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PRELIMINARY ECOLOGICAL APPRAISAL

At

ASH Recycling Facility

Redwither Road
Wrexham Industrial Estate
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EXECUTIVE SUMMARY

United Environmental Services Ltd (UES) was commissioned to carry out a baseline ecological survey of a parcel of land at ASH Recycling Facility, Redwither Road, Wrexham Industrial Estate in Wrexham. A desk study and preliminary ecological appraisal (PEA) survey were undertaken on 9th August 2021, including searches using the Multi Agency Geographic Information Centre (MAGIC).

The PEA provides an assessment of potential ecological impacts associated with the development of the land parcel. The development proposals include demolition of existing workshop/storage buildings and portacabins and erection of vehicle workshop, stores and associated offices.

The proposed development site has an area of approximately 0.26ha and is dominated by hardstanding and buildings. There are small areas of ephemeral / short perennial vegetation and tall ruderal within the development site boundary. Furthermore, Redwither Brook and small areas of dense scrub lie within the immediate vicinity of the proposed development site.

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:

- **Bats** – When installing any new lighting, the external lighting guidance provided within this report should be followed and light spillage onto the dense scrub and Redwither Brook must be minimised.
- **Breeding birds** – Demolition 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 the works need to take place during this period, a targeted nest survey is to be undertaken or an ecological clerk of works appointed to oversee the works.
- **Invasive species** – Himalayan balsam *Impatiens glandulifera* was recorded within the survey boundary. The plants are located approximately 60m south-east of the proposed development boundary and will not be impacted by the proposed development. It is recommended that all site operatives receive training in invasive species identification and best practice procedures for avoidance of spreading any species throughout the site. In the event any invasive species are present on site this will enable the site operatives to quickly react and eradicate any plants. The development also presents an opportunity to eradicate the invasive species and enhance nearby habitats via the removal of invasive species.
- **Statutorily designated sites / watercourse** – Specific procedures and control measures are to be implemented to ensure that there is no risk of input into the Redwither Brook, which is hydrologically linked to River Dee / Afon Dyfrdwy site of Special Scientific Interest (SSSI) and River Dee & Bala Lake / Afon Dyfrdwy a Llyn Tegin Special Area of Conservation (SAC). Measures will include the retention of a buffer zone. The measures should be set out by the contractors prior to commencement and agreed with the local planning authority (LPA) and other statutory consultees.
- **Trees** – Generic issues relating to root protection areas (RPAs).



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 7, 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 Emily Clark BSc PGdip ACIEEM, UES Senior Ecologist. Emily holds a level 4 Botanical Society for Britain and Ireland (BSBI) field identification skills certificate (FISC), which certifies her as competent to undertake phase 1 habitat and national vegetation classification (NVC) surveys. Emily is also licensed by Natural Resources Wales to disturb all species of bats, take and handle all species other than greater horseshoe *Rhinolophus ferrumequinum* or lesser horseshoe *Rhinolophus hipposideros* under licence number S089176. Other surveyors include:

- Abigail Miller BA, UES Graduate Ecologist.

The report provides an assessment of the potential ecological impacts associated with the proposed development at ASH recycling Facility, Redwither Road, Wrexham Industrial Estate in 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 August 2021 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

UES was also commissioned in August 2021 to conduct a bat scoping survey of the buildings on site, which included the following activities:

- Conduct internal and external building inspections to look for field signs of bats
- Assess the suitability of the buildings for use by roosting bats
- Recommend further surveys, mitigation and compensation, where appropriate



1.3 Proposed development

The development proposals include demolition of existing workshop/storage buildings and portacabins and erection of vehicle workshop, stores and associated offices.

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 LPA 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 7, 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 – UES has not been commissioned to undertake an environmental records search at this point.

2.2 Field survey

An ecological walkover survey was carried out on 9th August 2021 by Emily Clark and Abigail Miller. 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 | • Hedgerows |
| • Reptiles | • Plant communities |
| • Badger | • Invasive species |
| • Bats | • Otter |
| • Hazel dormouse | • Water vole |
| • Birds | • White-clawed crayfish |
| • Trees | |

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 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.



2.2.1 Survey limitations

No limitations were encountered during the survey. The survey was conducted in August when the majority of plants are identifiable allowing a robust assessment of habitats to be undertaken.

2.3 Building survey

The buildings on site were searched both externally and internally for bat presence and features associated with bat activity, as detailed in BCT guidance (Collins, 2016). This was conducted on 9th August 2021 by Emily Clark and Abigail Miller.

2.3.1 External inspection

The external inspection of the buildings on site was carried out from ground level using binoculars, and an endoscope to investigate suitable gaps. The objective of the survey was to find and record any signs of bat use, for example:

- Bat droppings
- Feeding remains
- Grease staining / urine marks
- Corpses or skeletons

The bat signs listed above are visible from the outside of a building. The following areas were searched, where present:

- | | |
|---------------------------|---|
| • Roof and ridge tiles | • Gaps under felt |
| • Lead flashing | • Cracks / holes in woodwork or behind cladding |
| • Eaves | • Gaps in brickwork and mortar |
| • Boxed soffits | • Air bricks |
| • Fascia and barge boards | • Grills |
| • Window sills and panes | • Vents |
| • Walls | |

2.3.2 Internal inspection

The internal inspection covered all of the accessible rooms within the buildings that will potentially be impacted by the works. The following features were searched, where present:

- Roof beams and junctions
- Gaps under felt
- Dividing walls
- Chimney breasts
- Gaps in brickwork and mortar
- Cracks / holes in woodwork
- Floor or other surfaces on which droppings could accumulate



2.3.3 Survey limitations

No limitations were encountered during the survey, the survey was conducted in early August, during the peak bat survey season.

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.

There are no statutorily protected sites within 2km of the proposed development site boundary. However, the proposed development site lies within a SSSI Impact Risk Zone (IRZ) within which Natural England request that they are consulted on any industrial or agricultural development that could cause air pollution. This includes industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t.

