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PRELIMINARY ECOLOGICAL APPRAISAL

At

PROW Route
Colliery Road
Rhostyllen
Wrexham
LL14 4FG

NGR: SJ 31757 48269

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Date:	13th October 2022
UES reference:	UES03850/01

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EXECUTIVE SUMMARY

United Environmental Services Ltd (UES) was commissioned by SG Estates Ltd to carry out a baseline ecological survey of a parcel of land for a proposed Public Right of Way (PROW) Route, off Colliery Road, Rhostyllen, Wrexham. A desk study and preliminary ecological appraisal (PEA) survey were undertaken on 18th and 19th August 2022, including searches using the Multi Agency Geographic Information Centre (MAGIC) and Cofnod (the Local Environmental Records Centre for North Wales).

The PEA provides an assessment of potential ecological impacts associated with the development of the land parcel. The development proposals are not yet finalised, although at the time of writing include the construction of a diverted public footpath / cycleway including the erection of a footbridge crossing Glan-yr-afon Brook.

The land parcel has an area of approximately 5.2ha – the vast majority of which comprises broadleaved woodland (plantation and semi-natural) – although the development works will be localised in nature and will largely follow the existing route of the PROW within the arable field to the north. Arable land abuts the woodland and much of the diverted PROW will follow the line of the woodland but within this arable land. Moreover, Glan-yr-afon brook flows through the woodland from west to east, and an area of species-poor semi-improved grassland pasture is located at the eastern edge of the woodland.

The results of the survey combined with the results of the desk study have highlighted the requirement for further work in relation to the following habitats and species:

- **Amphibians** – reasonable avoidance measures (RAMs) to be implemented during the construction phase of the development.

- **Badger –**RAMs to be implemented during the construction phase of the development, or further surveys if the proposed working area extends to within 30m of the identified potential sett entrances.

- **Bats** – further aerial assessments and potentially presence / absence surveys required of any trees that are to be felled to assess whether bats are using them roosting purposes.

- **Breeding birds –** site clearance, tree felling, arboricultural works and vegetation clearance are to take place outside of the breeding bird season and should not be undertaken from March to August inclusive. If not possible and works need to take place during this period, a targeted nest survey is to be undertaken immediately prior to the works by a suitably qualified ecologist or an ecological clerk of works appointed to oversee the works.

- **Hedgerows and trees–** to be retained where possible, or replaced as part of a detailed landscaping scheme. Generic issues relating to root protection areas.

- **Invasive species –** An invasive species method statement will be required to detail the control and eradication of Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*. These species should be subject to control measures and eradicated from the working area prior to the commencement of works.

- **Kingfisher** – works to be conducted outside of the nesting bird season. If not possible, a pre-commencement targeted nesting bird check is required to determine whether the tunnels are being used by nesting kingfisher. If kingfisher are observed to be nesting and the works are likely to disturb the nest, then the works will not commence until it has been confirmed by the project ecologist that the chicks have fledged. Any external lighting installed should be designed to avoid overspill onto the existing tunnel locations. Kingfisher nest boxes can also be installed along the brook to enhance the nesting opportunities on site.

- **Otters** – further survey required to determine the appropriate level of mitigation and compensation.

- **Plant communities** – a small area mapped as ancient woodland is located on site and may be directly impacted by the current proposals. Retained areas of woodland should be enhanced as part of a detailed woodland management plan in order to compensate for any losses to the woodland on site. The retained areas on site could benefit from a long-term management strategy for the removal of invasive species and gradual replacement of non-native tree species with native ones.

- **Reptiles –** reasonable avoidance measures (RAMs) to be implemented during the construction phase of the development.

- **Watercourse** – specific procedures and control measures to be implemented to ensure that there is no risk of input into the watercourse, including the retention of a buffer zone. The measures should be set out by the contractors prior to commencement and agreed with the LPA and other statutory consultees.

- **White-clawed crayfish** – eDNA analysis as a precautionary measure to inform on the presence or absence within glan-yr-afon brook.

- **Woodland** – The proposal should be designed to minimise the direct impact on woodland as much as possible. Direct impacts to the woodland are unavoidable, although the proposals should be designed to impact the smallest areas of lowest quality initially, whilst seeking to enhance remaining woodland on site. Any woodland removed will need to be replaced appropriately through a detailed landscaping and management scheme and agreed with the LPA. Retained areas of woodland will require protection throughout the construction period and external lighting should be directed away from areas of woodland that are retained as part of the development. Retained areas of woodland may also be enhanced in order to compensate for the small scale losses elsewhere.

Mitigation measures, as detailed in section 4, should be adhered to, which may in some cases negate the need for further survey work.

The development also presents an opportunity to improve the habitats on site for wildlife, such as bats and birds. The inclusion of nest boxes and bat boxes will provide suitable nesting and roosting features in the long term.

This report should be read with appendices 1 to 8, which include results of the desk study, GIS phase 1 habitat mapping, photographs of site and relevant statutory guidance.

1 INTRODUCTION

1.1 Author, surveyors, qualifications and scope of study area

This report is written by Mark Halliwell MBiol, UES Ecologist. Mark holds a level 4 Botanical Society for Britain and Ireland (BSBI) field identification skills certificate (FISC), which certifies him as competent to undertake botanical and habitat surveys up to National Vegetation Classification (NVC) level. Other surveyors include:

- Alasdair Grubb BSc ACIEEM, UES Ecologist. Alasdair holds a level 5 Botanical Society for Britain and Ireland (BSBI) field identification skills certificate (FISC), which certifies him as competent to undertake phase 1 habitat and national vegetation classification (NVC) surveys.
- Robert Mooney MSc, UES Graduate Ecologist. Robert holds a level 3 Botanical Society for Britain and Ireland (BSBI) field identification skills certificate (FISC), which certifies him as competent to undertake phase 1 habitat surveys.

The report provides an assessment of the potential ecological impacts associated with the proposed PROW Route at a parcel of land off Colliery Road, Rhostyllen, Wrexham.

The zone of influence considered within the scope of the survey includes all land within the red line boundary. Where relevant, other ecological resources, receptors and important habitats which are spatially separate from the site are considered.

1.2 Survey objectives

UES was commissioned in July 2022 to conduct a PEA of the proposed development site. This was completed in order to:

- Establish baseline conditions and determine the importance of ecological features present or potentially present within the survey area
- Identify key ecological constraints to the project
- Make recommendations for design options to avoid significant effects on important ecological resources at an early stage of development planning
- Identify potential requirement for further surveys for nationally or internationally protected species which may be present on site
- Identify potential requirement for mitigation or compensation, including measures that may be required based on further surveys

1.3 Proposed development

At this stage, the diverted PROW Route has not been finalised although an indicative plan has been provided to UES. The proposal will involve the creation of a footpath/ cycleway which will aim to link up with an existing footpath that leads under the railway bridge at the northern site boundary. At the time of writing, the proposed route will leave the woodland at the earliest opportunity such that the majority of the works will occur within the arable field to the north of the site.

1.4 Structure of the report

This report is a baseline appraisal that forms the basis for further ecological surveys and Environmental Impact Assessments (EIA) if required. In the majority of cases the preliminary ecological assessment will not provide all the ecological data required by the Local Planning Authority to determine an application, especially in the event that protected habitat or species issues are present or likely.

This report should be read with appendices 1 to 8, which include results of the desk study, GIS phase 1 habitat mapping, photographs of site and relevant statutory guidance.

2 METHODOLOGY

This PEA comprises a desk study and a field survey. The desk study is conducted in order to collate ecological information on species and / or habitats of interest that may be present. The field survey is conducted in order to assess the habitats and their importance, both on site and in the context of their wider surroundings.

2.1 Desk study

The following resources were used to inform the desk study:

- National – Using the UK government's MAGIC website, statutorily protected sites were scoped to a distance of 10km from the application site.

- Local – An ecological record search of designated sites and protected species within 2km of the proposed development site was undertaken through Cofnod (the Local Environmental Records Centre for North Wales).

2.2 Field survey

An ecological walkover survey was carried out on 18th and 19th August 2022 by Mark Halliwell, Alasdair Grubb, and Robert Mooney. The purpose of the survey was to identify, record and map dominant habitats types within the development area and highlight any further species surveys that may be required based on the quality of those habitats. When conducting the surveys particular focus was concentrated on the following species and habitat features:

- Amphibians
- Reptiles
- Badger
- Bats
- Hazel dormouse
- Birds
- Trees
- Hedgerows
- Plant communities
- Invasive species
- Otter
- Water vole
- White-clawed crayfish

The habitats were assessed by using the phase 1 habitat survey technique, which is a system for environmental audit widely used within the environmental consultancy field. The survey was undertaken in accordance with the methodology in the 'Handbook for phase 1 habitat survey - A technique for environmental audit' (JNCC, 2010) as recommended by Natural England, and in the "Guidelines for Preliminary Ecological Appraisal" (CIEEM, 2017).

The survey area encompasses all of the land within the development footprint and the land to a distance of 30m outside it where accessible. In line with recognised guidelines, ponds were also scoped to a distance of 500m (250m radius from the survey area).

The phase 1 habitat survey methodology was extended to record any signs of habitats suitable to support protected / invasive species and any incidental observations of other noteworthy species.

2.3 Survey limitations

The survey was conducted in August when many plants are readily identifiable. However, some woodland plants may not have been identifiable at this time of year. Nevertheless, sufficient vegetative identification was possible, allowing a robust assessment of habitats to be undertaken.

3 RESULTS

3.1 Desk study

A desk study was conducted for the proposed development site and surrounding area. Statutorily protected sites were scoped to a distance of 10km. Further results of the desk study can be found at Appendix 1 – Desk study.

3.1.1 Protected sites

There are three statutorily protected sites within 2km of the proposed development site:

- Sontley Marsh SSSI[1]
  Located approximately 1.8km east of the development boundary, the designation covers c.13ha of one of the best wetland examples in Clywd of the "southern mesotrophic mire". Extensive areas of alder Alnus glutinosa *carr occur, particularly adjacent to the Gefeiliau Brook and along spring-fed water courses. Much of the site is dominated by tall fen vegetation with stands of great pond-sedge* Carex riparia*, meadow-sweet* Filipendula ulmaria*, lesser pond-sedge* Carex acutiformis *and great horsetail Equisetum telmateia. Wetter areas here support reed-grass Phalaris arundinacea and hemp agrimony Eupatorium cannabinum with spindle Euonymus europaeus on drier sites.*

- Johnstown Newt Sites SAC[2]
  Located approximately 1.1km south-west of the development boundary, this site lies near to Wrexham and is composed of two post-industrial sites where coal and clay have been extracted. The population of great crested newt Triturus cristatus *is one of the largest known in Great Britain (noted at 1850 in the Standard Data Form submitted to Europe) and has been the focus of much conservation management over the last few years. Breeding sites are provided in part by a mining subsidence pool, and natural water-filled hollows on clay, whilst other ponds have been created as part of nature conservation management. Terrestrial habitat varies from marshy grassland, grazed farmland and swamp through to scrub and broad-leaved woodland. Good populations of the widespread amphibian species are also present.*

- Stryt Las a'r Hafod SSSI
  Located approximately 1.1km south-west of the development boundary, the designation covers c 69ha and is of special interest for its amphibian population. Of particular interest in the population of great crested newt. Torch night counts undertaken at the site have revealed over 250 adult and sub-adult animals on several occasions. They also support significant populations of the commoner amphibian species notably smooth newt Lissotriton vulgaris*, palmate newt* L. helveticus*, common frog* Rana temporaria*, and common toad* Bufo bufo*.*

The proposed development site lies within a SSSI Impact Risk Zone (IRZ) within which Natural England do not request that they are consulted on developments of this type and size.

There are also six non-statutorily protected sites within 2km of the proposed development site:

- Big Wood Wildlife Site

[1] Site of Special Scientific Interest
[2] Special Area of Conservation

The wood along the River Clywedog is a mixture of conifer plantation, beech Fagus sylvatica *plantation and patches of semi-natural broad-leaved woodland. The broad-leaved canopy is dominated by sycamore* Acer pseudoplatanus *and beech and there is a variable ground flora, with abundant brambles* Rubus fruticosus agg. *and frequent ferns. Holly* Ilex aquifolium *is prominent in the understorey, but rhododendron* Rhododendron ponticum *is abundant. Brittle bladder fern* Crstopteris fragilis *is present. The woodland is undergoing management and many conifer trees have been felled.*

- Legacy Substation Wildlife Site
  This site is an electricity substation surrounded by embankment with semi-improved grasslands and scrub. Bee orchid Ophrys apifera*, yellow-wort* Blackstonia perfoliata *and common centuary* Centaurium erythraea *occur.*

- Crematorium Wildlife Site
  The two hay meadows in front of the crematorium are herb-rich semi-improved neutral grassland. The field on the north side of the drive is dominated by ribwort plantain Plantago lanceolata*, sweet vernal grass* Anthoxanthum odoratum *and lesser trefoil* Trifolium dubium*, with frequent cats' ear* Hypochaeris radicata *and yellow rattle* Rhinanthus minor*. The field on the south side of the drive has an abundance of sweet vernal grass, common bent* Agrostis capillaris *and crested dog's tail* Cynosurus cristatus*. Pignut* Conopodium majus*, yellow oat grass* Trisetum flavescens *and black knapweed* Centaurea nigra *are frequent. Behind the crematorium there is a broadleaved woodland with many exotic trees and shrubs and patches of parkland. There are two ponds with fringed water lily* Nymphoides peltatum*, great reedmace* Typha latifolia*, water plantain* Alisma plantago-aquatica *and reed sweet grass* Glyceria maxima*. Royal fern* Osmunda regalis *and ostrich fern* Matteuccia struthiopteris *also occur.*

- Erddig Estate Wildlife Site
  National Trust estate with woodlands, semi-improved neutral grasslands and marshes. The woodlands have a lot of planted beech but there is also much oak Quercus sp.*, sycamore and ash* Fraxinus excelsior*. Hafod and Lewis Wood have areas of wet alder woodland. The field layer under the latter canopy is good; great horsetail, hemlock water-dropwort* Oenanthe crocata*, meadowsweet, hemp-agrimony and marsh marigold* Caltha palustris *are prevalent. Species found within the drier woods include wood millet* Milium effusum*, wood melick* Melica uniflora*, wood-sorrel* Oxalis acetosella *and giant fescue* Festuca arundinacea*. Most of the pasture is improved but several areas are managed for wildlife. The amount of mature trees in the park is exceptional and these have correspondingly excellent insect communities with 12 notable species and 1 red data species discovered.*

- Gefeiliau Brook Wildlife Site
  A series of woods, marshes and neutral grasslands along the Gefeiliau Brook. The northern woods are wet with alder dominant canopies with occasional ash, sycamore and white willow Salix alba*. Underneath the field layer has such species as great horsetail, unbranched bur-reed* Sparganium emersum*, marsh hawk's-beard* Crepis paludosa*, fen bedstraw* Galium uliginosum*, ragged robin* Silene flos-cuculi *and meadowsweet. The southern woods are on dryer banks and have sycamore/ash/oak canopies, with good field layer diversity. Species include sanicle* Sanicula europaea*, woodruff* Galium odoratum*, goldenrod* Solidago virgaurea *and wood sedge* Carex sylvatica*. The marshes are excellent. Narrow buckler fern* Dryopteris carthusiana*, greater bird's-foot trefoil* Lotus pedunculatus*, lady fern* Athryium felix-femina *,and marsh ragwort* Jacobaea aquatica *are some of the species to be found.*

- Nant Mill – Grasslands Wildlife Site
  No description available.

