any harm to any species that should inadvertently enter the construction site.
- All excavations, tunnels, pipes and trenches should be covered overnight and should be checked every morning for the presence of any species.
- All trenches and excavations should be provided with an escape ramp (such as a wooden plank) that is suitable for use by small animals including hedgehogs as well as larger animals such as badgers.
- Storage of materials should not be within vegetated areas but on areas of hard standing or tarmac.
- Storage of topsoil and soft building materials within the site that could attract digging or burrowing animals should be avoided where possible and should be subject to daily inspections before site work commences.
- No access should be allowed to habitats that have been retained or created.
- Contractors should be briefed on the ecological sensitivity of the site habitats and requirements through Tool Box Talks by a suitably qualified ecologist - Ecological Clerk of Works (ECoW).

Dust

To prevent any impacts occurring, measures including the following are recommended:

- During the site clearance phase the area cleared at any one time should be minimized.
- Any dust emitting works should be avoided during hot, dry and/or windy weather conditions.
- Any stockpiles of soil on site or skips containing soils should be kept covered at all times.
- Any exposed areas of soil should be dampened down as necessary during dry weather conditions.
- To protect retained and created habitats from dust or mud smothering, a buffer zone should be left between the construction site and the habitats.

Noise or Vibration

To prevent any impacts occurring, measures including the following are recommended:

- Site works should be carefully timed to avoid impact on species during their most sensitive seasons, including breeding birds and amphibians, and hibernating hedgehogs, and no site works should be undertaken during hours of darkness, and the hours around dawn and dusk in particular should be avoided, when species are likely to be at their most active. Timings and operating hours should be agreed with the local authority.
- Equipment, machinery and techniques used should be specifically and carefully selected to ensure noise and vibration impacts are where possible avoided or minimised.
- Activities such as loading/unloading vehicles and dismantling scaffolding should be conducted in a manner to minimise noise generation, as far as reasonably practicable.
- Contractors should be briefed on the ecological sensitivity of the site's habitats and made familiar with current legislation, and relevant British Standards guidance on noise and vibration.

Pollution

To prevent any impacts occurring, measures including the following are recommended:

- Standard best practice construction phase pollution prevention and control measures should be applied.
- All fuel should be stored within an appropriate compound away from tree roots and appropriate capture systems should be in place for the storage of oil and fuel to prevent pollution events.
- All site activities should be conducted in a manner to minimise any risks, as far as reasonably practicable.
- Contractors should be briefed on the ecological sensitivity of the site's habitats, and on the importance of pollution prevention at this location.
- No storage of any potentially polluting substances should be allowed within or in proximity to any sensitive habitats.

Artificial Lighting

To prevent any impacts occurring, measures including the following are recommended:

- Any lighting associated with the construction site should be kept to a minimum.
- Any lighting used should be directed away from sensitive habitats including any woodland, scrub, or trees.

Visual and Physical Intrusion

To prevent any impacts occurring, measures including following are recommended:

- To protect all adjacent habitats and species from any physical intrusion, a buffer zone of at least 2 m should be left between the construction site and the habitats.
- Where required, as a precaution, additional buffer zones will be left around trees adjacent or in close proximity to the construction site to prevent any disturbance to any bats during the site clearance and construction activities.
- Contractors should be briefed on the site location and requirements with regard to preventing impacts from physical intrusion during toolbox talks.

- 'No go' areas and restricted access should be applied to sensitive habitats and made clear through signage. Sensitive habitats should be fenced off where practicable.
- Materials should be stored and managed in designated areas and no storage of equipment or materials should be allowed within or around any habitats.

Litter

To prevent any impacts occurring, measures including the following are recommended:

- Good housekeeping with regard to litter should be applied throughout the site clearance and construction phases.
- All food and drink packaging and any waste packaging containing residues or liquids, or waste materials should be stored, managed and disposed of appropriately.
- Regular litter picks should be undertaken to prevent the escape of any fugitive litter from the site and ensure that any fugitive litter does not impact habitats and species adjacent to and around the site.