There are 13 statutorily protected sites (designated for ecological reasons) within 2 – 10km of site:

- Cloy Brook Pastures SSSI
- Gatewen Marsh SSSI
- Johnstown Newt Sites SAC
- Llay Bog SSSI
- Marford Quarry SSSI
- Midland Mere and Mosses Phase 2 Ramsar
- Old Pulford Brook Meadows SSSI
- River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC
- River Dee / Afon Dyfrdwy SSSI
- Sontley Marsh SSSI
- Stryt Las A'r Hafod SSSI
- Vicarage Moss SSSI
- Well Rough and Long Plantation SSSI

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.

The local area is semi-rural, as the site is located on the edge of an industrial estate. Habitats to the north, east and west are urban, with large commercial buildings intersected by pockets of woodland. While habitats to the south are of higher quality, with improved pasture fields intersected with hedgerows, watercourses and blocks of woodland. The following principle habitat types were characterised within the survey boundary:

- A2.1 Scrub – dense / continuous
- A3.1 Broadleaved scattered trees
- C3.1 Tall ruderal
- G2 Running water
- J1.3 Ephemeral / short perennial
- J2.4 Fence
- J2.5 Wall
- J3.6 Buildings
- J5 Hardstanding

3.2.1 A2.1 Dense scrub

Within the survey area and immediately south of the proposed development boundary, there is an area of dense scrub, see Appendix 4, Photographs, Photograph 1 and 2. The area is a mixture of bramble *Rubus fruticosus agg* and young trees, which are less than 5m tall and as such have been classified as scrub. The most frequent species present include: apple *Mallus sp.*, hazel *Corylus avellana*, oak *Quercus robur* saplings, willow species *Salix sp.* saplings, cherry laurel *Prunus laurocerasus*, crack willow *Salix fragilis*, dogwood *Cornus sanguinea*, honeysuckle *Lonicera periclymenum*, rose *Rosa sp.* and bramble. Other species present include purple loosestrife *Lythrum salicaria*, broadleaved plantain *Plantago major*, herb Robert *Geranium robertianum*, black medic *Medicago lupulina*, variegated ivy *Hedera helix*, wood avens *Geum urbanum*, Yorkshire fog *Holcus lanatus*, bristly oxtongue *Helminthotheca echinoides*, creeping thistle *Cirsium arvense*, stinging nettle *Urtica dioica*, nipplewort *Lapsana communis*, dandelion *Taraxacum officinale agg*, mugwort *Artemisia vulgaris*, black bryony *Dioscorea communis*, petty spurge *Euphorbia peplus* and broadleaved dock *Rumex obtusifolius*.

There is a second area of dense scrub located immediately north of the proposed development boundary where some of the young trees within the scrub are overhanging the palisade fence. Species present include hawthorn *Crataegus monogyna*, ash *Fraxinus excelsior*, bramble, dogwood, honeysuckle and blackthorn *Prunus spinosa*.

3.2.2 A3.3 Scattered mixed trees

There are a small number of mature trees scattered within the dense scrub immediately south of the proposed development boundary (see Photographs 2 and 3). Species present include ash, willow species, cherry *Prunus sp.* and field maple *Acer campestre*. There is also one mature oak tree within the northern section of the site (Photograph 4).

3.2.3 C3.1 Tall ruderal

There is a small strip of tall ruderal vegetation along the north-eastern boundary of the development site (Photograph 5). Species present include: bramble, burdock *Arctium minus*, mugwort, hazel saplings, large bindweed *Calystegia sepium*, hogweed *Heracleum sphondylium*, broadleaved willowherb *Epilobium montanum*, black bryony, field horsetail *Equisetum arvense*, ribwort plantain *Plantago lanceolata*, wild carrot *Daucus carota*, colt's-foot *Tussilago farfara*, alder *Alnus glutinosa* saplings, ox-eye daisy, herb robert, purple loosestrife and stinging nettle.

3.2.4 G2 Running water

Redwither Brook is located approximately 5m south of the proposed development boundary. The brook is approximately 2m wide and was relatively shallow at the time of the survey (approximately 20cm deep) and had a high flow rate (Photograph 6). Concrete lines a large proportion of the watercourse and the northern bank is constructed from concrete while gabion baskets are present on both the northern and southern bank (Photograph 7). Dense scrub has encroached both banks, but to a greater extent on the northern bank and the watercourse is well shaded by the scrub. No submerged or emergent vegetation is present. Furthermore, the brook is culverted at both the south-eastern survey boundary and south-western survey

boundary (Photograph 8). The culverts are constructed from cast concrete and are in excellent condition.

3.2.5 J1.3 Ephemeral / short perennial

Within the south-eastern section of the survey boundary, where there is rubble and gravel present, ephemeral / short perennial species have colonised (Photographs 9 and 10). Species present include: colt's-foot, common poppy *Papaver rhoeas*, broadleaved willowherb, celery-leaved buttercup *Ranunculus sceleratus*, redshank *Persicaria maculosa*, annual meadow grass *Poa annua*, water bent *Polypogon viridis*, common figwort *Scrophularia nodosa*, weld *Reseda luteola*, scented pineapple weed *Matricaria discoidea*, common knotgrass *Polygonum avicular*, cock's-foot *Dactylis glomerata*, broadleaved plantain, sticky mouse-ear chickweed *Cerastium glomeratum*, shepherd's purse *Capsella bursa-pastoris*, scarlet pimpernel *Anagallis arvensis*, common chickweed *Stellaria media*, white clover *Trifolium repens*, petty spurge, American willowherb *Epilobium ciliatum*, common groundsel *Senecio vulgaris*, black medic, common dandelion, cleavers *Galium aparine* and hairy bittercress *Cardamine hirsuta*.

Similar species are also present scattered around the site, around the site boundaries where there are cracks in the hardstanding (Photograph 11) and buildings. Species present include water bent, annual meadow grass, common knotgrass, ribwort plantain, broadleaved plantain, ox-eye daisy, spear thistle *Cirsium vulgare*, black medic, American willowherb, snapdragon *Antirrhinum majus* and Canadian fleabane *Erigeron canadensis*.