There are fifteen statutorily protected sites (designated for ecological reasons) within 2 – 10km of site:

- Afon Dyfrdwy (River Dee) SSSI
- Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains SAC[3]
- Cloy Brook Pastures SSSI
- Gatewen Marsh SSSI
- Ifton Meadows LNR[4]
- Llandegla Moor SSSI
- Marford Quarry SSSI
- Midland Meres and Mosses Phase 2 Ramsar
- Nant-y-Belan and Prynela Woods SSSI
- River Dee (England) SSSI
- River Dee and Bala Lake (England) SAC
- River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC
- Ruabon / Llantysilio Mountains and Minera SSSI
- Shell Brook Pastures SSSI
- Vicarage Moss SSSI

3.1.2 Protected species

The following records of protected or otherwise notable species were highlighted by the environmental records search:

- Amphibians: dozens of records of GCN were recorded within 2km of the proposed development site. The closest record returned was located approximately 260m south-west of the development boundary (approximately 230m south of the woodland surveyed) within an unmapped pond and includes a record of three adult GCN from 2019. The next closest record is located approximately 450m south-east of the development boundary within the Erddig Estate Wildlife Site from 1984. Numerous other records, including from 2022, were returned from the Erddig Estate Wildlife Site. Dozens of other amphibian records (smooth and palmate newt, common frog and common toad) were also returned from the record search, the closest of which is located 300m north-west of the site from within the suburban area of Rhostyllen.

- Badgers: seventy records of badger *Meles meles* were returned from within 2km of the proposed development site, the closest of which comprises a deceased erythristic individual on Hafod Road approximately 30m south from the site boundary. The next closest record comprises a cluster of sett records dating from 1998 which are located approximately 250m west of the site boundary near Bersham Tip and adjacent to glan-yr-afon brook.

- Bats: nearly 500 bat records were returned from within 2km of the development boundary consisting of brown-long eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Brandt's *Myotis brandtii*, Daubenton's *Myotis daubentonii*, lesser horseshoe *Rhinolophus hipposideros*, Natterer's *Myotis nattereri*, noctule *Nyctalus noctula*, and whiskered *Myotis mystacinus*. The closest record comprises a single brown long-eared bat from

[3] Special Area of Conservation
[4] Local Nature Reserve

1989 located 200m south of the development boundary. The closest confirmed roost is located approximately 500m south-east of the development boundary and consists of a pipistrelle species roost from 1997 of 17 bats.

- Birds: various species, including several NERC section 41 and Wildlife and Countryside Act 1981 Schedule 1 species.

- Hazel dormouse: no records of hazel dormouse *Muscardinus avellanarius* were returned from within 2km of the proposed development site.

- Hedgehog: thirty-one records of hedgehog *Erinaceus europaeus* were returned from within 2km of the proposed development site. The closest record is located 200m south-west of the development boundary and comprises a live sighting of an individual.

- Otter: nineteen records of otter *Lutra lutra* was returned from within 2km of the proposed development site. The closest record is adjacent to eastern site boundary and comprises field signs under a bridge at Hafod Road on both banks. Another record is located approximately 180m west of the development boundary and comprises spraints adjacent to glan-yr-afon brook.

- Reptiles: thirty-one reptile records – the majority of which are grass snake *Natrix Helvetica* – of grass snake, adder *Vipera berus*, slow worm *Anguis fragilis*, and common lizard *Zootoca vivipara* are located within 2km of the proposed development site. The closest records are grass snake from within Hafod Wood located approximately 500m south-west of the development boundary. The closest non-grass snake record comprises two adder records from 1992 and 2011 from within Felin Puleston which flanks the river clywedog and leads into Erddig Country Park.

- Water vole: just two water vole *Arvicola amphibius* records were returned from within 2km of the proposed development site. The closest is from the river Clywedog located 420m east of the site boundary from 1981, and the second is from 1.4km south of the development boundary from 1998/1999.

- White clawed-crayfish: no records of white-clawed crayfish *Austropotamobius pallipes* were returned from within 2km of the proposed development site.

3.2 Baseline conditions – Habitats

The results of the PEA are also shown on the accompanying map at Appendix 2 – Phase 1 habitat plan. Habitats are colour-coded in accordance with the phase 1 standard. A full botanical species list for each habitat is provided at Appendix 6.

Apart from the suburban area of Rhostyllen located 250m west of the site boundary, the local area predominantly consists of arable and pastoral fields intersected by hedgerows with blocks of woodland, and brooks and streams present throughout. The following principal habitat types were characterised on site:

- A1.1.1 Broad-leaved, semi-natural woodland
- A1.1.2 Broad-leaved woodland - plantation
- A1.3.2 Mixed woodland - plantation

- A2.1 Dense scrub
- B6 Species-poor, semi-improved grassland
- C3.1 Tall ruderal
- G2 Running water
- J1.1 Arable
- J2.3.1 Intact species-rich hedge with trees
- J2.4 Fence
- J6 Other habitat – Stand of Japanese knotweed and Himalayan balsam

3.2.1 A1.1.1 Broad-leaved, semi-natural woodland

The majority of the site comprises broad-leaved, semi-natural woodland which is relatively unmanaged (see Appendix 5 – Photographs, Photo 3 – 5). The woodland itself flanks the glan-yr-afon brook and extends westwards beyond the site boundary still following the line of the brook. The woodland tapers to a point near the south-eastern boundary before it ends as it is bisected by Hafod Road. The canopy largely comprises mature beech, ash, sycamore, and pedunculate oak although several other mature tree species are present. Towards the north-western edge of the woodland it transitions into plantation woodland (both mixed and broadleaved). The understorey comprises holly, hawthorn, elder *Sambucus nigra*, and hazel *Corylus avellana*, which is relatively dense at the eastern portion (Photo 4) of the woodland but then thins out and becomes sparser within the western portion (Photo 5). The field layer is generally sparse as the canopy and understorey overshade much of the woodland, although several ferns (broad buckler-fern *Dryopteris dilatata*, hard shield-fern *Polystichum aculeatum*, Hart's-tongue *Phyllitis scolopendrium* etc.) and woodland species (dog's mercury *Mercurialis perennis*, enchanter's nightshade *Circaea lutetiana*, ramson's *Allium ursinum*, opposite-leaved golden-saxifrage *Chrysosplenium oppositifolium*, wood speedwell *Vernoica montana*, wood dock *Rumex sanguineus* etc.) are present.

A small portion of the broad-leaved semi-natural woodland (approximately 0.3ha) was mapped as Ancient Semi Natural Woodland within the biological records search conducted through Cofnod. It is not apparent why only this area of woodland has been mapped as such. After a review of tithe maps of the local area (Map of the township of Eclusham Below in the parish of Wrexham and County of Denbigh, dated 1839), no area of the woodland is visible within the development boundary. All land that overlaps with the modern-day site boundary are noted as belonging to the following land uses; pasture, arable, meadow, pasture or hay. The nearest area with 'wood' as the noted land use is Hafod Wood located approximately 400m south-east of the development boundary. The area containing the Ancient Semi Natural Woodland, like other areas in the western portion of the woodland, has a sparser understorey than elsewhere in the broadleaved semi-natural woodland, although the canopy species were not noted as differing significantly.

Several trees are present within the woodland that contain features potentially suitable for roosting bats. The woodland itself, generally following the route of glan-yr-afon brook, is also negatively impacted by invasive species. Himalayan balsam and Japanese knotweed outcompete much of the flora adjacent to the riverbanks and in some cases forms continuous stands (see Appendix 3 – Extent of invasive non-native species).

3.2.2 A1.1.2 Broad-leaved woodland – plantation

Towards the western edge of the site there is plantation woodland comprising ash trees. Here the understorey is sparse and much of the ground flora is outcompeted by ivy *Hedera helix* and bramble (Photo 6).

3.2.3 A1.3.2 Mixed woodland – plantation

At the north-western corner of the site there is an area of mixed plantation woodland which contains large amounts of Scots pine *Pinus sylvestris* and larch species *Larix* sp., amongst Norway maple *Acer platanoides*, wild cherry *Prunus avium*, and ash. The understorey and ground flora are also relatively sparse here (Photo 7).

3.2.4 A2.1 Dense scrub

There is an area of dense scrub which is situated adjacent to the southern boundary at the eastern end of the site flanking glan-yr-afon brook. The area predominantly comprises blackthorn *Prunus spinosa*.

3.2.5 B6 Species-poor, semi-improved grassland

There is a small area of species-poor, semi-improved grassland (c 0.9ha) located adjacent to the eastern edge of the woodland and at the eastern site boundary (Photo 8). The grassland had recently been grazed by cows and sheep prior to the survey so it had a short sward but with an area near to the bottom of the field that was more disturbed due to higher levels of poaching and damper ground conditions (Target Note 5). The sward predominantly comprised competitive grass species such as cock's foot *Dactylis glomerata* and perennial ryegrass *Lolium perenne* with a low species diversity. However, a higher diversity of forbs are present within the southern portion of the grassland where the level of disturbance increases.

3.2.6 C3.1 Tall ruderal

A strip of tall ruderal vegetation is present between the woodland edge and the arable field located along the northern site boundary (Photo 1). This area represents a portion of the arable field that approximately follows the existing PROW and is therefore not ploughed. Species present are a mixture of ruderal species (thistles, docks, nettles etc.) and woodland flora that is still present beneath the canopy of the adjacent woodland. As with TN5, the area is relatively poached as the arable field is also grazed by cattle following the harvest of the crop. Species such as redshank *Persicaria maculosa* and marsh cudweed *Gnaphalium uliginosum* are present where the ground is compacted and wet as a result of the poached ground.

3.2.7 G2 Running water

Glan-yr-afon brook runs through the woodland west to east and continues beyond the site boundary in both directions (Photo 9 and 10). The brook is heavily shaded by the above canopy and lacks any aquatic vegetation. The brook has a substrate of stones and gravel, and it is generally very shallow (less than 20cm deep), although there are deeper pools up to 1m in depth which have a silted/ muddy base. The margins of the brook are heavily impacted by Himalayan balsam and Japanese knotweed, particularly towards the western portion of the

woodland. Elsewhere the margins of the bank predominantly consist of flora found throughout the woodland such as overhanging understorey species, ferns, bramble and ivy.

Two otter spraints were located within the central portion of the ditch on a brick wall that has historically degraded and fallen over (TN2). Furthermore, near the north-western portion of the brook the banks become very steep and sandy. A total of three kingfisher *Alcedo atthis* tunnels have been excavated within this bank all within 2m of each other. There is evidence that these tunnels have been used recently due to the presence of droppings.

3.2.8 J1.1 Arable

An arable field that is located to the north of the woodland that had recently been harvested but comprised a crop of wheat *Triticum* sp. (Photo 1 and 2). The field was used for grazing cattle at the time of this survey.

3.2.9 J2.3.1 Intact species-rich hedge with trees

There is a single hedge on site, which is located at the eastern site boundary adjacent to Hafod Road (Photo 11). The hedge is managed and approximately 2m tall by 2m wide. It contains five mature pedunculate oaks trees along its length of approximately 140m. The stile of the existing PROW crosses the hedgerow in addition to a field gate, otherwise the hedge is intact and forms a complete barrier along the eastern edge of the site.

3.2.10 J2.4 Fence

Post and rail and post and wire fencing surround the woodland and the species-poor semi-improved grassland at the eastern edge of the site, all of which is in good condition.

3.2.11 J6 Other habitat – Stand of Japanese knotweed and Himalayan balsam

As described in Section 3.2.7, the impact of invasive species becomes more acute towards the western edge of the woodland and in some areas forms a complete stand of Japanese knotweed and Himalayan balsam (see Photo 12 and Appendix 3 for extent at the time of this survey).

3.3 Baseline conditions – Protected species or resources

As part of the PEA, specific observations of wildlife were also recorded. Wildlife observations focused on protected species, invasive species or species of conservation concern. Habitats with potential to support protected species were noted with a view to follow up surveys if required.

3.3.1 Amphibians

Great crested newts have been recorded on numerous occasions in the local area.

There is a single pond which is located approximately 230m from the woodland edge at its closest point, although it is approximately 300m away from the proposed working area at its closest point. This pond could not be accessed during the walkover survey as it is on third party land, but there is a record from 2019 which refers to a negative eDNA result but also with the presence of three adult GCN. The pond is relatively well-connected to the site by hedgerows, tree lines and arable fields.

The terrestrial habitats within the development footprint are broadly suitable for GCNs. The woodland provides sheltered commuting and foraging opportunities, whilst there are also hibernation opportunities in the exposed tree root systems and associated with fallen trees. Glan-yr-afon brook is unsuitable for use by GCNs due to its high flow rate and lack of aquatic or emergent vegetation.

The following rapid risk assessment tool has been developed by Natural England in order to establish whether it is necessary to apply for a licence. It assumes that all ponds are suitable GCN breeding ponds, which in some cases will not be the case. The rapid risk assessment is a general tool and does not take into account the suitability of the habitats on site.

Component	**Likely effect** **(select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)**	**Notional offence probability score**
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	0.5 – 1 ha lost or damaged	0.03
Individual great crested newts	No effect	0
	Maximum:	0.03
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

"Green: offence highly unlikely" indicates that the development activities are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed. Therefore, no licence would be required. However, bearing in mind that this is a generic assessment, you should carefully examine your specific plans to ensure this is a sound conclusion, and take precautions (see Non-licensed avoidance measures tool) to avoid offences if appropriate. It is likely that any residual offences would have negligible impact on conservation status, and enforcement of such breaches is unlikely to be in the public interest.

The rapid risk assessment has resulted in 'Green: offence highly unlikely" based on the assumption that all nearby ponds are suitable to support GCN. The primary reason for the result seen is that the proposed working area is relatively small and will result in low amounts of destruction or damage to suitable habitats, and that the working area is located more than 250m from the nearest pond.

3.3.2 Reptiles

There are a number of reptile records from within the local area, including slow worm, grass snake, adder, and common lizard. However, the majority of records comprise grass snake and

most reptile records are confined to Erddig Country Park, Hafod Wood, and statutory protected sites such as Johnston Newt Sites SAC, and Sontley Marsh SSSI. The closest reptile record is located within Hafod Wood and comprises adult grass snakes located approximately 500m south-west of the development boundary.

The woodland edge and hedgerow habitats are broadly suitable for slow-worm and common lizard. The field margins, where the sward has grown slightly longer, could also be used by commuting and foraging common reptile species. The woodland itself is generally of low suitability for reptiles as it is heavily shaded and therefore lacks basking opportunities. Glan-yr-afon brook is also considered unsuitable to support breeding amphibians so foraging opportunities are likely limited for grass snake.

3.3.3 Badger

A total of three potential badger setts were noted throughout the woodland (TN3). Each potential sett comprised just an individual entrance and the two most southerly entrances appeared not to have been used recently as they were relatively overgrown with vegetation. A latrine was located next to the southern-most sett (TN4, Photo 14 and 15), however, and the potential sett entrance located at the western site boundary had a guard hair outside (Photo 13). All potential setts are located more than 30m away from the proposed working area.

The woodland presents good sett-building opportunities for badgers. Furthermore, the location of the woodland near to arable fields and hedgerows means that it is well-connected to good foraging opportunities.

3.3.4 Bats

There are no buildings on site which could be used by roosting bats. A stone railway bridge is located at the western site boundary, which was not subject to a bat scoping survey although it may contain crevices suitable for roosting bats (Photo 16). However, the bridge this will not be directly impacted by the current proposals.

There are many mature trees throughout the woodland and potential roosting features (PRFs) were noted in mature and semi-mature trees (Photo 17 and 18). It is not yet known which trees, if any, will be lost to facilitate the development.

3.3.5 Hazel dormouse

The woodland is broadly suitable for dormice. The woodland does have a dense canopy, although the understorey is generally sparse and lacking substantial amounts of key species such as hazel and honeysuckle. Furthermore, there are no records of hazel dormice within the local area and they have a limited distribution nationally. It is considered that they are not present on site or within the local area.