Stability & Ecology

The site comprises colliery spoil which has been colonised by woodland, scrub, and grassland. The existing vegetation on the site is providing stability of the spoil slopes. Removal of the vegetation during site works will create instability of the spoil slopes, and any potential slippage could damage habitats, including any retained or created habitats, and potentially cause direct harm to any species that should be present within the site. It is recommended that the advice of a highly experienced and qualified geotechnical specialist with expertise in colliery spoil is sought to consider the risks of slippage on this site during site works, and advise on the phasing of the site, to ensure that site works are all undertaken in the correct and safest order, that any risks of any slippage are eliminated, and that any potential impacts on habitats and species are avoided. Any stabilisation works that should be required should be discussed with an ecologist and should be supervised by an ECoW to ensure that any potential impacts on any habitats and species are avoided.

Habitat Retention & Creation

Populations of any protected or priority species at the site will need to be maintained at favourable levels. It is recommended that the extent and composition of habitats that are to be retained and created should be determined from data gathered from further species-specific survey efforts, including data on numbers of species, and areas of relative abundance. In order to avoid impacts on sensitive species currently breeding within the site it is also recommended that habitat retention and creation is undertaken in advance of site works. Habitat retention and creation should reflect the current mosaic of habitats present on the site. Connectivity between the existing site habitats and the habitats within the surrounding landscape should be maintained and enhanced.

Repeat Surveys

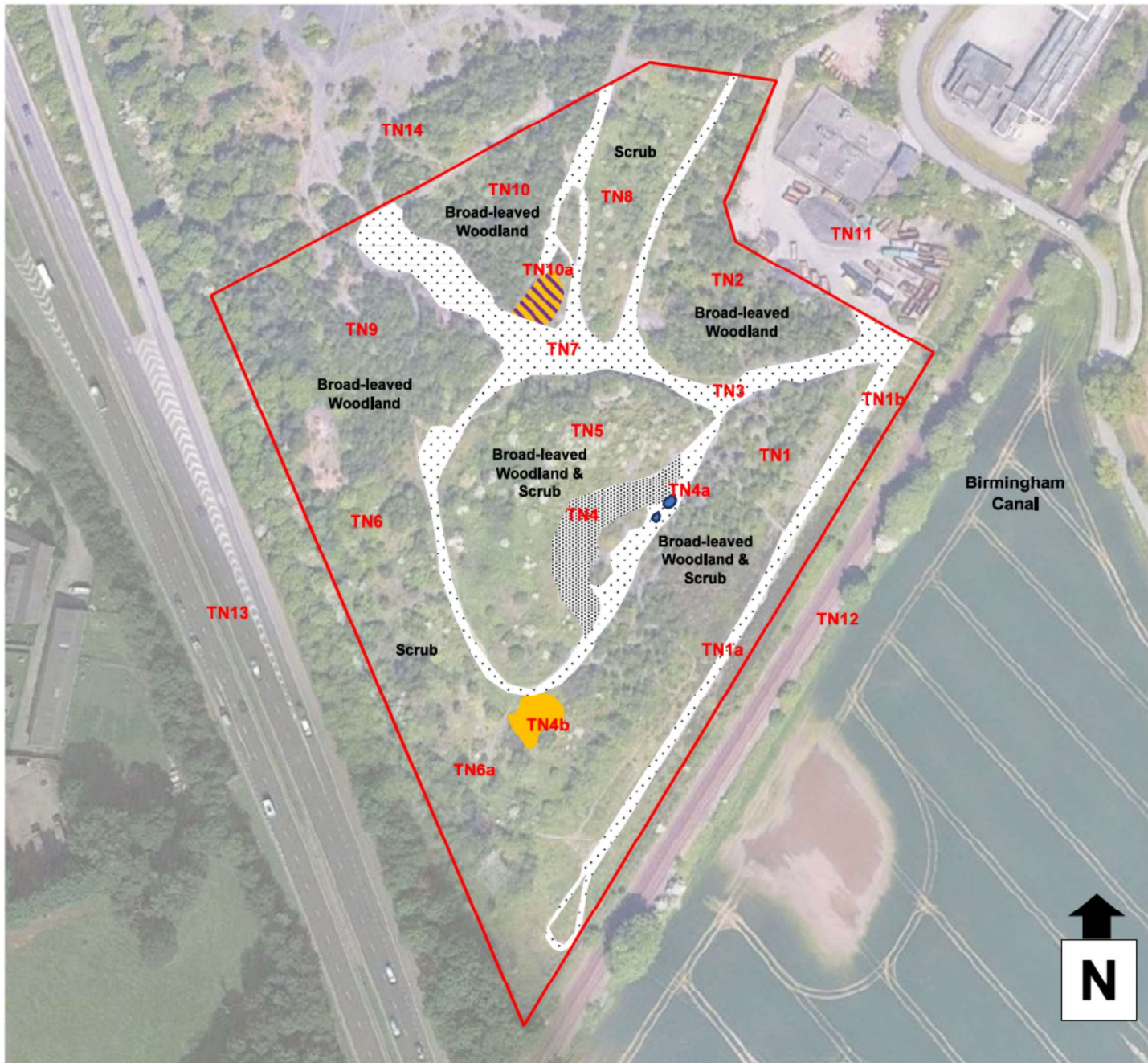
Repeat or update surveys and a re-appraisal of the site will be likely to be necessary, should there be any change to the site's baseline conditions, or any changes to the site boundary upon which this preliminary ecological appraisal, and supporting baseline survey has been based. In accordance with CIEEM guidance on the lifespan of ecological reports and surveys, repeat or update surveys will be necessary after 12 months <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