3.2.6 J2.4 Fence

The northern and eastern survey boundary is demarcated mostly by palisade metal fencing (Photograph 5).

3.2.7 J2.5 Wall

There is a concrete retaining wall present on the eastern site boundary (Photograph 5).

3.2.8 J3.6 Buildings

External Inspection

There are a number of buildings within the survey boundary which have been labelled A – F for the purposes of this report (see Appendix 3 – Building Plan). Under the proposals, Buildings A – D and F will be demolished whilst Building E will be retained.

Building A is a portacabin currently used as a canteen for staff on site (see Photograph 12). The structure has a flat metal roof, with plastic barge boards on all aspects. On the northern aspect of the building, the barge board is slightly lifted (Photograph 13), however the gap was fully inspected and was found to be superficial. There are UPVC windows and a metal frame doorway present on the northern aspect of the building, which are well-sealed. The walls are rendered with pebble dash and are in good condition, with no potential roosting features (PRFs) identified.



Building B is a portacabin, similar in construction to Building A (see Photograph 14) but it is currently used as an office. The barge boards, windows and doorways are all well-sealed and no PRFs were noted. Overall, the building is in excellent condition and tightly sealed with no PRFs recorded.

Building C is a large warehouse currently used as a workshop / garage for the maintenance of vehicles (see Photograph 15). As such, the building is subject to high levels of disturbance from vehicle noise and members of staff. The roof is a shallow pitch and is constructed from corrugated metal with fibreglass skylights (see Photograph 16). There is bitumen felt barge boards on the gable ends of the building. A small number of gaps were noted where the felt was lifted, however these were inspected with a high powered torch and binoculars. The features were found to be unsuitable for roosting bats as they were generally superficial and exposed (Photograph 17). The walls of the building are constructed from corrugated metal sheets which overlap, but are tightly sealed. The large metal doorways on the northern aspect of the building are in good condition and were open at the time of the survey. The building is well-lit as there are flood-lights present on all aspects of the building, reducing its suitability for roosting bats.

Building D is a small out-building located immediately south of Building C (see Photograph 18). The roof is flat and constructed from corrugated metal with wooden barge boards on the southern and eastern aspects of the building. There are slight gaps behind the wooden barge boards, but these were fully inspected, and no evidence of roosting bats was recorded. The walls are constructed from breeze-block and there are UPVC windows present on the southern aspect and a UPVC door on the eastern aspect of the building. The walls, windows and doors are in excellent condition and tightly sealed. Furthermore, the building is subject to high levels of disturbance via large lorries frequently passing immediately adjacent to the southern aspect of the building and it is extremely well-lit from the surrounding floodlights.

Building E is a large warehouse building currently used as a workshop / garage for the maintenance of vehicles (see Photograph 19). As such, the building is subject to high levels of disturbance from vehicle noise and members of staff. The roof is a shallow pitch and is constructed from corrugated metal. There are metal barge boards present on the gable ends of the building which are in excellent condition. The walls are constructed from corrugated metal sheets which are also in excellent condition. The large doorways, which enable vehicular access, on the southern aspect of the building, are constructed from corrugated metal and are in excellent condition. There is also a metal door on the eastern aspect which is tightly sealed. The building is well-lit as there are flood-lights present on all aspects of the building, reducing its suitability for roosting bats.

Building F is a portacabin currently used as staff toilets (Photograph 20). The roof is flat and constructed from corrugated metal and the walls are also constructed from metal sheets. Overall, the building is in excellent condition with no PRFs noted.

No bat droppings or other field signs of bats were found during the external building inspections.

Internal inspection

Buildings A and B are similar in design and construction, see Photographs 21 and 22. There is no separate loft void present within the buildings and the internal walls and ceiling are constructed from plasterboard, which are in excellent condition. The buildings are subject to high levels of disturbance from staff and are extremely well lit. No PRFs were noted internally.



Building C has no separate loft void, and the roof is constructed from corrugated metal with steel beams, which are in excellent condition (Photograph 23). The building is extremely well lit due to the presence of open doorways and fiberglass skylights, reducing its suitability for roosting bats. The internal walls are also constructed from corrugated metal and no PRFs were identified. The building is currently used as a workshop / garage for the maintenance of vehicles and as such is subject to high levels of disturbance and noise.

Building D has no separate loft void and is currently used for storage (Photograph 24). The roof and walls are lined with wooden boards, which are tightly sealed. The windows and doorways are tightly sealed, and the building is well-lit.

Building E has no separate loft void, and the roof is constructed from corrugated metal with steel beams, which are in excellent condition (Photograph 25). The building is extremely well lit due to the presence of open doorways and fiberglass skylights, reducing its suitability for roosting bats. The internal walls are also constructed from corrugated metal and no PRFs were identified. The building is currently used as a workshop / garage for the maintenance of vehicles and as such is subject to high levels of disturbance and noise.

Building F has no separate loft void, and the roof and walls are constructed from metal sheets. No PRFs were noted, and the building is in excellent condition.

No bat field signs were found during the internal building inspections.

3.2.9 J5 Hardstanding

A large proportion of the site is hardstanding, which is a combination of concrete and a tarmacked car park.

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

There are no mapped ponds within 250m of the proposed development site. There are three mapped ponds within 500m of the proposed development site, the closest of which is located approximately 280m north-west of the development site boundary. Redwither Brook is unsuitable for use by great crested newts (GCNs) *Triturus cristatus* due to its high flow rate and lack of aquatic or emergent vegetation.

The terrestrial habitats on site which will be impacted by the proposed development (hardstanding, buildings, ephemeral / short perennial vegetation) are broadly unsuitable for GCNs. However, the areas of scrub and tall ruderal in the immediate vicinity of the proposed development boundary will provide some commuting and foraging opportunities, albeit limited due to their small size. There is potential refugia located approximately 25m east of the proposed development boundary, including rubble piles, that provide some limited hibernation opportunities (see Appendix 2 – Phase 1 habitat plan, Target Note (TN) 1 and Photograph

10). However, these will not be impacted by the proposed development and there are areas of higher quality habitat to the east of the site, with a large area of woodland located approximately 20m south-east of the site.