3.3.6 Birds

Although a targeted bird survey was not conducted during the site visit, the following bird species were recorded whilst on site: blue tit *Cyanistes caeruleus*, great tit *Parus major*,

pheasant *Phasianus colchicus*, woodpigeon *Columba palumbus*, robin *Erithacus rubecula*, goldfinch *Carduelis carduelis*, blackbird *Turdus merula*, coal tit *Periparus ater*, magpie *Pica pica*, wren *Troglodytes troglodytes*, jay *Garrulus glandularius*, bullfinch *Pyrrhula pyrrhula*, treecreeper *Certhia familiaris*, and buzzard *Buteo buteo*.

As discussed in section 3.2.7, kingfisher tunnels, with evidence suggesting they have been used recently, were noted within the steep sandy bank of Glan-yr-afon brook near the northern end of the site (TN1 and Photo 19).

Areas of woodland, hedgerows, trees and dense scrub all provide suitable nesting opportunities for breeding birds in the summer.

3.3.7 Trees

Trees on site may be protected by a Tree Preservation Order (TPO), for which a check has not been undertaken.

3.3.8 Hedgerows

There is a single hedgerow on site which is considered to be species-rich. It is possible that this hedge may qualify as “important” for ecological reasons under the Hedgerow Regulations, and it may also qualify on historical grounds. At present only a small portion of the hedgerow (>5m) is due to be directly impacted in order to increase the existing stile size to enable cyclists to pass through the PROW.

3.3.9 Plant communities

A small area of the broadleaved semi-natural woodland at the north-western corner of the site was mapped as Ancient Semi Natural Woodland within the record search returned from Cofnod. It is not clear why only this area of woodland has been noted as ancient woodland.

3.3.10 Invasive species

Himalayan balsam and Japanese knotweed are present throughout the woodland along the length of glan-yr-afon brook. They are typically absent from beyond 10m of the brooks’ edge, although in some areas they form continuous stands that outcompete all other woodland flora.

3.3.11 Otter

Glan-yr-afon brook is broadly suitable for commuting and foraging otter. Two otter spraints were found along the length of the brook near to a redbrick wall that has fallen into the water (Photo 20 and 21). No other evidence of otter, such as holts or couches were identified despite a thorough search along the length of the brook.

3.3.12 Water vole

Glan-yr-afon brook is broadly unsuitable for water vole due to the relatively shallow depths and high flow rate . Furthermore, the margins of the brook are heavily shaded and therefore lack the availability of grasses, sedges, rushes and forbs on which water vole feed. There was no evidence of latrines, runs or burrows along the length of the brook, and the closest water vole record is from 1981 and located approximately 400m east in the River Clywedog. Water vole are not considered to be on site or within the local area.

3.3.13 White-clawed crayfish

There are no records of white-clawed crayfish *Austropotamobius pallipes* in the local area. However, the brook presents broadly suitable habitat due to the presence of rocky substrates, shallow and deeper pools. However, they have a limited distribution and are not known to be present locally.

4 EVALUATION AND RECOMMENDATIONS

This section provides a brief assessment of the likely impacts associated with the proposed development on the receptors identified during the walkover survey and desk study. It also includes any mitigation and compensation measures which may be required for the proposed development to proceed.

4.1 Habitats

4.1.1 Designated sites

The sites identified during the desk study were cross-referenced with the survey area relevant to this report. The closest statutorily protected site is Stryt Las a'r Hafod SSSI and Johnston Newt Sites SAC, which lie approximately 1.1km south of the proposed development site.

The closest non-statutorily protected site is Erddig Estate Wildlife Site, which is located approximately 280m east of the development boundary at its closest point.

Given the distances from the site and the scale of development, which has a very small and restricted footprint, it is considered extremely unlikely that the proposed development will have any direct or indirect impact on any local statutorily or non-statutorily protected sites.

4.1.2 Hedgerows and trees

There is a single hedgerow on site, which is a managed species-rich hedgerow with a total of five mature oak trees within its length adjacent to the site.

Construction impacts

Construction activities too close to the root protection areas (RPAs) of the hedgerows and mature trees could cause permanent damage. Site clearance and setting out may involve the direct loss of a small portion of the hedgerow in order to create an access point for cyclists. This may result in damage to any trees which are to be retained.

Mitigation

Root protection areas (RPAs) should be implemented and adhered to around the hedgerow and any trees which are to be retained. These areas should be adequately protected by appropriately designed protective barriers and ground protection throughout the entire development process.

Compensation

If any lengths of hedgerow are to be removed, they should be replaced accordingly as part of a detailed landscaping scheme, with only native species to be planted.

Operational impacts

No operational impacts are envisaged.

4.1.3 Woodland

The majority of the site comprises broadleaved semi-natural woodland, and broadleaved and mixed plantation woodland. However, the majority of the development works will take place outside of the woodland, and those works within are restricted to relatively small areas. The current proposals will directly impact a small area of the woodland that was mapped as Ancient Semi Natural Woodland within the records search returned from Cofnod. This area is located at the north-western corner of the site and follows a thin stretch of woodland along its northern edge.

Construction impacts

Small and localised areas of the woodland could be permanently damaged, altered and / or disturbed by the construction activities. At present, this includes an area of Ancient Semi Natural Woodland.

Mitigation

The proposals provided to UES at the time of writing have been designed to minimise the direct impact on the woodland on site. As such, the proposed PROW route leads out of the woodland at the earliest opportunity such that the majority of the route is situated within the nearby arable field. However, this will result in direct impacts to areas of broadleaved woodland mapped as Ancient Semi Natural Woodland. This area is not considered to differ significantly from the surrounding broadleaved semi-natural woodland, and it is UES' opinion that the direct impacts on areas of mapped Ancient Semi Natural Woodland are significantly lower than the alternative route, which would result in larger areas of the woodland being impacted.

Compensation for the loss of woodland could be compensated for in part through the enhancement of retained areas of lower quality woodland. For instance, the mixed and broad-leaved and plantation woodland could benefit from a long-term management strategy for the removal of larch, Norway maple, and the thinning of sycamore regeneration with native tree and shrub species. This would serve to enhance the structure of the woodland and create an understorey with the potential to develop into a woodland community of higher biodiversity value and greater longevity than the existing woodland.

Retained woodland should be adequately protected during the construction phase of the development. Any retained areas should be fenced off to protect the root systems of the trees within, and no contractors should access the woodland unless authorised to do so or for reasons related to working within the woodland (e.g. protecting it from construction activities or enhancement works). No materials should be stored in the woodland and no temporary or permanent external lighting should be directed onto the woodland.

Compensation

If any areas of woodland on site are to be removed, it should be compensated through the enhancement of retained areas of woodland or replaced two-fold in terms of area in an appropriate location. A detailed woodland management plan should be prepared for the newly created / enhanced woodland and agreed with the local planning authority.

Operational impacts

The current proposals will result in the rerouting of an existing PROW. This in itself is not anticipated to result in an increase of disturbance within the woodland through recreational activities or dog walking, although a nearby housing development may result in higher traffic along the PROW. The PROW within the woodland should be fenced off from the surrounding woodland to discourage access from members of the public to the remaining areas.

4.1.4 Watercourse

Glan-yr-afon brook flows through the woodland and it is proposed that the PROW will cross the brook facilitated by the construction of a wooden footbridge.

Construction impacts

Construction works adjacent to Glan-yr-afon brook could result in disturbance and / or pollution to the watercourse.

Mitigation

The works within proximity of the watercourse are not considered to have a high risk of dispersing dust and other pollutants, but specific procedures and control measures will need to be implemented to ensure that there is no risk of input into the watercourse. These measures should be set out by the contractors prior to the commencement of works and will need to be agreed with the Local Planning Authority (LPA) and other statutory consultees. These measures should conform to best practice guidance and include the cleaning of all machinery and equipment before use on site to prevent contamination of the watercourse with foreign abiotic and biotic materials.

Operational impacts

No operational impacts are envisaged.

4.2 Species

4.2.1 Amphibians

There are no ponds within 250m of the working area, although a single unmapped pond is present approximately 230m south of the woodland surveyed, and this pond contains recent records of a small population of breeding GCN. The woodland provides suitable terrestrial habitat for commuting, sheltering and foraging newts. However, the majority of the proposed works will occur within the arable field to the north of the woodland which is broadly unsuitable for terrestrial amphibians. Moreover, Glan-yr-afon divides the woodland in two the majority of the proposed working area being the other side of the brook to the nearest pond. Given that the working area is located more than 250m from the nearest breeding pond, and the Glan-yr-afon brook may discourage newts naturally from entering the working area, the presence of GCN within the working area is considered unlikely. However, the works should still be completed under RAMs to ensure that other common amphibian species are not affected by the works. This is supported by the rapid risk assessment tool presented in section 3.3.1 of this report, and Table 6.5 within the Great crested newt mitigation guidelines (English Nature, 2001) which states that impacts to terrestrial habitat beyond 250m of a breeding pond is of a low impact.

Construction impacts

Potential impacts include direct harm, injury and / or death to individuals, although these are considered extremely unlikely.

Mitigation

The following RAMs should be implemented on site during the construction phase of the development:

- The project ecologist will deliver a toolbox talk to the contractors responsible for the destructive works immediately prior to commencement. The talk will cover newt ecology, newts and the law, and what to do if newts are found during the works. The talk will be extended to also include other potential ecological receptors as necessary (e.g. reptiles, badger, otter and kingfisher).

- The working area should be cleared of vegetation in a phased manor in order to give any amphibians present time to move off site of their own accord. The mown / cleared area will then be maintained with a short sward until the works on site have been completed.

- Any potential hibernacula will be removed from the working area by a suitably experienced ecologist, and placed in a suitable area close to site. Hibernacula could include piles of rubble, bricks, loose soil, debris, fallen trees, brash piles etc.

- No excavations are to be left open overnight. If this is not feasible a plank should be left within the excavation at a 45 degree angle to allow amphibians to escape. Any open excavations should be checked for amphibians in the morning prior to start of works on site.

- Materials will be stored on pallets off the ground in order to reduce the risk of amphibians sheltering underneath them.

- The hedgerows and trees along the site boundaries should remain, where feasible, to continue to provide shelter and connectivity across site for amphibians and other fauna.

- UES will remain on-call throughout the development and if any newts are encountered, work on site is to stop immediately and ecological advice is to be sought. UES can be contacted directly on **01565 757788**.

Operational impacts

No operational impacts are envisaged.

4.2.2 Reptiles

Although the surrounding arable fields are managed relatively intensively, the woodland edge, field margins and hedgerows are relatively suitable for foraging, sheltering and commuting common reptile species. However, the woodland itself is broadly unsuitable for reptiles due to a high amount of shading (and consequent lack of basking opportunities), and lack of foraging opportunities. Furthermore, the habitats impact by the current proposals are temporary and

largely restricted to the arable field which is broadly unsuitable for reptiles as it is relatively intensively farmed with a mixture of crop-growing and subsequent grazing by sheep and cattle. As with amphibians, it is considered that RAMs may be implemented to reduce the impact of the development to negligible levels, given the small scale and impact of the works and the unsuitability of the habitat within which the majority of the works will occur.

Construction impacts

If reptiles are present during the construction activities, they could be directly harmed. Owing to the small working area and the relatively short period in which construction will occur, the impacts of construction are considered to be temporary.

Mitigation

The RAMs included in Section 4.2.1 will also serve to protected reptiles throughout the construction phase of the development.

Operational impacts

No operational impacts are envisaged.

4.2.3 Badger

There are three potential badger setts located within the woodland, each comprising a single entrance hole. A latrine and a guard hair were found within close proximity of two of the sett entrances, although construction activities will not occur within 30m of the potential badger setts, and no other sett entrances were found despite an extensive search.

Construction impacts

Construction activities without mitigation could result in direct harm to badgers, including disturbance. There is considered to be no risk of sett collapse or abandonment given the distance from the working area.

Mitigation

A 30m buffer zone is to be enforced surrounding the potential sett entrances in order to minimise disturbance to the badgers. Furthermore, the works should also be completed under RAMs since the badgers are utilising the site for commuting, and possibly foraging purposes. The RAMs included in Section 4.2.1 will also serve to protected badgers throughout the construction phase of the development.

If the proposals change to involve works within 30m of the potential setts, then a badger activity survey will be required to inform the necessary level of mitigation.

A pre-commencement inspection for evidence of new badger setts is required in order to ascertain whether any new setts within 30m of the working area are likely to be impacted.

Operational impacts

No operational impacts are envisaged.

4.2.4 Bats

Trees within the woodland have the potential to support roosting bats and numerous potential roosting features were identified during the PEA. The stone railway bridge may also contain PRFs, although it is not due to be impacted by the current proposals.

Construction impacts

If bats are roosting within the trees that are due to be felled, they are at risk of direct harm and disturbance and the roosts will be lost permanently. Inappropriate landscaping could also result in the severing of commuting corridors used by bats as well as the loss of foraging habitats.

Mitigation

Aerial tree inspections should be conducted of any trees to be removed or otherwise altered. These inspections can be undertaken at any time of year. If any potential roosting features are found to still be suitable following the inspections, bat presence / absence surveys may be required (May to September inclusive) and additional mitigation or compensation measures. It should be noted that these further measures may include an application for a European Protected Species (EPS) mitigation licence from Natural Resources Wales (NRW).

Enhancements
The provision of bat boxes as part of the development proposals would increase the roosting opportunities for bats on site but would also increase the ecological value of the site. At the time of writing this report no detailed plans are available, but bat boxes that could be used on site include:

- Schwegler 1FF box (affixed to trees or buildings)
- Schwegler 2F box (affixed to trees or buildings)
- Schwegler 1FW hibernation box (affixed to trees)

Bat boxes affixed to trees should be fitted at a height of between 5 and 6m metres on a southerly aspect (when not shaded by other trees anyway).

No detailed lighting proposals are as yet available to UES, however care must be taken when installing any new lighting to ensure that light spillage onto the bat boxes is minimised. This may require the use of cowling or relocation of the bat box or lighting (see Appendix 7 – External lighting guidance).

It should be noted that once bat inhabits a bat box, they may only be disturbed by a licensed bat worker.

Operational impacts

To be assessed following the further surveys.

4.2.5 Birds

There are a number of habitats, such as woodland, hedgerows, dense scrub and mature trees which could support breeding birds.

Construction impacts

Tree felling, arboricultural works and vegetation removal could result in the direct loss of nests, any individuals within the nests and of available nesting territories if conducted during the breeding season.

Mitigation

Site clearance, tree felling, abroricultural works and vegetation removal (including enabling works) are to take place outside of the breeding bird season and should not be undertaken from March to August inclusive. If this is not possible and works need to take place between this period, a targeted breeding bird nest scoping survey should be conducted by a suitably qualified ecologist immediately prior to the works, or an ecological clerk of works appointed to oversee the works.

Compensation and enhancement

Compensation for the loss of nesting habitat and the enhancing of the nesting habitat on site can also be provided through the provision of bird nest boxes. At the time of writing this report no detailed plans are available, but bird boxes that could be used on site include:

- Schwegler 1B nest box (affixed to trees)
- Schwegler 2H robin nest box (affixed to trees)

The bird boxes should be sited at a minimum height of three metres. Unless there are trees which shade the box during the day, the boxes should be oriented between north and east, thus avoiding strong sunlight and the wettest winds.

Operational impacts

No operational impacts are envisaged.

4.2.6 Invasive species

Japanese knotweed and Himalayan balsam is present on site along the length of Glan-yr-afon brook. Japanese knotweed is listed under Schedule 9 of the Wildlife and Countryside Act 1981, and Himalayan balsam is listed under Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019. As such, it is an offence to plant or otherwise cause these species to grow in the wild.

Construction impacts

Site clearance and setting out could result in the disturbance and dispersal of Japanese knotweed and Himalayan balsam on and off site.