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DRAWINGS



APPENDICES

APPENDIX A

Summary of Key Legislation & Policies Relevant to the Proposals

General Planning Policy

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Future Wales: The National Plan 2040

Technical Advice Note 5 – Nature Conservation and Planning

General Legislation

Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations)

Wildlife and Countryside Act 1981 (as amended)

Protection of Badgers Act 1992

Natural Environment & Rural Communities (NERC) Act 2006

Environment (Wales) Act 2016 (Section 6 & Section 7)

Local Planning Policies

Wrexham Unitary Development Plan 1996-2011

Wrexham County Borough Council – Local Planning Guidance Note No. 32 – Biodiversity and Development

Wrexham Local Biodiversity Action Plan (LBAP-W)

Summary of Key Species-Specific Legislation Relevant to the Proposals

Badger

Badgers are protected under Appendix III of the Berne Convention on the Conservation of European Wildlife and Natural Habitats, the Wildlife and Countryside Act 1981, and the Protection of Badgers Act 1992. Both badgers and their setts are protected under the Protection of Badgers Act 1992. It is an offence to:

- take, injure, or kill a badger – or attempt these actions;
- treat a badger cruelly;
- interfere with a badger sett;
- possess or control a live badger;
- mark or ring a badger.

Badgers are Priority Species listed in the Wrexham Local Biodiversity Action Plan (LBAP-W). Developers must comply with the legal protection of badgers.

Bats

All bat species and their roosts are legally protected in the UK. All bats are listed as European Protected Species (EPS) and are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). There is also protection for bats and their roosts in England and Wales under the Wildlife & Countryside Act 1981 (as amended). It is a criminal offence if any persons:

- deliberately capture, injure, or kill a bat;
- intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat; or
- intentionally or recklessly obstruct access to a bat roost.

Several species of bats are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006), and are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016, and are Priority Species listed in the Wrexham Local Biodiversity Action Plan (LBAP-W). Developers must comply with the legal protection of bats.

Brown Hare

Brown hares are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016.

Fox

Foxes are protected under the Wildlife and Countryside Act 1981, the Protection of Animals Act 1911, the Wild Mammals (Protection) Act 1996, the Pesticides Act 1998, the Hunting Act 2004, and the Animal Welfare Act 2006. Developers must comply with the legal protection of foxes.

Hedgehog

Hedgehogs are protected under Appendix III of the Berne Convention on the Conservation of European Wildlife and Natural Habitats, the Wildlife and Countryside Act 1981 and the Wild Mammals Protection Act (1996). Hedgehogs are IUCN (2001) – Vulnerable species and Priority Species listed in the UK Biodiversity Action Plan. Hedgehogs are listed as Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and are a material consideration for Local Planning Authorities (LPAs) during the planning process. Hedgehogs are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016. Developers must comply with the legal protection of hedgehogs.