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 ponds are suitable GCN breeding pond, which may not be the case. Whilst the development site lies within Wales, a Natural Resources Wales equivalent is not available, and it is considered that the rapid risk assessment tool remains valid and provides an effective tool in determining the potential impacts of a development on GCNs.

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)	0.1 - 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
Maximum:		0.005
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 considers an offence is highly unlikely due to the size of the development area and proximity to ponds. Therefore, it is considered that potential impacts on GCNs are unlikely. Furthermore, taking into account that no suitable waterbodies are present within 250m and the poor quality of the habitats which will be impacted by the development, it is considered unlikely that other common amphibians will be present on site or within the immediate vicinity of the site.

3.3.2 Reptiles

The terrestrial habitats on site which will be impacted by the proposed development (hardstanding, buildings, ephemeral / short perennial vegetation) are broadly unsuitable for common reptile species. However, the areas of scrub, tall ruderal and Redwither Brook in the immediate vicinity will provide some commuting and foraging opportunities, albeit limited due to their small size.

There is potential refugia located approximately 25m east of the proposed development boundary, including rubble piles, that provide some limited hibernation opportunities (see Photograph 10). However, these will not be impacted by the proposed development and there are areas of higher quality habitat to the east of the site, with an area of woodland and rough grassland. These areas will provide higher quality opportunities for reptiles.



Therefore, taking into account the poor quality of the habitats which will be impacted by the development, it is considered unlikely that reptiles will be present on site or within the immediate vicinity of the site.

3.3.3 Badger

All land within 30m of the development site boundary was accessed and no setts or badger *Meles meles* field signs were recorded during the walkover survey.

No evidence of badgers was observed on site during the walkover survey. The habitats on site which will be impacted by the proposed development (hardstanding, buildings, ephemeral / short perennial vegetation) are unsuitable to support badger setts. The site is flat and dominated by areas of hardstanding. Furthermore, the site is extremely well-lit and subject to high levels of vehicular disturbance, reducing its suitability to support badgers.

The immediate surrounding area contains areas of scrub and tall ruderal which are broadly suitable, but their small size reduces their suitability for badgers. Furthermore, the areas of woodland and grassland to the east of the site are of higher quality and will provide better quality sett building and foraging opportunities for badgers.

Therefore, badgers are not considered to be present on site or within the immediate vicinity of the site.

3.3.4 Bats

There are six buildings on site, five of which will be demolished under the current development proposals. All buildings on site have been assessed as having negligible potential to support roosting bats, due to the lack of PRFs present, high levels of disturbance via noise and vibration, high levels of external lighting and poor quality of the habitat in the immediate surrounding area, see Section 3.2.8 for detailed building descriptions.

In addition to the buildings on site, there are several mature trees present within the survey boundary, all of which were subject to a full ground level tree assessment as part of the walkover survey. All trees are considered to have negligible potential to support roosting bats due to an absence of PRFs. Furthermore, the development proposals are not anticipated to involve any tree felling or arboricultural works.

The habitats within the proposed development boundary almost entirely comprise hardstanding, buildings and ephemeral / short perennial vegetation. These habitats provide very low-quality foraging and commuting habitat for bats. The areas of scrub, watercourse and trees within the immediate vicinity of the development boundary will provide higher quality habitat for bats, however these features will not be impacted by the proposals.

Within the immediate surrounding area, habitats to the north, east and west are of low quality as they are urban with commercial buildings, large areas of hardstanding, well-lit roads and small areas of greenspace. However, there are small corridors of woodland throughout the industrial estate connecting the pockets of green space. Habitats to the south are of higher quality with large blocks of woodland, watercourses and hedge-lined pasture fields present. These habitats will provide a variety of insects on which bats can forage. Roosting opportunities are also moderate due to the presence of woodland, numerous scattered mature

trees and scattered buildings. Connectivity within the local area is moderate due to the presence of green corridors and watercourses.

In the wider surrounding area, beyond the industrial estate, the landscape is a mosaic of hedge-lined fields, villages and blocks of woodland, intersected by unlit B-roads and country lanes. These habitats will provide high quality foraging, commuting and roosting opportunities for bats in the local area.

3.3.5 Hazel dormouse

The habitats which will be impacted by the proposed development (hardstanding, buildings and ephemeral / short perennial) are unsuitable for dormice *Muscardinus avellanarius*. No woodland or hedgerow habitats are present and the area of scrub within the survey area is relatively small and isolated from other nearby suitable habitat. The nearby areas of woodland to the east of the site will provide higher quality habitat for dormice. Hazel dormice are not considered to be present on site and will not be impacted by the proposed development.

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*, woodpigeon *Columba palumbus*, robin *Erithacus rubecula*, blackbird *Turdus merula*, magpie *Pica pica* and long-tailed tit *Aegithalos caudatus*. Black-headed gull *Chroicocephalus ridibundus* was also recorded flying over but not using the site or the adjacent offsite habitats.

Scattered trees and areas of dense scrub will all provide suitable nesting habitat for breeding birds in the summer, but these habitats will not be impacted by the proposed development. The buildings which will be impacted by the proposed development have some limited potential to provide suitable nesting habitat for breeding birds in summer, although the buildings are subject to high levels of disturbance, noise and vibration which reduces their suitability for use by nesting birds.

3.3.7 Trees

There are no tree species on site which are afforded statutory protection, however individual trees may be subject to a Tree Preservation Order (TPO).

3.3.8 Hedgerows

There are no hedgerows present within the survey boundary or proposed development boundary.

3.3.9 Plant communities

No plant communities or individual species were recorded on site which are afforded statutory protection in their own right.



3.3.10 Invasive species

Himalayan balsam was recorded within the survey boundary; however the plants are located approximately 60m south-east of the proposed development boundary (see Appendix 2 – Phase 1 habitat plan, TN 2). As such, the plants will not be impacted by the proposed development.

3.3.11 Otter

Redwither Brook is generally unsuitable for otter *Lutra lutra* due to the lack of fish and concrete base and banks which will limit holt making opportunities. Furthermore, no evidence was found of otters and certain features of the bank, such as the gabion baskets, did not contain any spraints.