Mitigation

An invasive species method statement should be prepared in order to detail how these species will be eradicated and controlled during the construction phase of the development. This method statement can usually be secured through a suitably worder planning condition. Th method statement will need to detail how invasive species will be eradicated from the working

area prior to the start of works on site in order to ensure that they do not spread across the site or onto adjacent areas. Invasive species not within the working area should be subject to control measures to ensure that there is no risk of incidental spread from non-working areas.

Operational impacts

Given that Glan-yr-afon brook is already severely impacted by invasive species, which are found along its entire length, it is likely that complete eradication from the site is an unrealistic target and would require regular and intensive treatment along the entire length of the brook (including beyond the site boundary). Invasive species will likely re-establish within the working areas within which invasive species are eradicated from prior to the start of works.

4.2.7 Kingfisher

Evidence of recent use by nesting kingfisher was observed within a cluster of tunnels all located within 2m of each other near the northern end of the site. It is likely that the tunnels have been used for nesting purposes within the last year or two based on the amount of droppings present.

Construction impacts

As part of the proposals, a footbridge will be installed crossing the brook. The exact location of this footbridge is not yet known but it is likely to not directly impact the area where the tunnels were identified. Nevertheless, if kingfisher are nesting within the tunnels during the construction phase then they are at risk of disturbance and may abandon an active nest.

Mitigation

If the construction period is due to take place within the nesting bird season (March to August inclusive) then a nesting bird check is required to ascertain whether the nest is active or not. If the nest is active, then a suitably experienced ecologist should determine whether the nest is at risk of being disturbed by the construction activities and if so, the works should stop until is has been confirmed by the ecologist that the chicks have fledged.

Compensation and enhancement

As above, it is not expected that the known kingfisher tunnels will be directly impacted by the works. However, the proposals offer the opportunity to enhance the habitat for nesting kingfisher through the installation of kingfisher nest boxes in other suitable areas of the brook, potentially as part of the works to install a footbridge.

Operational impacts

Any external lighting installed should be designed to avoid overspill onto known location of the kingfisher tunnel. This may require the use of cowling or the relocation of the lighting. The use of the footpath by pedestrians is not considered to pose a significant risk of disturbing kingfisher.

4.2.8 Otter

Two otter spraints were found by the watercourse, and otters are known to be present in the local area. No evidence of otter holts or couches were noted during this PEA, and the works within proximity of the water course are restricted to a small area. However, the brook is broadly suitable for commuting and foraging otter.

Construction impacts

The proposed development could potentially cause direct harm, injury and / or death to individuals. It could also cause disturbance during the construction phase of the development.

Mitigation

An otter survey should be undertaken by a suitably experienced ecologist in order to identify any holts or other signs of how otters may be using the site. The results of this survey will then inform any further mitigation or compensation that may be required.

Operational impacts

Once the further survey work has been undertaken, the impacts of the proposed development and required mitigation and compensation measures can be more accurately assessed.

4.2.9 White-clawed crayfish

Although no white-clawed crayfish were seen during the walkover survey and they are not known to be present in the local area, the water quality and river bed features are suitable for crayfish, providing foraging opportunities and adequate shelter.

Construction impacts

Potential impacts include contamination of the watercourse with biotic and abiotic materials which may degrade the water quality and ultimately the habitat suitability. In addition, there could be direct harm, injury and / or death to individuals if present within the working area.

Mitigation

eDNA analysis of Glan-yr-afon brook should be carried out as a precautionary measure to inform on the presence or absence of white-clawed crayfish, which may indicate the need to carry out additional surveys if present. This can be carried out from April to October inclusive.

Operational impacts

To be assessed following the eDNA survey.

5 CONCLUSION

The proposed development site has an area of approximately 0.6ha but it is set within a wider survey boundary of approximately 5.2ha total. The site is largely dominated by woodland (broadleaved semi-natural, and mixed and broadleaved plantation) but with arable fields located to the north of the site, and a grazed species-poor semi-improved grassland to the east. The works will largely take place within the arable field, although in order to reroute the PROW, a footbridge will be installed crossing Glan-yr-afon brook, and the PROW will be connected to an existing footpath leading under the railway bridge at the north-western site boundary.

The preliminary ecological appraisal has highlighted potential issues with the following ecological receptors on or adjacent to site: amphibians, reptiles, badgers, bats, birds, invasive species, kingfisher, otter, white-clawed crayfish, watercourses, hedgerows and trees, and woodland. Provided these issues are addressed in accordance with the recommendations detailed in this report, the development may proceed without adversely impacting the aforementioned ecological receptors.

The development also presents an opportunity to enhance the habitats available to wildlife on site. The provisioning of bat and bird nest boxes on site will provide improved roosting and nesting opportunities into the long-term future of the site.

6 REFERENCES

CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal* (Second Edition).

DEFRA (2019). *MAGIC* [online]. Available at: http://magic.defra.gov.uk/.

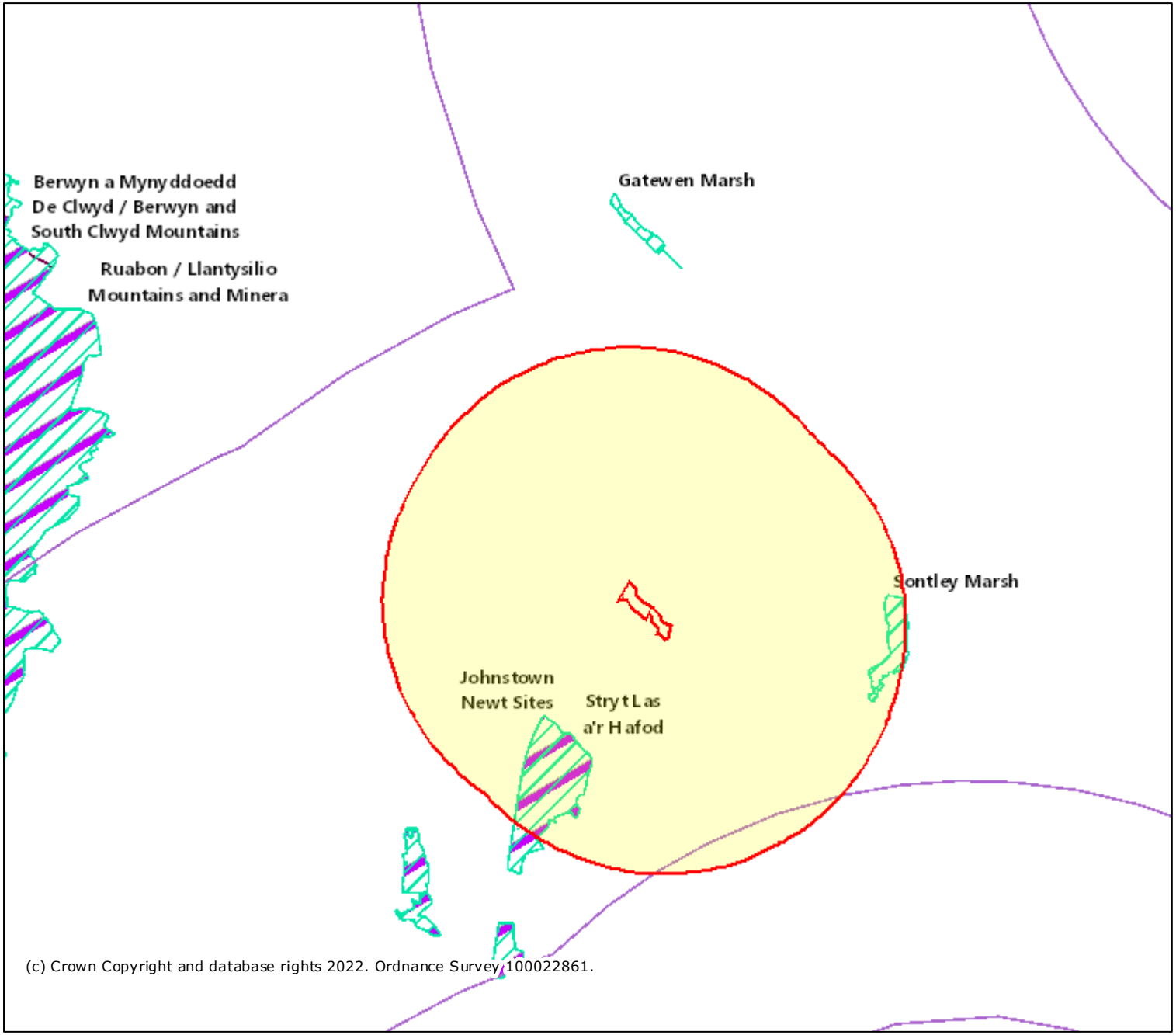
JNCC (2010). *Handbook for Phase 1 habitat survey: A technique for environmental audit*.

MHCLG (2021). National Planning Policy Framework (NPPF).

APPENDICES

Appendix 1 – Desk study

Statutorily Protected Sites - 2km



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Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- National Nature Reserves (Wales)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Ramsar Sites (Wales)

Sites of Special Scientific Interest Units (England)

- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed
- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
- Sites of Special Scientific Interest (Wales)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Areas of Conservation (Wales)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)
- Special Protection Areas (Wales)

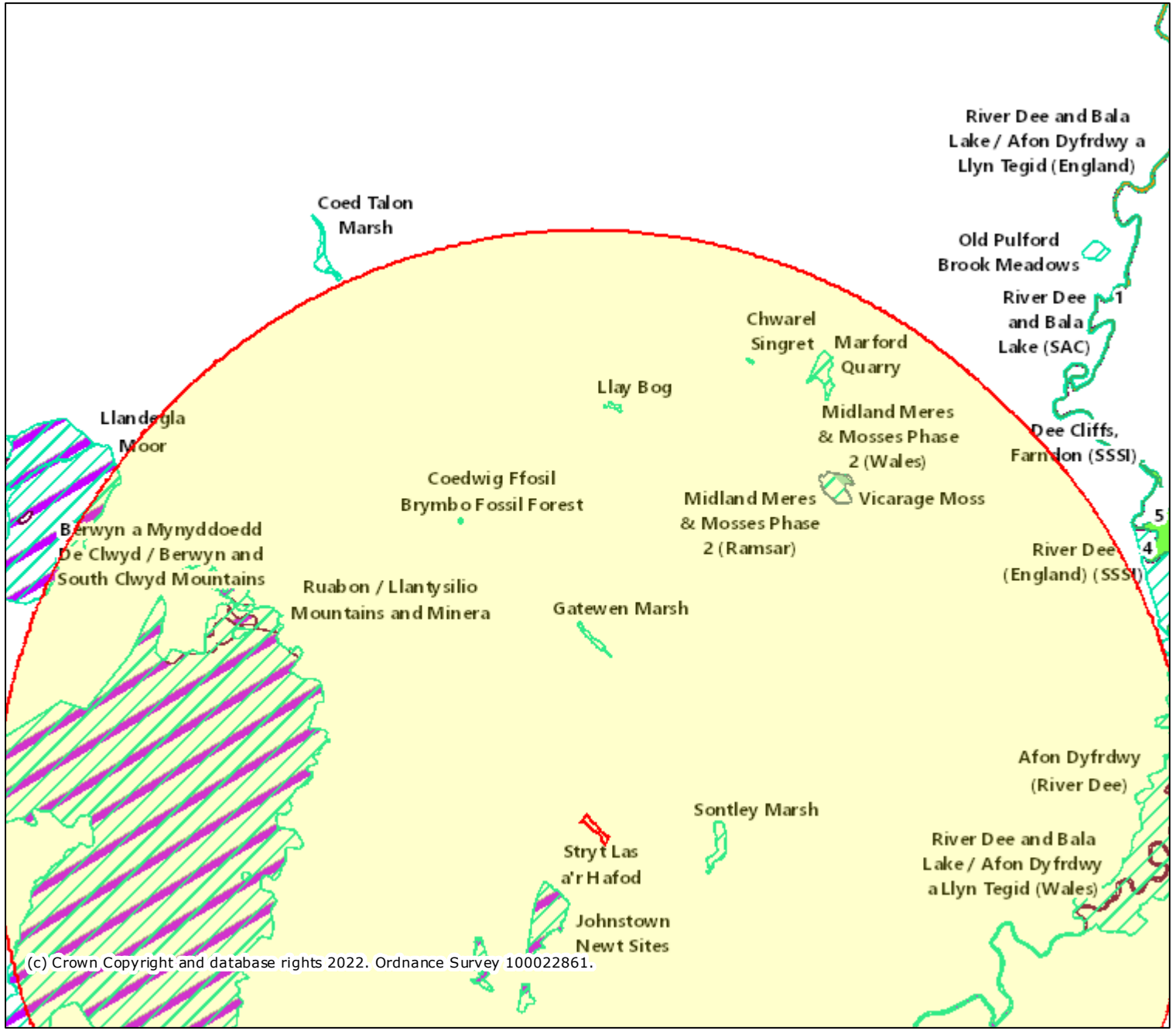
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ymin = 344300
xmax = 341400
ymax = 353700

0 1 2
km

Map produced by MAGIC on 13 October, 2022.

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Statutorily Protected Sites - 10km



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- National Nature Reserves (Wales)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Ramsar Sites (Wales)

Sites of Special Scientific Interest Units (England)

- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed
- Sites of Special Scientific Interest (England)
- Sites of Special Scientific Interest (Wales)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Areas of Conservation (Wales)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)
- Special Protection Areas (Wales)

Projection = OSGB36
xmin = 311400
ymin = 344100
xmax = 352000
ymax = 363000

0 2 4
km

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Statutorily Protected Sites - 10km



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- National Nature Reserves (Wales)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Ramsar Sites (Wales)

Sites of Special Scientific Interest Units (England)

- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed
- Sites of Special Scientific Interest (England)
- Sites of Special Scientific Interest (Wales)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Areas of Conservation (Wales)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)
- Special Protection Areas (Wales)

Projection = OSGB36
xmin = 311300
ymin = 336100
xmax = 351500
ymax = 353500

0 2 4
km

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Appendix 2 – Phase 1 habitat plan