Otter

Otters are listed as European Protected Species (EPS) and are protected under the Conservation of Habitats and Species Regulations 2017 (as amended).

It is an offence to:

- deliberately kill, injure, disturb, or capture them
- damage or destroy their breeding sites and resting places - even if otters are not present
- possess, control, or transport them (alive or dead)

Under the Wildlife & Countryside Act 1981 (as amended), it is also an offence to intentionally or recklessly:

- disturb otters while they occupy a structure or place used for shelter or protection
- obstruct access to a place of shelter or protection

Otters are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006). Otters are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016. Otters are Priority Species listed in the Wrexham Local Biodiversity Action Plan (LBAP-W). Developers must comply with the legal protection of otters.

Polecat

Polecats are protected under the Wildlife and Countryside Act 1981 and under Annex 5 of the Habitats and Species Directive. Polecats are Priority Species listed in the UK Biodiversity Action Plan and Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Polecats are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016. Developers must comply with the legal protection of polecats.

Rabbit

The European Rabbit has IUCN (2001) - Near Threatened status.

Water Vole

Water voles are protected under the Wildlife and Countryside Act 1981 (as amended), it is an offence to intentionally:

- kill, injure, or take them;
- possess or control them (alive or dead).

It is also an offence to intentionally or recklessly:

- damage or destroy a structure or place used for shelter or protection;
- disturb them in a place used for shelter or protection;
- obstruct access to a place used for shelter or protection.

Water voles are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006). Water voles are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016. Developers must comply with the legal protection of water voles.

Birds

All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981.

It is an offence to:

- Intentionally kill, injure, or take any wild bird.
- Intentionally take, damage, or destroy the nest of any wild bird while it is in use or being built.
- Intentionally take or destroy the egg of any wild bird.
- Have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954.
- Have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954.
- Use traps or similar items to kill, injure or take wild birds.
- Have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations.
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.
- Penalties that can be imposed for criminal offences in respect of a single bird, nest or egg contrary to the Wildlife and Countryside Act 1981 is an unlimited fine, up to six months imprisonment or both.
- Some wild birds are also listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006). Local planning authorities must have regard for the conservation of Section 41 species as part of their planning decision.

Developers must comply with the legal protection of wild birds.

Blue Tit

Blue tits are protected under Annex II of the Bern Convention on the Conservation of European Wildlife and Natural Habitats and the Wildlife and Countryside Act 1981 and are on the Green List (subspecies. Amber List) of Birds of Conservation Concern.

Amphibians

Great crested newts (GCN) are listed as European Protected Species (EPS) and are protected under the Conservation of Habitats and Species Regulations 2017 (as amended).

It is an offence to:

- deliberately kill, injure, disturb, or capture them;
- deliberately take or destroy their eggs;
- damage or destroy their breeding sites and resting places – even if great crested newts are not present;
- possess, control, or transport them (alive or dead).

Great crested newts are also protected under the Wildlife & Countryside Act 1981 (as amended), which makes it an offence to intentionally or recklessly:

- disturb great crested newts while they occupy a structure or place used for shelter or protection;
- obstruct access to a place of shelter or protection.

Great crested newts are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006). Great crested newts are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016.

Common frogs, common toad, smooth newt, and palmate newt are protected in Britain under Schedule 5 of the Wildlife and Countryside Act (1981, as amended). They are also listed under Annex III of the Bern Convention 1979. Common toad is listed as a Species of Principal Importance for Nature Conservation in England and a Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016. Developers must comply with the legal protection of great crested newts and other amphibians.

Reptiles

Adder, grass snake, common or viviparous lizard and slow worm are protected under the Wildlife and Countryside Act 1981. It is an offence to kill or injure them. All native reptiles are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006). Some reptiles (smooth snakes, sand lizards and pool frogs) are also designated and protected as European protected species (EPS) under The Conservation of Habitats and Species Regulations 2017. Slow worms, sand lizards, common lizards, grass snakes and adders are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016. Developers must comply with the legal protection of reptiles.