3.3.12 Water vole

Redwither Brook located approximately 5m from the proposed development boundary is generally unsuitable for water vole *Arvicola amphibius* due to the shallow water, high flow rate and scrub vegetation which dominates most of the banks.

3.3.13 White-clawed crayfish

Redwither Brook located approximately 5m from the proposed development boundary is generally unsuitable for white-clawed crayfish *Austropotamobius pallipes* due to the shallow water, high flow rate and absence of suitable refugia.

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 River Dee / Afon Dyfrdwy (SSSI) and River Dee & Bala Lake / Afon Dyfrdwy a Llyn Tegin (SAC), which are located approximately 2.8km east of the proposed development site. The site is hydrologically linked to The River Dee / Afon Dyfrdwy via Redwither Brook. However, given the distances from site and the scale of development, it is considered unlikely that the proposed development will have any direct or indirect impact on this or any other local designated sites.

Although impacts on statutorily designated sites are considered to be negligible, it is recommended, as best practice, that specific procedures and control measures are implemented, such as those listed in pollution prevention guidance issued by the Environment Agency. These measures will ensure that there is no risk of input into Redwither Brook, which is hydrologically linked to River Dee / Afon Dyfrdwy SSSI and River Dee / Afon Dyfrdwy a Llyn Tegin SAC. These measures should be set out by the contractors prior to the commencement of works and will need to be agreed with the 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.

A buffer zone of 5m should also be retained along the length of the watercourse to protect it from disturbance. The buffer zone should be adequately fenced off and no vegetation clearance or other construction activities should take place within it.

Natural England request that they are consulted on any industrial or agricultural development that could cause air pollution. This includes industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t. The proposed development will not result in the installation of livestock or poultry units, slurry lagoons or manure stores, therefore the proposed development is considered unlikely to impact SSSI's which are impacted via air pollution.

4.1.2 Trees

No trees are present within the proposed development boundary but there are several trees present within the survey area. The development proposals are not anticipated to involve any tree felling or arboricultural works, but one mature oak tree is located immediately adjacent to the proposed development boundary, see Appendix 2 – Phase 1 habitat plan, TN 3.



Construction impacts

Site clearance and setting out may result in damage to the mature oak, which is to be retained.

Mitigation

A RPA should be established and implemented around the mature oak tree, which will be retained. This area should be adequately protected by appropriately designed protective barriers and ground protection throughout the entire development process.

Compensation

If any trees 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 Watercourse

Redwither Brook is located approximately 5m south of the proposed development boundary.

Construction impacts

Construction works could result in disturbance and / or pollution to Redwither Brook.

Mitigation

The pollution prevention measures detailed in section 4.1.1 will serve to protect Redwither Brook from pollution / disturbance during the development.

Operational impacts

No operational impacts are envisaged.

4.2 Species

4.2.1 Bats

All buildings and trees on site are considered to offer negligible bat roosting potential and do not require any further surveys. However, the areas of dense scrub and Redwither Brook located immediately south of the proposed development boundary provide some foraging and commuting opportunities for bats.

Construction impacts

No construction impacts are envisaged.

Enhancements

The provision of bat boxes as part of the development proposals would increase the roosting opportunities for bats on site and would also increase the ecological value of the site. 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 4 and 6 metres on a southerly aspect.

The bat boxes affixed to, or installed into the external walls of buildings should be installed just below the eaves / roof height.

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

Operational impacts

Inappropriate external lighting could result in the severing of commuting corridors used by bats as well as the loss of foraging habitats.

Mitigation

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, dense scrub and Redwither Brook is minimised, see Appendix 6 – External Lighting Guidance for further information. This may require the use of cowlings or relocation of the bat box or lighting.

4.2.2 Birds

The buildings which will be impacted by the proposed development have some limited potential to provide suitable nesting habitat for breeding birds in summer, although the buildings are subject to high levels of disturbance, noise and vibration which reduces their suitability for use by nesting birds

Construction impacts

Demolition works 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

Demolition 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.



Enhancement

The site currently offers limited opportunities for nesting birds. The quality of nesting habitat on site could be enhanced through the provision of bird nest boxes. Bird boxes that could be used on site include:

- Schwegler 1B nest box (affixed to trees)
- Schwegler 1SP sparrow terrace (affixed to building below the eaves)
- Schwegler 2H robin nest box (affixed to trees)
- Schwegler 3S starling nest box (affixed to trees or buildings)
- Schwegler 1MR Avianex box (affixed to trees or buildings)

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.

4.2.3 Invasive species

Himalayan balsam was recorded within the survey boundary, the plants are located approximately 60m south-east of the proposed development boundary (see Appendix 2 – Phase 1 habitat plan, TN 2).

Construction impacts

Himalayan balsam is listed under Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019. The plants are located approximately 60m south-east of the proposed development boundary (see Appendix 2 – Phase 1 habitat plan, TN 2) and as such, the plants will not be impacted by the proposed development.

However, due to the known presence of invasive species within the immediate surrounding area, there is potential for Himalayan balsam to colonise the site during the works or following the completion of the works.

Mitigation

It is recommended that all site operatives receive training in invasive species identification and best practice procedures for avoidance of spreading any species throughout the site. In the event any invasive species are present on site this will enable the site operatives to quickly react and eradicate any plants.

Enhancement

Himalayan balsam out competes native plants as it colonises quickly and creates tall dense stands shading any plants below. It also produces much more nectar and therefore attracts pollinating insects, possibly to the detriment of native flowering plants. It has no natural forms of control in Britain. The development presents an opportunity to eradicate the invasive species and enhance nearby habitats via the removal of invasive species.



Himalayan balsam can be controlled by mechanical removal if no seeds are present or, if this is not possible, the Himalayan balsam should be sprayed using an appropriate herbicide, at an appropriate concentration by a competent person.

Any plant material or contaminated soil that is pulled will need to be removed from site and disposed of at a licenced landfill site as controlled waste. Alternatively, materials can be kept on site and burnt.