Target Note 1 - Cluster of three kingfisher tunnels

Target Note 2 - Otter spraints

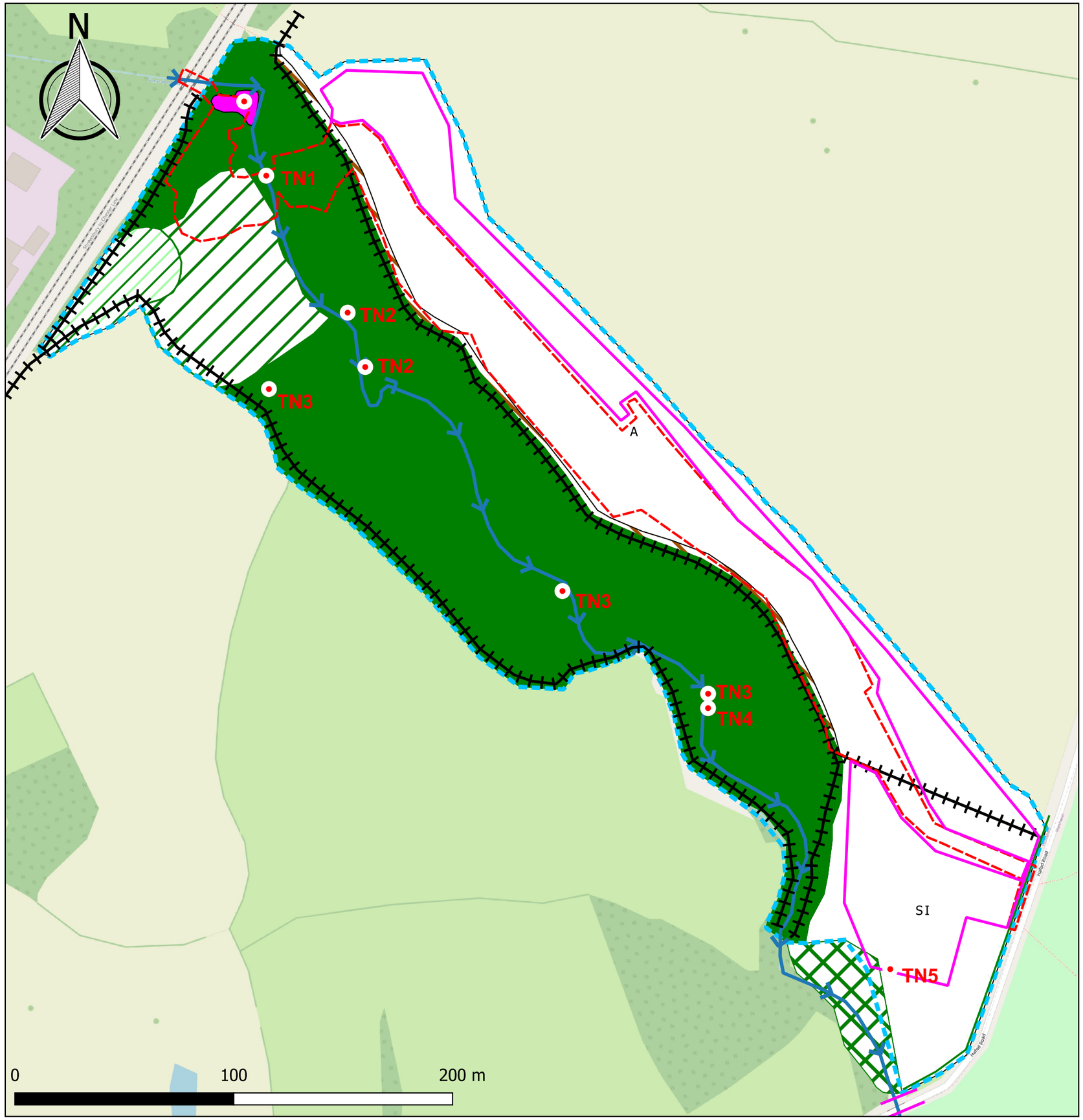
Target Note 3 - Potential badger setts

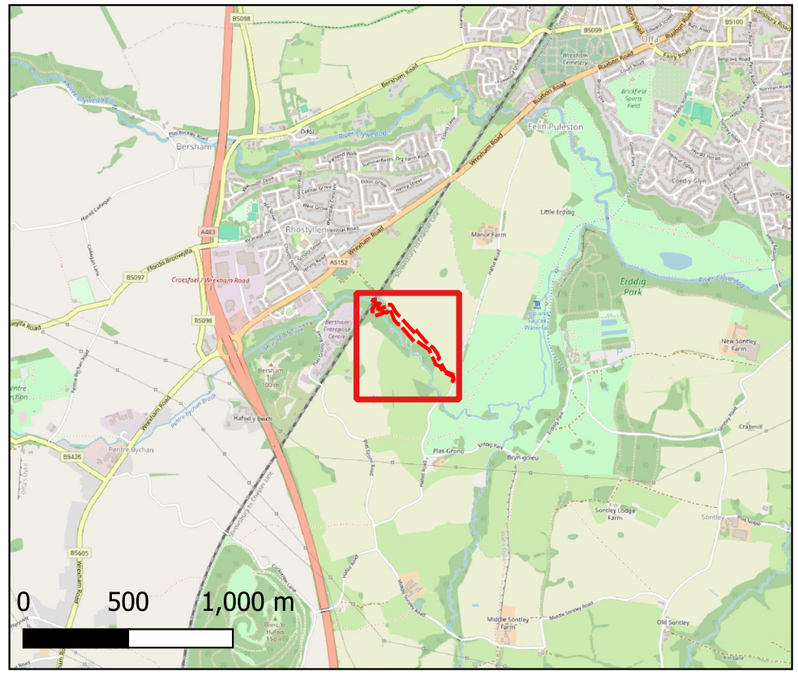
Target Note 4 - Badger latrine

Target Note 5 **-** Poached area of SPSI with higher species diversity

Preliminary Ecological Appraisal

Site: PROW Route, Rhostyllen
NGR: SJ 31775 48245
Author: Mark Halliwell
Date: 12/10/2022





Key

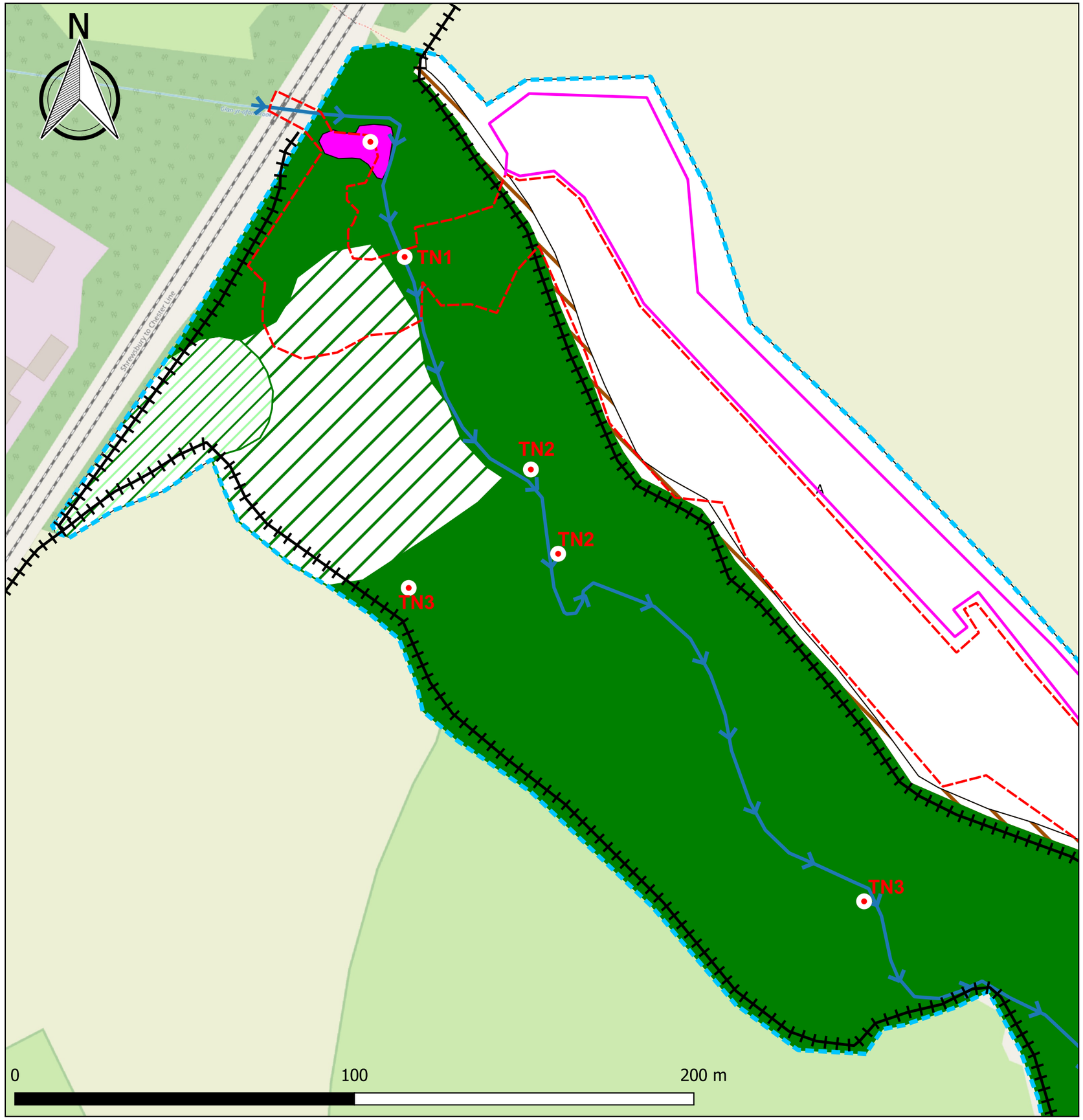
- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Dense scrub
- SI B6 - Poor semi-improved grassland
- C3.1 - Tall ruderal
- G2 - Running water
- A J1.1 - Arable
- J2.3.1 - Hedge with trees - native species-rich
- J2.4 - Fence
- J6 - Other habitat
- Target Notes
- Proposed site boundary
- Temporary compound and materials storage area
- Survey boundary

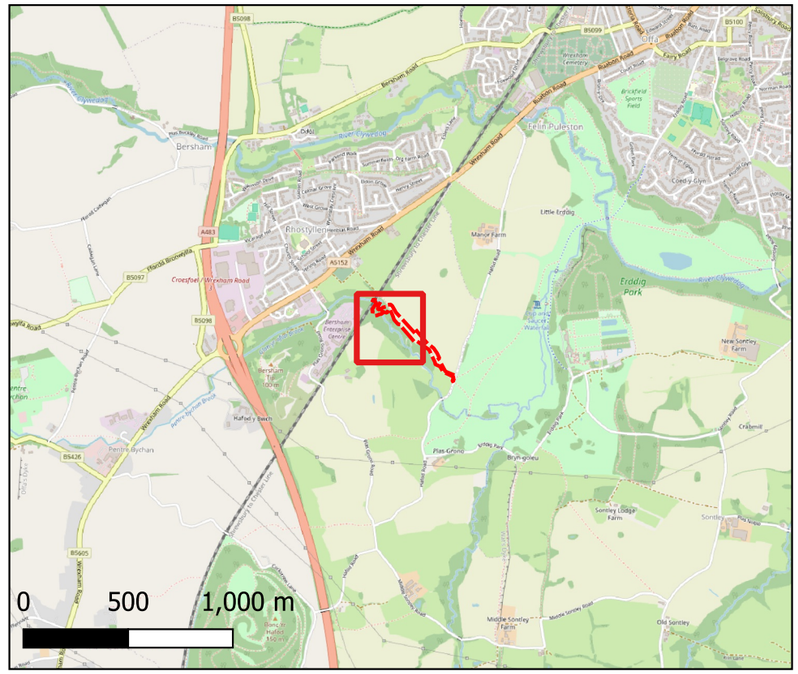
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Preliminary Ecological Appraisal - West

Site: PROW Route, Rhostyllen
NGR: SJ 31775 48245
Author: Mark Halliwell
Date: 12/10/2022





Key

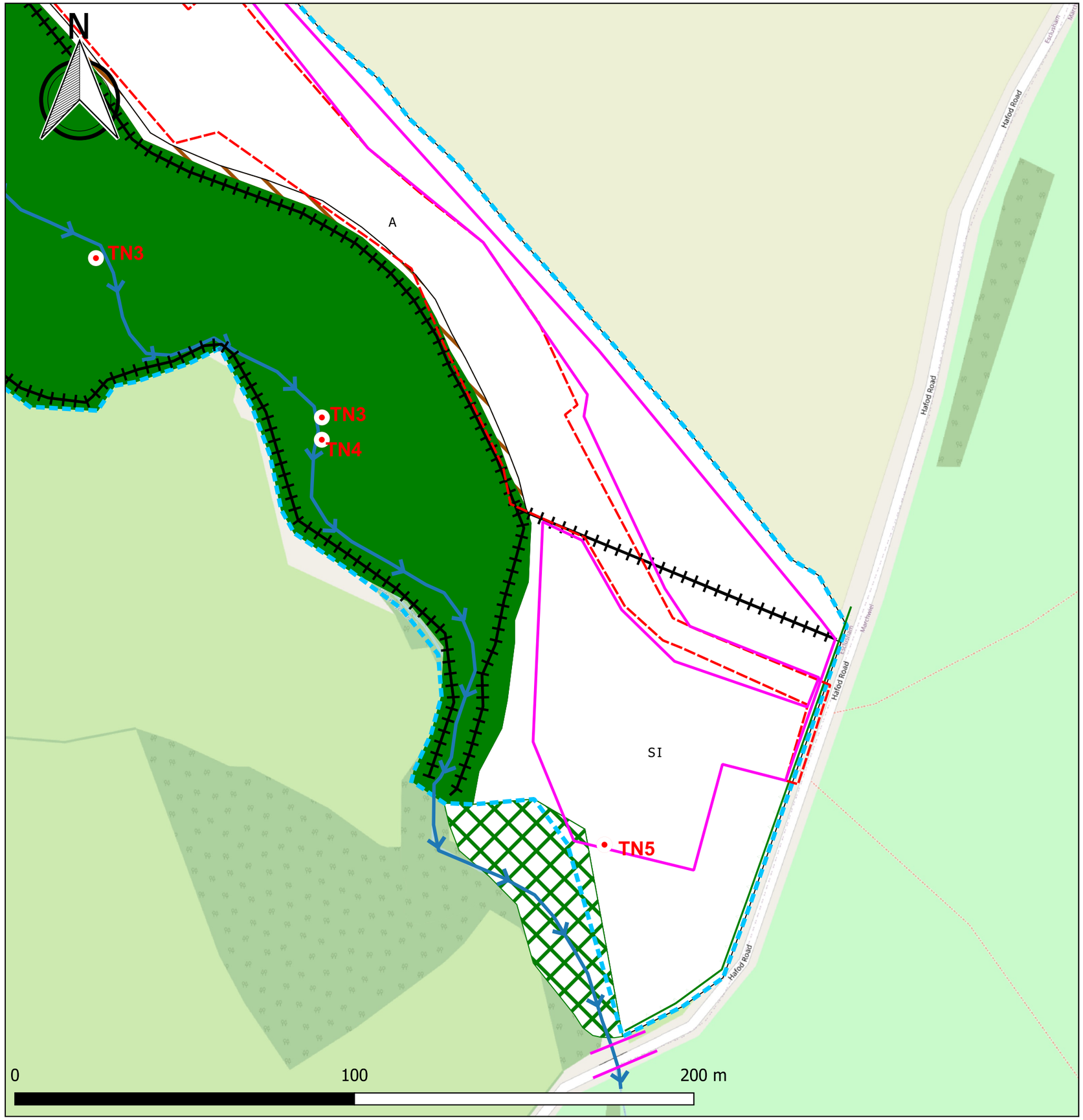
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- A1.1.2 - Broadleaved woodland - plantation
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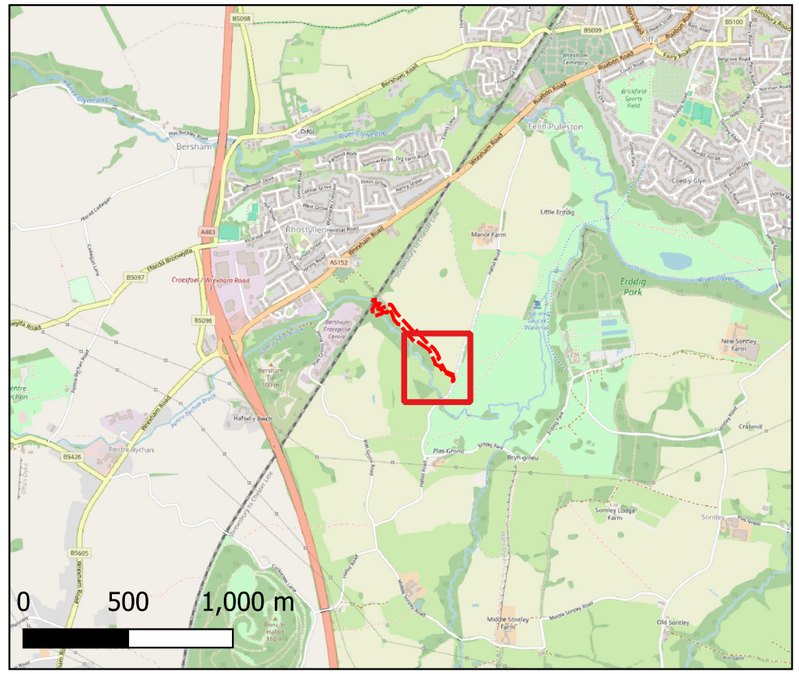
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Preliminary Ecological Appraisal - East