Invertebrates

Brown-banded Carder Bee

Brown-banded carder bees are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016 and are also listed as a threatened bee in Wales (Olds et al., 2018).

Dingy Skipper

Dingy skippers are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016.

Grizzled Skipper

Grizzled skippers are listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016.

The Cinnabar

The Cinnabar moth is a Priority Species listed in the UK Biodiversity Action Plan. Cinnabar moths are also listed as Species of Principal Importance in Wales under Section 7 of the Environment (Wales) Act 2016.

The developer must comply with the legal protection of invertebrates.

Japanese Knotweed

Under the Wildlife and Countryside Act 1981, it is an offence to plant or cause Japanese knotweed to grow in the wild. Japanese knotweed also falls under the Environmental Protection Act 1990 (EPA 1990) which sets out the appropriate methods of removal, transport and disposal. The negligent cultivation of invasive plants such as Japanese Knotweed also falls under the Anti-social Behaviour Crime and Policing Act 2014.

APPENDIX B

Target Notes

Target Note Number	Notes
TN1	Broad-leaved Woodland & Scrub
TN1a	Bare Ground
TN1b	Scrub
TN2	Broad-leaved Woodland
TN3	Bare Ground
TN4	Ephemeral/Short Perennial
TN4a	Standing Water
TN4b	Neutral Grassland
TN5	Broad-leaved Woodland & Scrub
TN6	Scrub
TN7	Bare Ground
TN8	Scrub
TN9	Broad-leaved Woodland
TN10	Broad-leaved Woodland
TN10a	Marsh
TN11	Buildings & Hardstanding - Industrial Areas
TN12	Bare Ground - Railway
TN13	Bare Ground - Road
TN14	Broad-leaved Woodland & Scrub

APPENDIX C

Flora List

Pedunculate Oak	<i>Quercus robur</i>
Silver Birch	<i>Betula pendula</i>
Elder	<i>Sambucus nigra</i>
Hawthorn	<i>Crataegus monogyna</i>
Bramble	<i>Rubus fruticosus</i>
Dog Rose	<i>Rosa canina</i>
Common Gorse	<i>Ulex europaeus.</i>
Common Bird's-Foot Trefoil	<i>Lotus corniculatus</i>
Creeping Cinquefoil	<i>Potentilla reptans</i>
Teasel	<i>Dipsacus fullonum</i>
Toadflax	<i>Linaria vulgaris</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
White Clover	<i>Trifolium repens</i>
Foxglove	<i>Digitalis purpurea</i>
Germander Speedwell	<i>Veronica chamaedrys</i>
Oxeye Daisy	<i>Leucanthemum vulgare</i>
Hawkweeds	<i>Hieracium sp.</i>
Daisy	<i>Bellis perennis</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Bog/Peat Mosses	<i>Sphagnum spp.</i>
Yorkshire Fog	<i>Holcus lanatus</i>
Cock's-foot	<i>Dactylis glomerata</i>
Creeping Fescue	<i>Festuca rubra</i>
Rushes	<i>Juncus sp.</i>
Japanese Knotweed	<i>Fallopia japonica</i>

APPENDIX D

Fauna List

Mammals

Red Fox	<i>Vulpes vulpes</i>
Rabbit	<i>Oryctolagus cuniculus</i>

Birds

Blackbird	<i>Turdus merula</i>
Blue Tit	<i>Cyanistes caeruleus</i>
Carrion Crow	<i>Corvus corone</i>
Chiffchaff	<i>Phylloscopus collybita</i>
Goldfinch	<i>Carduelis carduelis</i>
Long-tailed Tit	<i>Aegithalos caudatus</i>
Magpie	<i>Pica pica</i>

Reptiles and Amphibians

None

Invertebrates

Brown-banded Carder Bee	<i>Bombus humilis</i>
Bumblebees	<i>Bombus</i> sp.
Cinnabar	<i>Tyria jacobaeae</i>
Hoverfly	<i>Helophilus</i> sp.
Seven-spot Ladybird	<i>Coccinella septempunctata</i>