5 CONCLUSION

The proposed development site has an area of approximately 0.26ha and is dominated by hardstanding and buildings. There are small areas of ephemeral / short perennial vegetation and tall ruderal present within the development site boundary. Furthermore, Redwither Brook and small areas of dense scrub lie within the immediate vicinity of the proposed development site.

The preliminary ecological appraisal has highlighted potential issues with the following ecological receptors on or adjacent to site: bats, birds, designated sites / watercourse, invasive species and trees. 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 provision of bat and bird nest boxes on site will provide improved roosting and nesting opportunities into the long-term future of the site. The eradication of Himalayan Balsam, which is within the survey boundary but outside the proposed development boundary, will benefit nearby habitats as it out competes native plants as it colonises quickly and creates tall dense stands shading any plants below and has no natural forms of control in Britain.



6 REFERENCES

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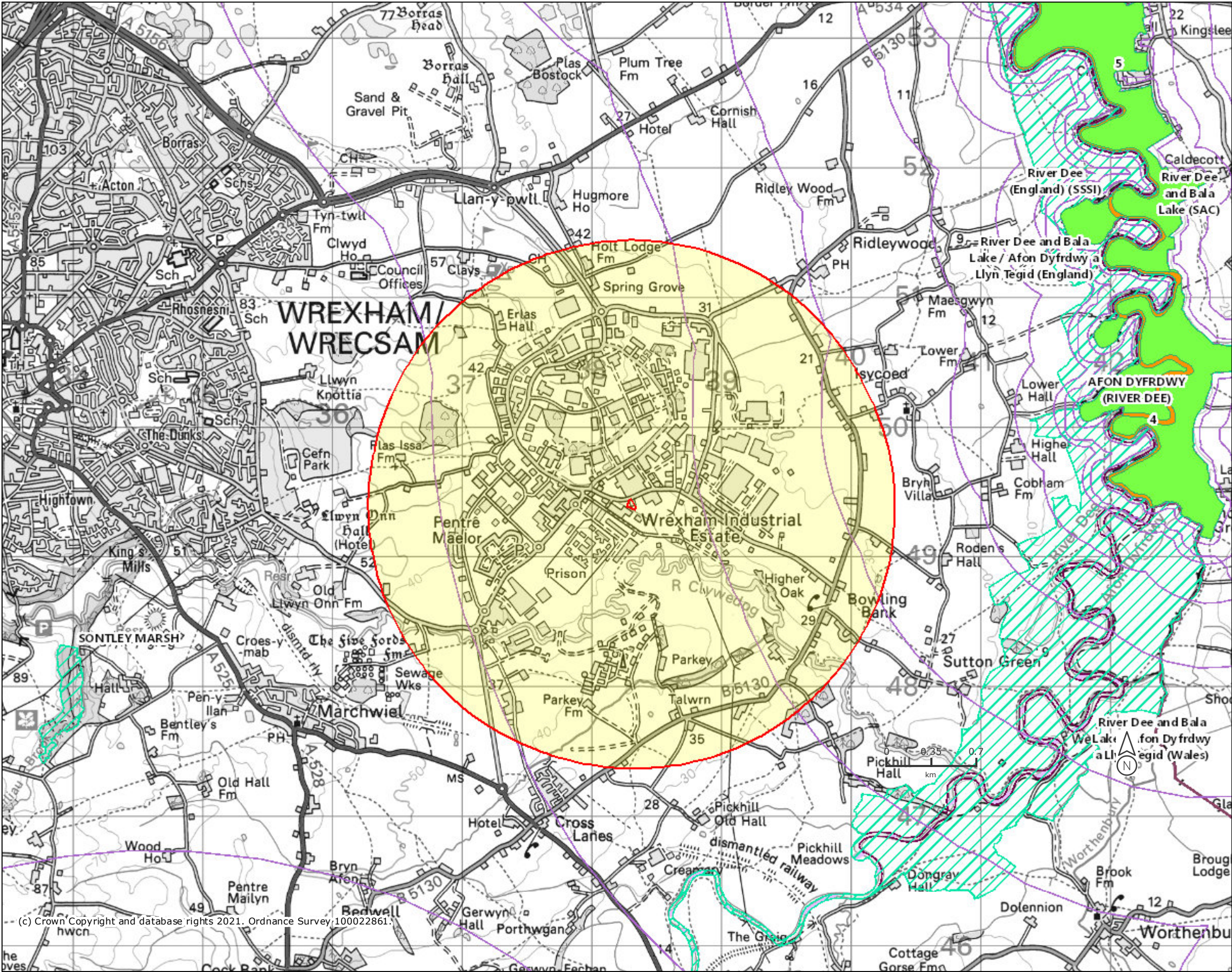
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APPENDICES

Appendix 1 – Desk Study



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)

Biosphere Reserves (England)

Biosphere Reserves (Wales)