Site: PROW Route, Rhostyllen
NGR: SJ 31775 48245
Author: Mark Halliwell
Date: 12/10/2022





Key

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Dense scrub
- SI B6 - Poor semi-improved grassland
- C3.1 - Tall ruderal
- G2 - Running water
- A J1.1 - Arable
- J2.3.1 - Hedge with trees - native species-rich
- J2.4 - Fence
- J6 - Other habitat
- Target Notes
- Proposed site boundary
- Temporary compound and materials storage area
- Survey boundary

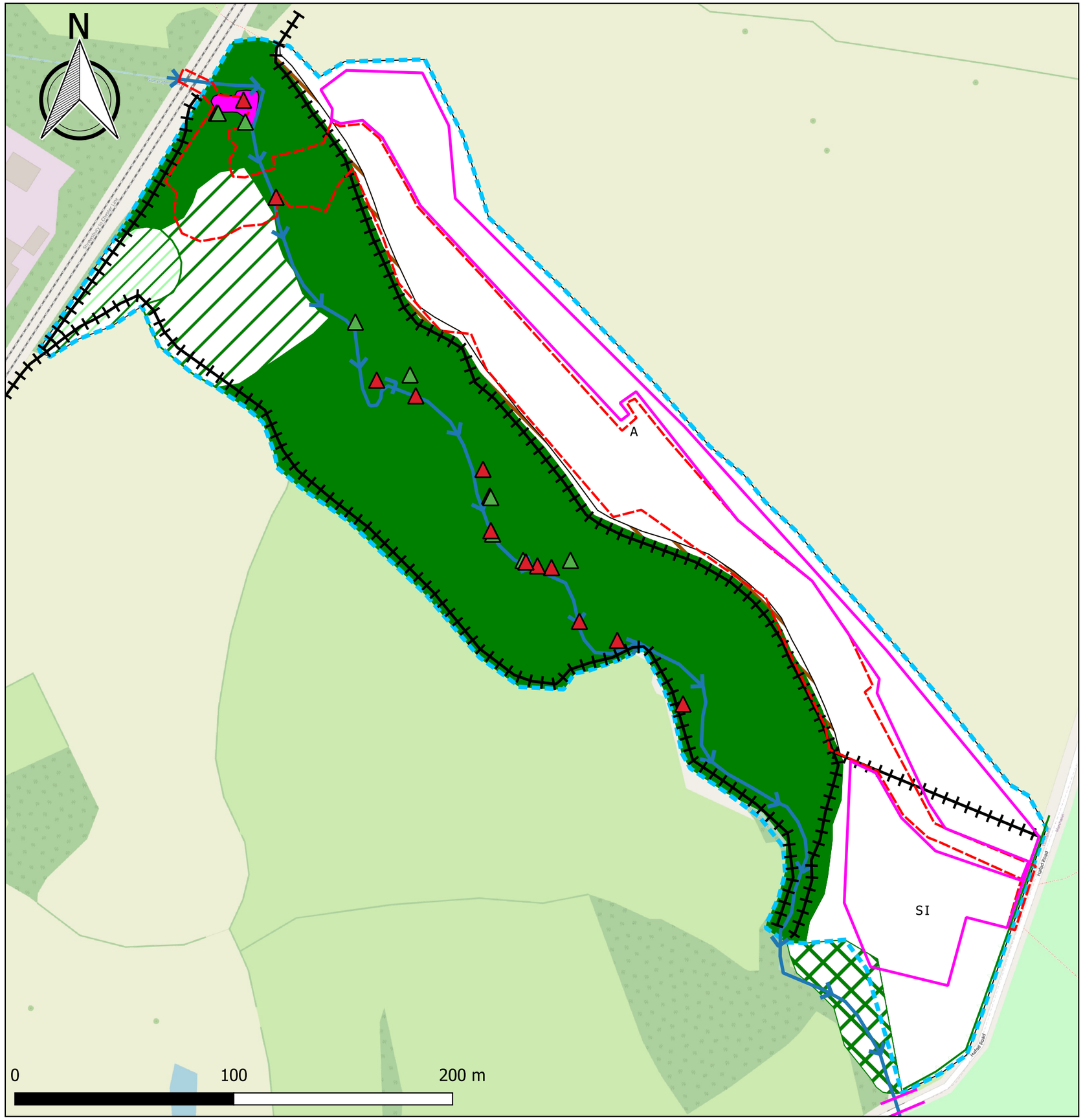
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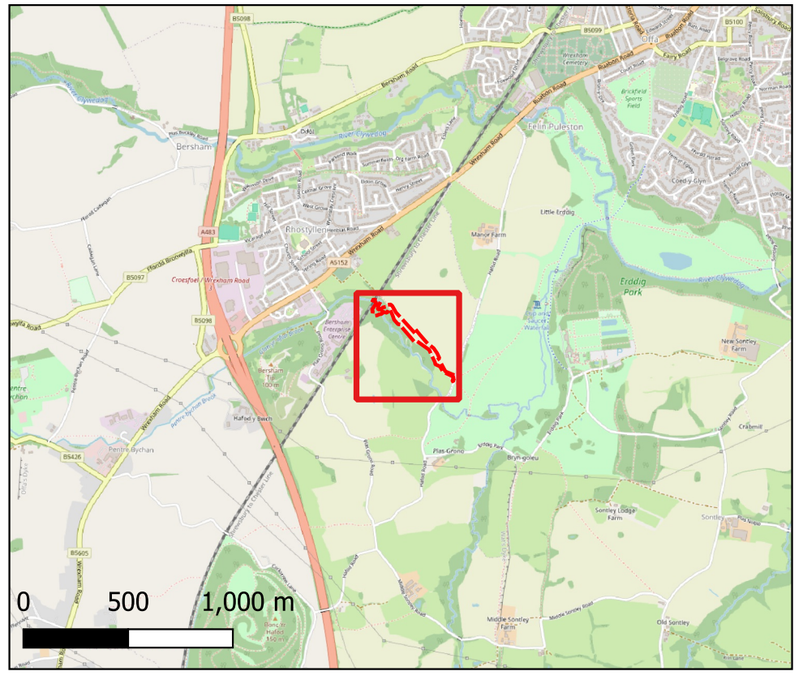
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Appendix 3 – Extent of invasive non-native species

PEA - Current extent of invasive species

Site: PROW Route, Rhostyllen
NGR: SJ 31775 48245
Author: Mark Halliwell
Date: 12/10/2022





KEY:

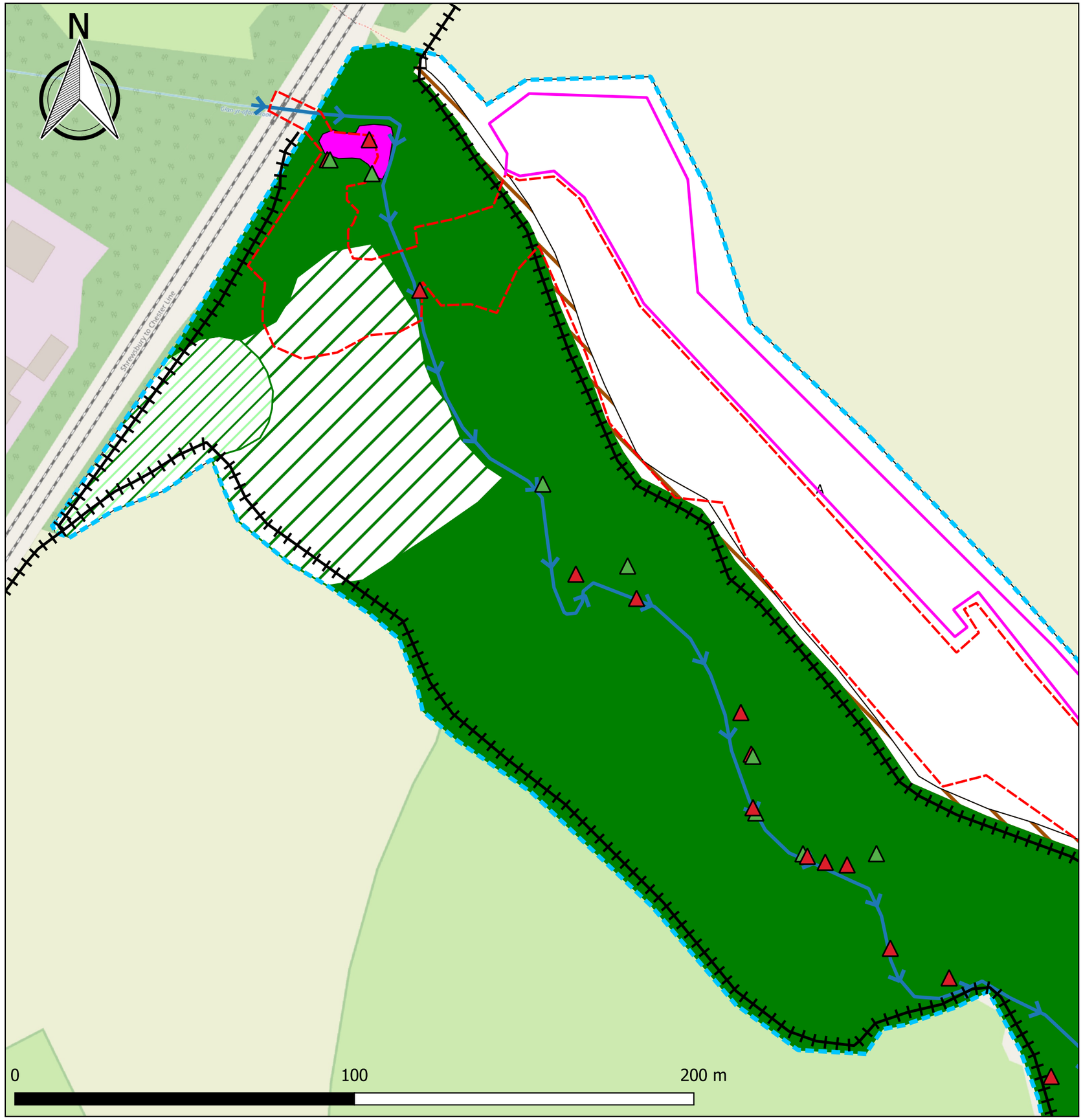
- Japanese knotweed
- Himalayan balsam

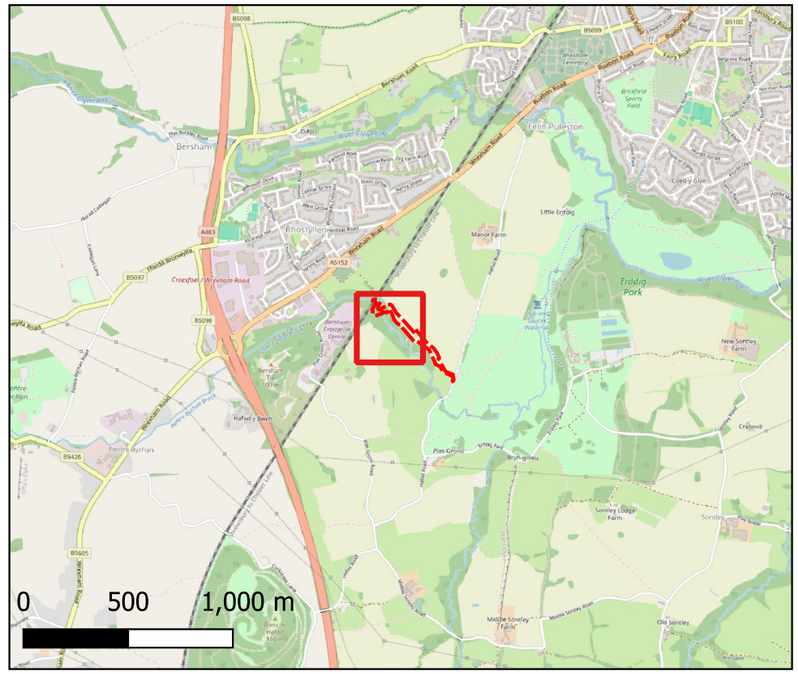
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PEA - Invasive species extent - West

Site: PROW Route, Rhostyllen
NGR: SJ 31775 48245
Author: Mark Halliwell
Date: 12/10/2022





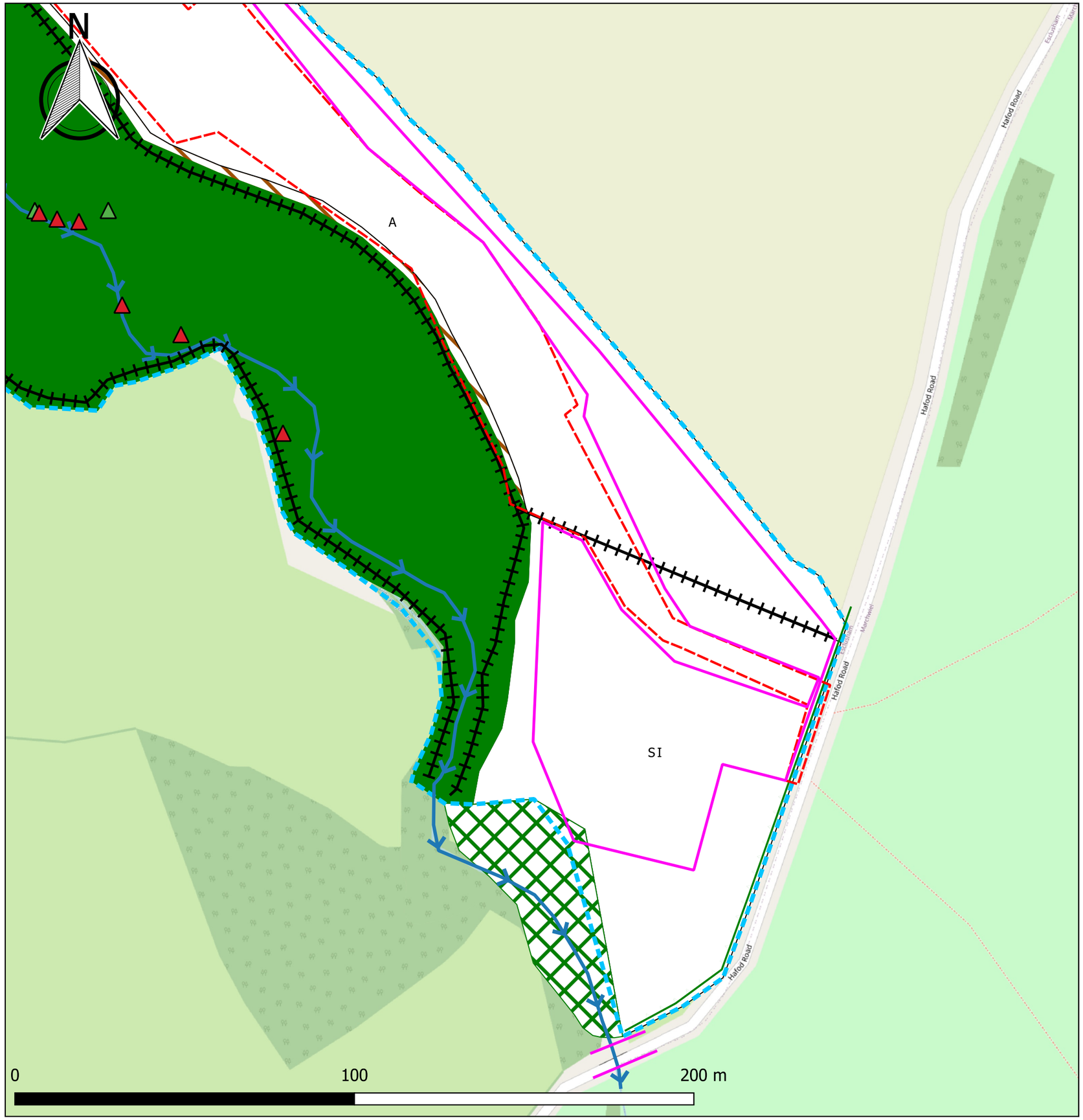
KEY:
- Japanese knotweed
- Himalayan balsam

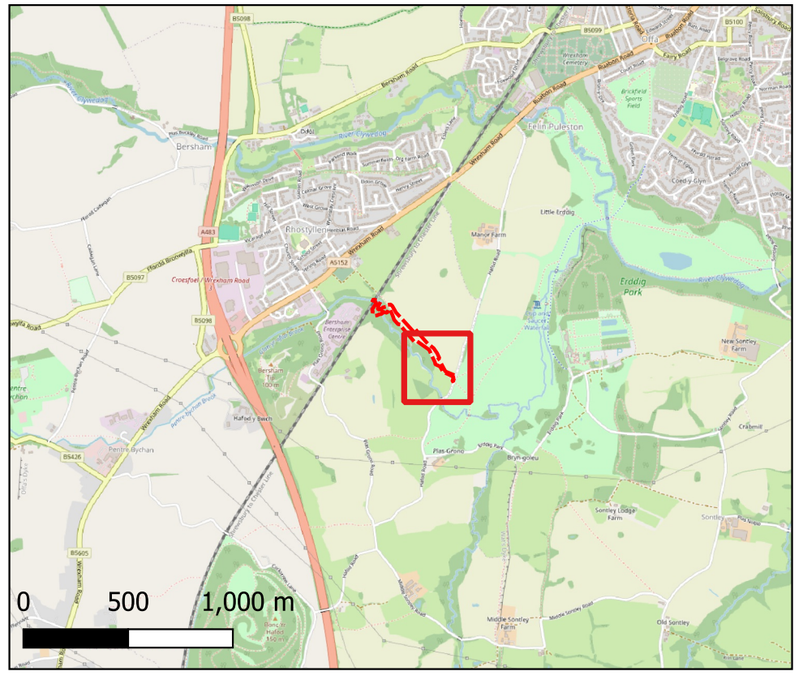
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PEA - Invasive species extent - East

Site: PROW Route, Rhostyllen
NGR: SJ 31775 48245
Author: Mark Halliwell
Date: 12/10/2022





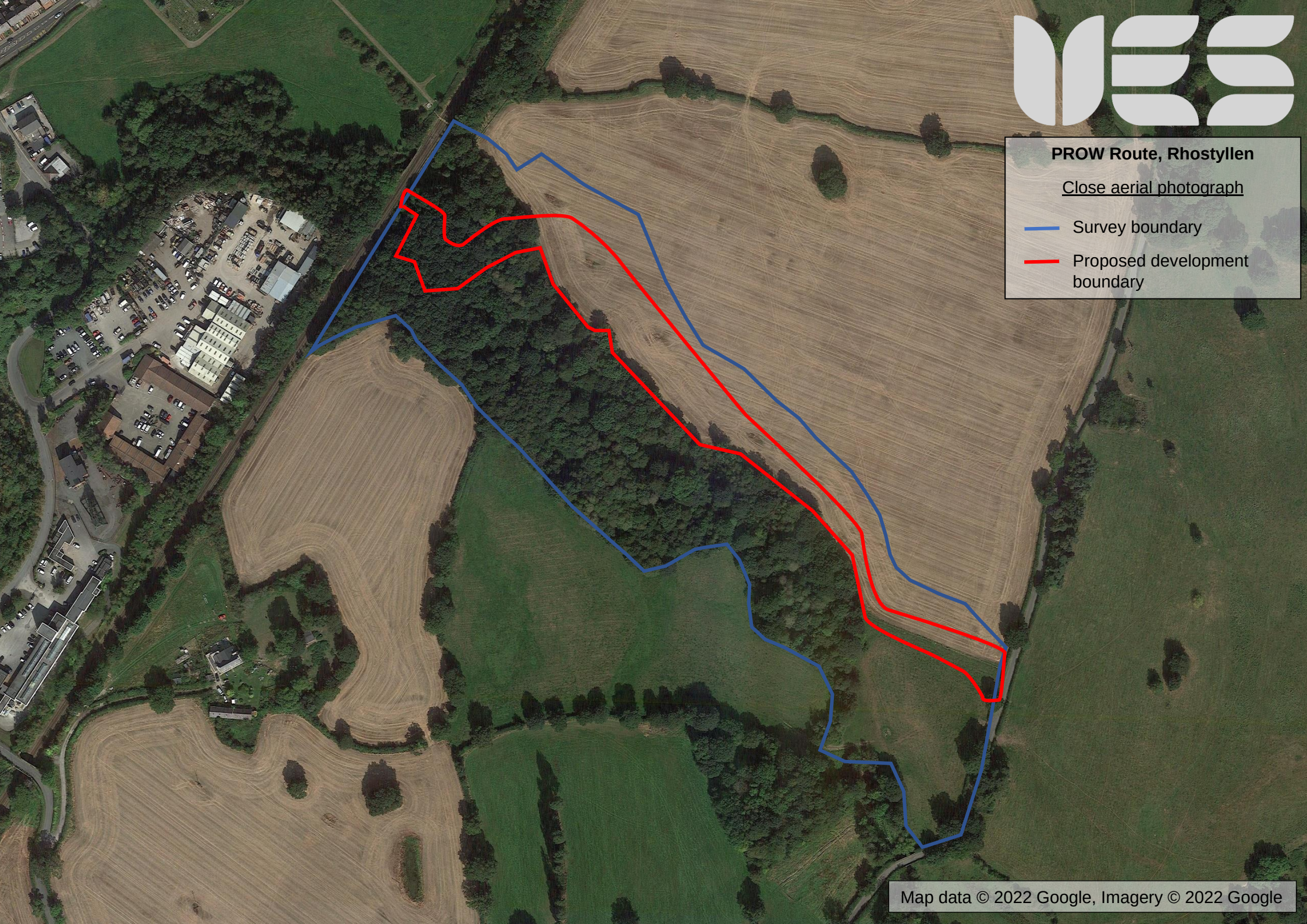
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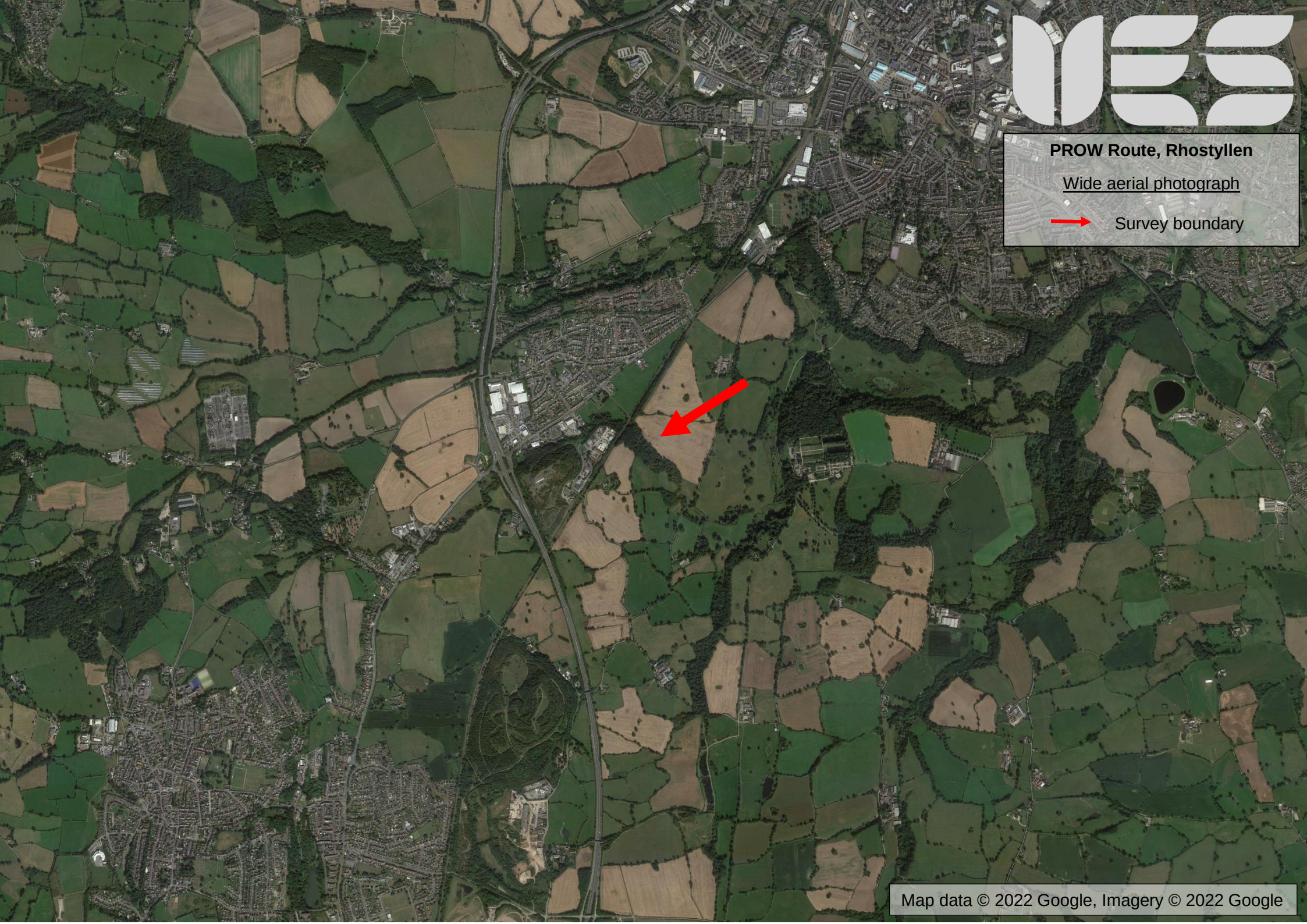
- Japanese knotweed
- Himalayan balsam

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Appendix 4 – Aerial photographs


PROW Route, Rhostyllen
Close aerial photograph
Survey boundary
Proposed development boundary
Map data © 2022 Google, Imagery © 2022 Google


PROW Route, Rhostyllen
Wide aerial photograph
Survey boundary
Map data © 2022 Google, Imagery © 2022 Google

Appendix 5 – Photographs



Photo 1. Looking south-east from the north-western site boundary along the woodland edge and arable field.



Photo 2. Looking east from the north-western site boundary along the woodland edge and arable field. Ruderal vegetation visible bordering the woodland.



Photo 3. Looking west from near the eastern edge of the broad-leaved semi-natural woodland.



Photo 4. Image showing the dense understorey in parts of the woodland.



Photo 5. Area of woodland with a sparser understorey near to the western edge of the woodland.



Photo 6. Looking east towards the broadleaved plantation woodland comprising ash trees.



Photo 7. Looking west from within the north-western corner of the site through mixed plantation woodland.



Photo 8. Looking south from the arable field over the species-poor sem-improved grassland pasture.



Photo 9. A section of Glan-yr-afon brook with stoney substrate.



Photo 10. Another section of Glan-yr-afon brook with a muddy / silty substrate and narrower channel.



Photo 11. Intact species-rich hedge with trees. Stile entrance visible next to oak tree.



Photo 12. A near-continuous stand of Himalayan balsam and Japanese knotweed adjacent to the brook.



Photo 13. Northernmost sett entrance near to the western site boundary with guard hair outside.



Photo 14. Southernmost sett entrance near latrine.



Photo 15. Badger latrine near the southernmost sett entrance.



Photo 16. Looking towards railway bridge



Photo 17. Tear our feature on mature oak tree within the woodland.



Photo 18. Loose bark and exposed heartwood which may provide PRFs for bats.



Photo 19. Cluster of three kingfisher burrows within steep banks adjacent to glan-yr-afon brook.



Photo 20. Otter spraint located on block near fallen red brick wall (TN2).



Photo 21. Otter sprain on fallen red brick wall (TN2).

Appendix 6 – Botanical species list

Scientific name	Common name	**A1.1.1** Broad-leaved semi-natural woodland	**A1.1.2** Broad-leaved plantation woodland	**A1.3.2** Mixed plantation woodland	**A2.1** Dense scrub	**B6** Poor semi-improved grassland	**C3.1** Tall ruderal herb and fern	**J2.1.1** Intact hedge, species-rich
Alnus glutinosa	Alder	X (Canopy)						
Malus sp.	Apple	X (Understorey)						
Fraxinus excelsior	Ash	X (Canopy)	X	X				X
Fagus sylvatica	Beech	X (Canopy)						
Solanum dulcamara	Bittersweet					X (poached area)		
Dioscorea communis	Black Bryony					X (poached area)	X	
Prunus spinosa	Blackthorn				X		X	X
Hyacinthoides non-scripta	Bluebell	X (Field)						
Rubus fruticosus agg.	Bramble	X (Field)					X	X
Brassica sp	Brassica species						X	
Dryopteris dilatata	Broad Buckler-fern	X (Field)						
Rumex obtusifolius	Broad-leaved Dock						X	
Veronica beccabunga	Brooklime					X (poached area)		
Petasites hybridus	Butterbur				X			
Galium aparine	Cleavers						X	
Dactylis glomerata	Cock's-foot					X	X	
Tussilago farfara	Coltsfoot					X (poached area)		
Agrostis capillaris	Common Bent					X		
Stellaria media	Common Chickweed					X (poached area)		
Veronica persica	Common Field-speedwell					X (poached area)		
Galeopsis tetrahit	Common Hemp-nettle	X (Field)						
Cerastium fontanum	Common Mouse-ear					X		
Urtica dioica	Common Nettle	X (Field)					X	
Fagus sylvatica 'Purpurea'	Copper Beech	X (Canopy)						
Anthriscus sylvestris	Cow Parsley						X	
Agrostis stolonifera	Creeping Bent					X (poached area)		
Ranunculus repens	Creeping Buttercup					X	X	
Potentilla reptans	Creeping Cinquefoil					X		
Cirsium arvense	Creeping Thistle					X	X	
Cyclamen sp.	Cyclamen species	X (Field)						
Taraxacum officinale agg.	Dandelion	X (Field)				X		
Rosa canina	Dog-rose				X			X
Mercurialis perennis	Dog's Mercury	X (Field)					X	
Sambucus nigra	Elder	X (Shrub)			X			
Circaea lutetiana	Enchanter's-nightshade	X (Field)						
Arrhenatherum elatius	False Oat-grass						X	
Brachypodium sylvaticum	False-brome	X (Field)						
Equisetum arvense	Field Horsetail					X (poached area)		
Acer campestre	Field Maple	X (Understorey)						X
Rosa arvensis	Field-rose				X			X
Alliaria petiolata	Garlic Mustard					X (poached area)		
Ribes uva-crispa	Gooseberry	X (Field)						
Epilobium hirsutum	Great Willowherb					X (poached area)		
Plantago major	Greater Plantain					X	X	
Salix cinerea	Grey Willow	X (Canopy)						
Aegopodium podagraria	Ground-elder					X (poached area)		
Glechoma hederacea	Ground ivy	X (Field)						X
Polystichum aculeatum	Hard Shield-fern	X (Field)						
Phyllitis scolopendrium	Hart's-tongue	X (Field)						
Crataegus monogyna	Hawthorn	X (Shrub)			X			X
Corylus avellana	Hazel	X (Shrub)						X
Calystegia sepium	Hedge Bindweed					X (poached area)		
Stachys sylvatica	Hedge Woundwort	X (Field)						X
Oenanthe crocata	Hemlock Water-dropwort	X (Field)						
Eupatorium cannabinum	Hemp-agrimony	X (Field)						
Geranium robertianum	Herb-Robert	X (Field)						
Impatiens glandulifera	Himalayan balsam	X						
Heracleum sphondylium	Hogweed	X (Field)					X	
Ilex aquifolium	Holly	X (Shrub)						X
Carpinus betulus	Hornbeam	X (Canopy)						
Salix fragilis	Hybrid Crack-willow	X (Canopy)						
Hedera helix	Ivy	X (Field)					X	X
Fallopia japonica	Japanese knotweed	X						
Polygonum aviculare	Knotgrass						X	
Larix sp.	Larch sp.	X (Canopy)						
Calystegia silvatica	Large Bindweed	X (Field)						
Arctium minus	Lesser Burdock						X	
Tilia sp.	Lime species	X (Canopy)						
Arum maculatum	Lords-and-Ladies	X (Field)					X	
Gnaphalium uliginosum	Marsh Cudweed						X	
Lapsana communis	Nipplewort	X (Field)						
Acer platanoides	Norway Maple			X				
Chrysosplenium oppositifolium	Opposite-leaved Golden-saxifrage	X (Field)						
Salix viminalis	Osier	X (Canopy)						
Quercus robur	Pedunculate Oak	X (Canopy)						X
Carex pendula	Pendulous Sedge					X (poached area)		
Lolium perenne	Perennial Rye-grass					X	X	

Appendix 7 – External lighting guidance

Lighting scheme in relation to bats

The two most important features of street and security lighting with respect to bats are:

1. The UV component. Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.

2. Restriction of the area illuminated. Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:

Low

- Low pressure Sodium Lamps (SOX) emit a minimal UV component.
- High pressure Sodium Lamps (SON) emit a small UV component.
- White SON, though low in UV, emit more than regular SON.