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xmax = 343200
ymax = 352000

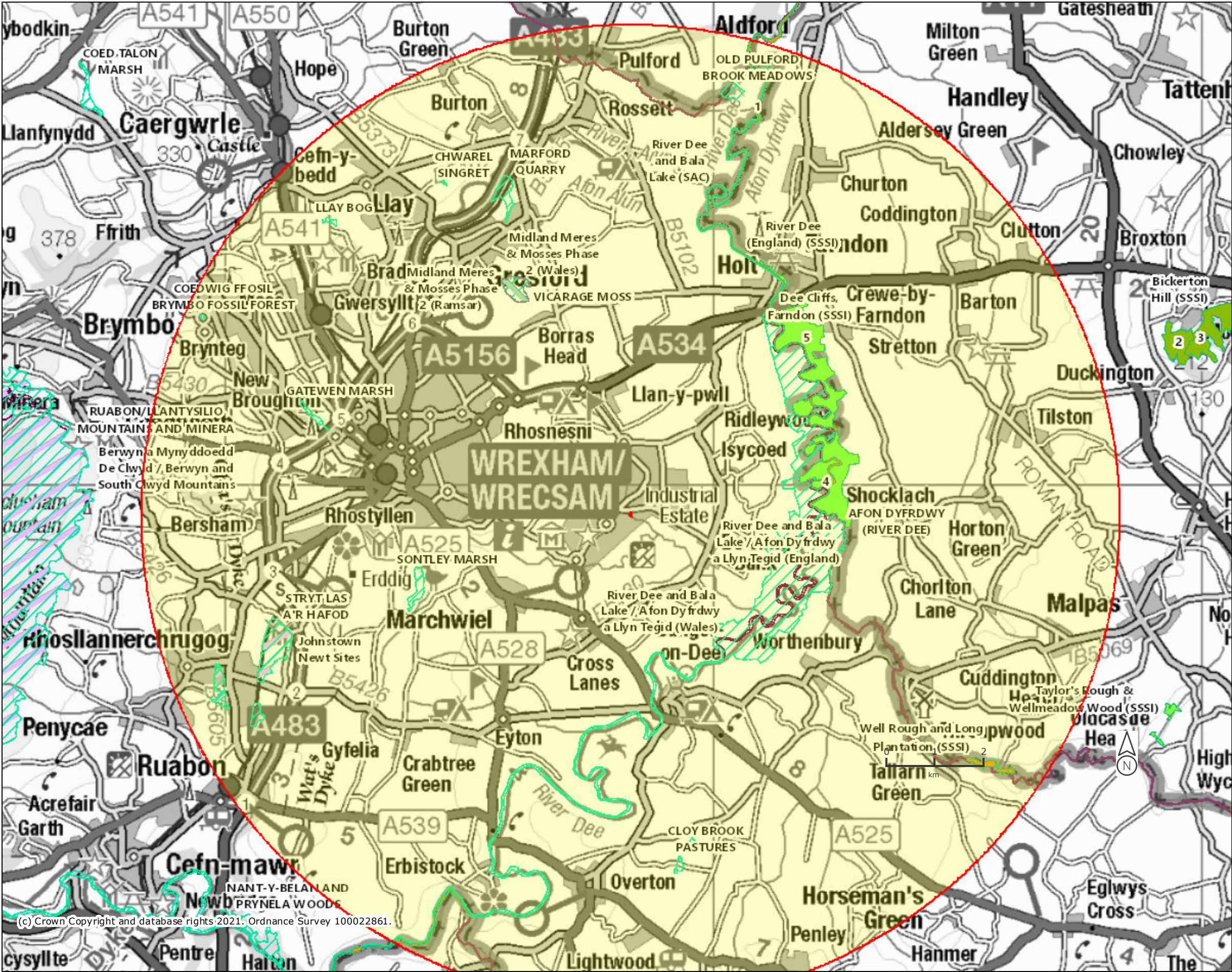
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km

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Statutorily Protected Sites within 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)
- Biosphere Reserves (England)
- Biosphere Reserves (Wales)