High

- Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
- Mercury lamps (MBF) emit a high UV component.
- Tungsten Halogen, if unfiltered, emit a high UV component
- Compact Fluorescent (CFL), if unfiltered, emit a high UV component.
- Variable
- Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.
- Glass glazing and UV filtering lenses are recommended to reduce UV output.

Street lighting

- Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.
- Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.
- If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

Security and domestic external lighting

The above recommendations concerning UV output and direction apply. In addition:

- Lighting should illuminate only ground floor areas. Light should not leak upwards to illuminate first floor and higher levels.
- Lamps of greater than 2000 lumens (150 W) must not be used.
- Movement or similar sensors must be used. They must be carefully installed and aimed, to reduce the amount of time a light is on each night.
- Light must illuminate only the immediate area required, by using as sharp a downward angle as possible. Light must not be directed at or close to bat roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit.
- Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
- Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.

Taken from the Bat Conservation Trust

Appendix 8 – Planning and statutory context

STATUTORY AND PLANNING CONTEXT

Ecological assessments

Ecological assessments play an important part within the planning context; they include an initial assessment which highlights any specific interests of a site. From the initial site assessment, the surveyor assesses the suitability of habitats within the site to support protected species and makes recommendations for further survey works if required. The following paragraphs provide a brief interpretation of the legislative protection that is relevant to the findings of this report.

Habitats

Section 7 of the Environment Act (Wales) places a duty on Welsh Ministers to publish, review and revise lists of types of habitats and species in Wales which they consider are of key significance to sustain and improve biodiversity. The Welsh Ministers must also take all reasonable steps to maintain and enhance the habitats published in these lists, and encourage others to take such steps.

Amphibians

<u>Great crested newts</u>

Great crested newts (GCN) *Triturus cristatus* and their habitat (aquatic and terrestrial) are afforded full protection by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture GCN
- Deliberately, intentionally or recklessly disturb GCN in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to hibernate or migrate
    - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of GCN
- Damage or destroy breeding sites or resting places of GCN
- Intentionally or recklessly disturb sheltering GCN, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead GCN, any part of GCN or anything derived from GCN

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

GCN are also protected by the Protection of Animals Act 1911, which prohibits cruelty and mistreatment. Releasing a GCN in such a way as to cause undue suffering may be an offence under the Abandonment of Animals Act 1960.

In addition to the above, there are various statutory provisions relating to the transport of animals, designed to ensure their welfare. GCN are also listed under Section 7 of the Environment (Wales) Act 2016.

It is important to identify the presence of GCN individuals and also to identify suitable habitat on sites so that legal obligations regarding this species can be observed. If a survey identifies the presence of GCN on the site, an assessment of the population size class is required. This can then inform a mitigation scheme, which would need to be developed in liaison with the local Natural Resources Wales (NRW) team, and which minimises direct threats to newts and compensates for any loss of habitat. A licence issued by NRW is required for the legal implementation of a mitigation scheme.

An NRW mitigation licence application requires a Mitigation Method Statement and a Reasoned Statement of Application. The Mitigation Method Statement contains details of the proposed mitigation works. The Reasoned Statement needs to provide a rational and reasoned justification as to why the proposed development meets the requirements of the Conservation (National Habitats & c.) regulations 1994, namely Regulations 44(2)(e), (f) or (g), and 44(3)(a).

Other amphibians

More common British amphibians, such as common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Triturus vulgaris* and palmate newt *Triturus helveticus* are protected only by Section 9(5) of the Wildlife and Countryside Act 1981 (as amended). This section prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy.

The above named species are also listed as UK Species of Conservation Concern. Due to general declines in most British amphibian species in recent years, many local authorities require amphibian surveys as a planning condition, or as part of environmental information submitted as part of a planning application, even where the presence of GCN is ruled out.

Natterjack toad *Bufo calamita* and pool frog *Pelophylax lessonae* are also offered the same level of protection as GCN, through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

Natterjack and common toad are also listed under Section 7 of the Environment (Wales) Act 2016.

Water bodies that support all five (more common) species of British amphibians in high numbers, may be afforded protection in local plans, as Sites of Importance for Nature Conservation (SINC), or a similar equivalent, for sites of local importance. A site may require statutory protection as a Site of Special Scientific Interest (SSSI).

Reptiles

Common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus* are protected under the Wildlife and Countryside Act 1981 (as amended). They are listed as a Schedule 5 species therefore part of Section 9(1) and section 9(5) apply. The Countryside and Rights of Way Act 2000 also strengthens their protection. It is offence to:

- Intentionally or recklessly kill or injure any of the species listed above
- Sell, offer, advertise or transport for sale a live or dead animal of the species listed above

If a proposed development is likely to have an impact on these reptiles the local statutory nature conservation organisation must be consulted.

Sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* receive full protection under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017. Read together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture any sand lizards or smooth snakes
- Deliberately, intentionally or recklessly disturb sand lizards or smooth snakes in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to hibernate or migrate
    - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of such an animal
- Damage or destroy breeding sites or resting places of such animals
- Intentionally or recklessly disturb sheltering sand lizards or smooth snakes, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead sand lizards or smooth snakes, any part of such an animal or anything derived from such an animal

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

All reptile species (except for smooth snake) are also listed under Section 7 of the Environment (Wales) Act 2016.

Badger

European badgers *Meles meles* and their habitat are protected under The Protection of Badgers Act 1992 and are also included on Schedule 6 of the Wildlife and Countryside Act 1981, and Appendix III of the Bern Convention. The legislation affords badgers protection against deliberate harm or injury making it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger (or attempt to do so)
- To interfere with a sett by damaging or destroying it
- To obstruct access to, or entrance of, a badger sett
- To disturb a badger whilst it is occupying a sett

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Works that disturb badgers whilst they are occupying a sett are illegal without a licence. Disturbance can occur even without direct interference or damage to the sett in question. In general, the following activities are likely to require a licence:

- Use of heavy machinery or significant earth moving within 30m of a sett
- Use of lighter machinery (usually any wheeled vehicles) within 20m of a sett
- Any digging, chain saw use or scrub clearance within 10m of a sett

Hazel dormouse

Hazel dormice *Muscardinus avellanarius* are offered full protection through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture dormice
- Deliberately, intentionally or recklessly disturb dormice in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to hibernate or migrate
    - their local distribution or abundance
- Damage or destroy breeding sites or resting places of dormice
- Intentionally or recklessly disturb sheltering dormice, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead dormouse, any part of a dormouse or anything derived from a dormouse

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Dormice are also listed under Section 7 of the Environment (Wales) Act 2016.

Bats

In the United Kingdom, all species of bat and their roosts are afforded full protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (known as the "Habitats Regulations"). The Wildlife and Countryside Act is the domestic implementation of the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) and was amended by the Countryside and Rights of Way Act 2000. This makes it an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture a bat
- Deliberately, intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection
- Deliberately, intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (even if the bat is not present at the time)
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead bat, any part of a bat or anything derived from a bat

Under UK law, a bat roost is *any structure or place which any wild [bat] … uses for shelter or protection*. As bats often reuse the same roosts, legal opinion is that a roost is protected whether or not the bats are present at the time of the activity taking place.

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

If an activity is likely to result in any of the above offences, a licence can be applied for to derogate from the protection afforded. These licences must provide appropriate mitigation and are issued by NRW.

The Environment (Wales) Act 2016 also lists the following bat species as species of principle importance under Section 7:

- Barbastelle *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Brown long-eared bat *Plecotus auritus*
- Greater horseshoe *Rhinolophus ferrumequinum*
- Lesser horseshoe *Rhinolophus hipposideros*

Birds

All wild birds, their nests and young are protected throughout England and Wales by the Wildlife & Countryside Act 1981 (as amended). It is illegal to kill, injure or take any wild bird, or damage or destroy the nest or eggs of breeding birds. The legislation applies to all bird species, common and rare.

In addition to the protection afforded to all wild birds, more vulnerable species listed on Schedule 1 of the Act receive enhanced protection when breeding. Schedule 1 species, including their dependent young, are protected from intentional or reckless disturbance whilst at or near the nest, in addition to the protection afforded the more common species.

The Environment (Wales) Act 2016 offers further protection to the nests of some species that regularly re-use their nests, even when the nests are not in use.

The leading governmental and non-governmental conservation organisations in the UK have reviewed the population status' of 244 UK bird species. "Birds of Conservation Concern 4: the Red List for Birds" is the most recent publication summarising their findings. Three lists, Red, Amber and Green, have been produced based on the most up-to-date evidence available and criteria include conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity, localised distribution and international importance. These lists are a valuable resource when considering conservation priorities.

Trees

Trees may be protected on an individual or group level through a Tree Preservation Order (TPO). In order to carry out works to trees with a TPO, prior written consent must be obtained from the Local Planning Authority. Trees may also be protected through a condition of planning consent or designated conservation areas.

Hedgerows

The Hedgerow Regulations are made under Section 97 of the Environment Act 1995 and came into operation on 1st of June 1997. They aim to protect important hedgerows in the countryside by controlling their removal through a system of notification to the Local Planning Authority.

A hedgerow can only be considered for classification as "important" if it, or the hedgerow of which the section belongs to is over 20m in length (or which meets a hedgerow at either end) and has existed for 30 years or more.

Plants

Schedule 8 of the Wildlife & Countryside Act 1981 (as amended) lists a number of plant species which are protected under Section 13 of the same legislation. As such, it is an offence to:

- Intentionally or recklessly pick, uproot or destroy a plant, or any seeds or spores attached to it, which is listed on Schedule 8
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead wild plant on Schedule 8, any part of the plant or anything derived from the plant

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

The Conservation of Habitats and Species Regulations 2017 extends European legislative protection to a further subset of plants. It is therefore an offence to pick, collect, cut, uproot, destroy or trade any plant listed in Schedule 4 of these Regulations, unless the appropriate licence is first obtained.

A large number of species of vascular plants, lichens, algae, fungi, mosses, stoneworts and liverworts are also protected through planning policy as species of principal importance, as required under Section 7 of the Environment Act (Wales) 2016.

Invasive Plant Species

A number of invasive, non-native plant species are listed under Schedule 9 (Part II) of the Wildlife and Countryside Act 1981 (as amended). The most commonly encountered listed species in ecological surveys are Japanese knotweed *Fallopia japonica*, Montbretia *Crocosmia x crocosmiiflora* and variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum*. Section 14(2) of this Act makes it an offence to *plant or otherwise cause to grow in the wild* any plant listed on Schedule 9 (Part II). These provisions are necessary to prevent the establishment of non-native species which may be detrimental to our native wildlife.

A number of invasive, non-native plants species are listed under Schedule 2 (Part II) of the Invasive Alien Species (Enforcement and Permitting) Order 2019. The most commonly encountered listed species in ecological surveys are Himalayan balsam *Impatiens glandulifera* and giant hogweed *Heracleum mantegazzianum*. Section 3 of this Act make it an offence to *plant* or *otherwise causes to grow in the wild* any plant which is listed on Schedule 2 (Part II). These provisions are necessary to prevent the establishment of non-native species which may be detrimental to our native wildlife.

Soil or plant material contaminated with non-native and invasive plants can cause ecological damage and may be classified as controlled waste. It is an offence to keep, treat or dispose of waste that could harm the environment or human health. If there is any doubt, contact the local authority or Environment Agency.

Japanese knotweed has an extensive root system and new plants can regenerate rapidly from the smallest fragments of rhizomes. Material containing this species is classed as “controlled waste” under the Environmental Protection Act (Duty of Care) Regulations 1991. The disposal of such waste requires all involved parties to follow a strict code of practice and maintain adequate records regarding their conduct.

Otter

European otter *Lutra lutra* are offered full protection through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture otters
- Deliberately, intentionally or recklessly disturb otters in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to migrate
    - their local distribution or abundance
- Damage or destroy breeding sites or resting places of otters
- Intentionally or recklessly disturb sheltering otters, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead otter, any part of an otter or anything derived from otter

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Otters are also listed under Section 7 of the Environment (Wales) Act 2016.

Water vole

Water voles *Arvicola amphibius* are protected by the provisions of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure or take water vole
- Possess or control live or dead water vole or any part of a water vole
- Intentionally or recklessly damage destroy or obstruct access to any structure or place which a water vole uses for shelter or protection, or disturb water vole using such a place
- Sell, offer, advertise or transport live or dead water voles for sale

Licences are available from NRW to allow activities that would otherwise be an offence, including:

- Scientific or educational purposes
- For the purposes of ringing or marking
- Conserving wild animals or introducing them into particular areas
- Preserving public health or public safety
- Preventing the spread of disease
- Preventing serious damage to any form of property or to fisheries

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Water voles are also listed under Section 7 of the Environment (Wales) Act 2016.

White-clawed crayfish

White-clawed crayfish *Austropotomobius pallipes* are protected under the Wildlife and Countryside Act 1981 (as amended). They are listed as a Schedule 5 species therefore part of Section 9(1) and section 9(5) apply. The Countryside and Rights of Way Act 2000 also strengthens their protection. It is offence to:

- Intentionally or recklessly kill or injure white-clawed crayfish
- Sell, offer, advertise or transport for sale a live or dead white-clawed crayfish

If a proposed development is likely to have an impact on white-clawed crayfish then the local statutory nature conservation organisation must be consulted.

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.
Their inclusion on the EC Habitats Directive allows areas to be designated as Special Areas of Conservation (SAC) for the presence of white-clawed crayfish. Such a designation brings legal protection under the Conservation of Habitats Regulations 2017, this includes how the site is managed and what development can occur on and in proximity to these sites.

White-clawed crayfish are also listed under Section 7 of the Environment (Wales) Act 2016.

Planning Policy

National planning guidance is issued in the form of Planning Policy Wales (PPW - 2018). The most relevant sections are included in Chapter 6: Distinctive and Natural Places. This chapter details the policies on issues such as the protection of trees, woodlands, species, and designated sites. The document is free and available to view online.