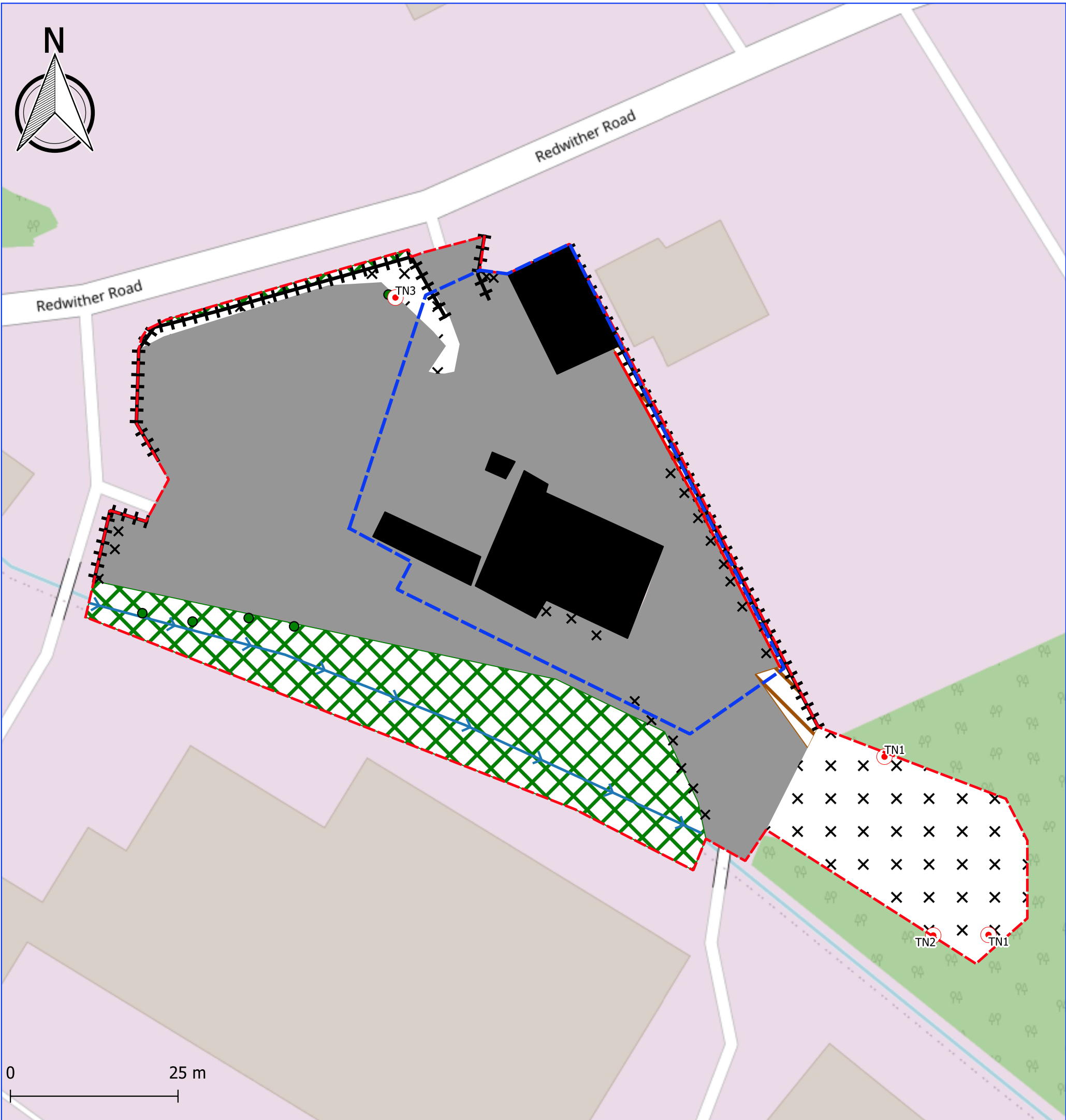
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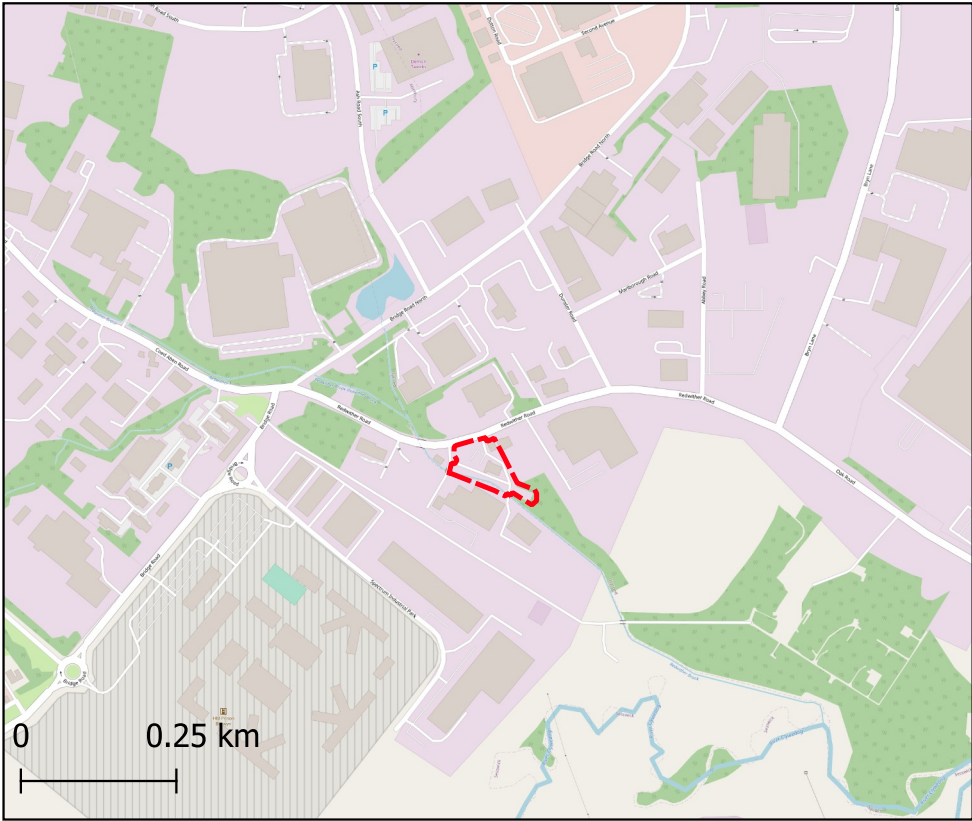
Appendix 2 – Phase 1 Habitat Plan

- Target Note 1 - Rubble piles
- Target Note 2 - Himalayan balsam
- Target Note 3 - Mature oak tree



Preliminary Ecological Appraisal

Site: ASH Recycling Facility
NGR: (SJ) 338364 349238
Author: Emily Clark
Date: 24/09/2021



KEY:

- | | |
|----------------------------------|----------------------------------|
| Proposed development boundary | J1.3 - Ephemeral/short perennial |
| Survey boundary | J2.4 Fence |
| A2.1 - Scrub - dense/continuous | J2.5 Wall |
| A3.1 Broadleaved scattered trees | J3.6 - Buildings |
| C3.1 - Tall ruderal | J5 - Hardstanding |
| G2 - Running water | Target notes |

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Appendix 3 – Building Plan



ASH Recycling Facility, Wrexham

Building Plan

— Building





Appendix 4 – Aerial Photographs



ASH Recycling Facility, Wrexham

Close aerial photograph

— Survey boundary



ASH Recycling Facility, Wrexham

Wide aerial photograph



Site location



Appendix 5 – Photographs



Photograph 1 – Looking south-east across site, view of dense scrub.



Photograph 2 – View of dense scrub located immediately south of the proposed development boundary.



Photograph 3 – Looking north-west across stie, view of scattered trees within dense scrub to the south of the site.



Photograph 4 – View of mature oak within the northern section of the site.



Photograph 5 – View of tall ruderal along the north-eastern boundary of the site.



Photograph 6 – View of Redwither Brook, looking west.



Photograph 7 – View of watercourse and gabion baskets.



Photograph 8 – View of culvert on the south-eastern survey boundary of Redwither Brook.



Photograph 9 – View of ephemeral / short perennial vegetation within the south-eastern section of the site.



Photograph 10 -View of rubble piles and ephemeral / short perennial vegetation within the south-eastern section of the site.



Photograph 11 – View of ephemeral / short perennial vegetation within the northern section of the site.



Photograph 12 – Building A viewed from west



Photograph 13 – Lifted barge board on the northern aspect of Building A



Photograph 14 – Western aspect of Building B.



Photograph 15 – Northern aspect of Building C.



Photograph 16 – View of roof on Building C.



Photograph 17 – Eastern aspect of Building C.



Photograph 18 – Southern aspect of Building D.



Photograph 19 – Southern and eastern aspects of Building E.



Photograph 20 – Western aspect of Building F.



Photograph 21 – Internal view of Building A.



Photograph 22 – Internal view of Building B.



Photograph 23 – Internal view of Building C.



Photograph 24 – Internal view of Building D.



Photograph 25 – Internal view of Building E.



Appendix 6 – 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.



Appendix 7 – 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

Great crested newts

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.