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WATER VOLE & OTTER SURVEY

At

The Oaks
Wrexham Industrial Estate
LL13 9RG

NGR: (SJ) 38653 49314

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EXECUTIVE SUMMARY

A water vole *Arvicola amphibius* and otter *Lutra lutra* survey was conducted at The Oaks, Wrexham Industrial Estate by United Environmental Services (UES) Ltd on August 14th 2025.

The objective of this survey was to evaluate the suitability of habitats both on-site and in the immediate surrounding area for water vole and otter. The assessment was informed by a desk study, which included a search of protected species records and a review of previous survey data relevant to the site and its environs.

A planning application has been submitted (reference P/2025/0430) for the creation of a Green Eco-Heritage Zone and the construction of a single B8 warehouse unit with integral offices, new vehicular access, car and HGV parking, servicing and storage, landscaping, heritage and ecology mitigation and ancillary development.

Two watercourses are present at the site boundaries that could be used by otters and water voles, the Redwither Brook and the River Clywedog.

The habitats present on site offer extremely limited potential for supporting water vole. Due to the absence of local records, the low suitability of available habitat, and the lack of evidence observed during the surveys, water voles are considered to be absent from both the development site and the surrounding area.

The watercourses on site offer limited suitability for otters, with the River Clywedog providing some foraging potential and the Redwither Brook lacking sufficient depth or prey. While riparian vegetation may offer occasional shelter, the absence of suitable bank-side hollows and sufficiently deep roost system limits long-term resting or breeding opportunities. Records and field evidence confirm otter presence in the wider area, including a carcass found on site, but survey findings suggest only low-frequency, transitory use of the site for commuting or opportunistic foraging, with minimal likelihood of sustained occupation.

As water voles are not considered to be present on site, no specific mitigation or compensation measures relating to water voles is required in order for the development to proceed.

The proposed development avoids direct impact to both watercourses, with a minimum 10m buffer zone retained. As such, direct impacts to otters and their habitats are not anticipated. However, there remains a low risk of indirect disturbance during construction, including noise, vibration, and increased activity within proximity of the watercourses. As such, the mitigation measures detailed within Section 4.3.2 are to be implemented.

To minimise impacts on otters and other nocturnal wildlife, any external lighting installed will be designed to be wildlife friendly and will include the use of directional luminaires, shielding, and timing controls where feasible, ensuring light spill onto the watercourses is reduced to the lowest practicable level.

This report should be read in conjunction with appendices 1 to 4, which provide visual representations of the survey results and statutory and planning context.

1 INTRODUCTION

1.1 Author, surveyors, qualifications and scope of study area

This report is written by Harry Fox BSc MRes UES Graduate Ecologist. Surveyors included:

- Heather Tewnion, UES Field Ecologist
- Josh Howard, UES Graduate Ecologist

The report provides an assessment of the potential impacts on water vole and otter associated with the proposed development at The Oaks, Wrexham Industrial Estate.

All surveyors have the knowledge, skills and experience identified within CIEEM's "Competencies for Species Survey: Water Vole" (2013) and "Competencies for Species Survey: Eurasian otter" (2013), or were under the supervision of a surveyor with the required competencies.

This report has been verified by Tom Kenwright BSc MSc, ACIEEM, UES Senior Ecologist.

1.2 Survey objectives

UES was commissioned in August 2025 to conduct site surveys which include the following activities:

- Inspection of the Redwither Brook and River Clywedog at the boundaries of the development site, to search for field signs of water vole and otter

- To assess the suitability of the habitats on site and within the immediate vicinity of the site for use by water vole and otter

1.3 Proposed development

A planning application has been submitted (reference P/2025/0430) for the creation of a Green Eco-Heritage Zone and the construction of a single B8 warehouse unit with integral offices, new vehicular access, car and HGV parking, servicing and storage, landscaping, heritage and ecology mitigation and ancillary development.

1.4 Structure of the report

This report sets out the methodology, results, recommendations and compensation measures in relation to a specific water vole and otter survey. Recommendations are in line with statutory legislation and planning policy objectives.

The report should be read in conjunction with appendices 1 to 4, which provide visual representations of the survey results and statutory and planning context.

2 METHODOLOGY

2.1 Desk study

As part of the Preliminary Ecological Appraisal (PEA) undertaken by UES in November 2022, a search for protected sites and records of protected or otherwise notable species within a 2km search radius around the proposed development site was obtained from COFNOD – North Wales Environmental Information Service. This included a search for records of both otter and water vole.

2.2 Field survey

A detailed otter and water vole survey of the watercourses at the site boundary and their adjacent habitats was conducted on the 14th of August by Josh Howard and Heather Tewnion. The survey covered the sections of Redwither Brook and the River Clywedog that border the site boundary.

The survey was conducted in suitable weather conditions and was not undertaken following a period of prolonged rainfall, which can wash away field signs. The habitats were assessed for their potential to support water voles and otters and an inspection was carried out to search for evidence of both species.

Additional evidence of otter activity was observed by UES Senior Ecologist Tom Kenwright and UES Sub-contractor Bethan Beeston on the 28th August 2025 during an unrelated ecology survey.

2.2.1 Water vole

A detailed inspection of the watercourses was carried out from the banks and within the watercourses where possible. Water vole field signs were searched for during the inspection, such as:

- Latrines / dropping piles
- Feeding stations or vegetation piles (fresh and old)
- Burrows (sometimes also with “lawns” associated with them)
- Paths and runs in vegetation or at the water’s edge
- Footprints

2.2.2 Otter

Along the watercourses, any bankside ledges, bridges or other structures were searched for otter field signs and assessed for their suitability to support otters. Any otter field signs were mapped and photographed. Field signs searched for included:

- Holts – places / structures used by otter on a ‘permanent’ basis
- Lying up areas / couches - ‘temporary’ areas used by otters for resting, grooming or feeding whilst above ground
- Spraints – otter droppings, usually found on exposed rocks, logs, ledges or other bankside structures
- Feeding remains - partially eaten fish, fish scales, eggs, frogs, piles of mussel shells or crayfish remains

- Paths and runs in vegetation or at the water's edge
- Slides – established entrances into a watercourse
- Footprints

2.3 Survey limitations

The development site experienced a period of prolonged warm weather throughout the summer of 2025, which may have resulted in lower water levels than usual. However, this is not deemed to be a significant limitation to the results of the survey and may have led to more exposed bankside ledges or areas of mud which displayed footprints of riparian species.

Small sporadic sections of the watercourse could not be accessed due to the density of scrub. Additionally, some sections of the channel and the far/offsite bank could not be accessed due to deep water and/or dense vegetation, however, they could be inspected visually using binoculars.

These are not considered to be significant limitations; however, they have been considered when preparing the evaluation and recommendations section of this report.

3 RESULTS

3.1 Desk study

3.1.1 Records search

The protected species records search returned no records of water vole.

Thirteen records of otter were returned from within 2km of the proposed development site. With the exception of a shot otter from 1945, all records are located along the River Clywedog or the connected Redwither Brook. The most recent record dates from 2019 and the closest record is located approximately 360m from the site boundary.

3.2 Habitat assessment

Two watercourses are present at the site boundaries; the River Clywedog along part of the southern boundary and Redwither Brook along the south-western boundary.

3.2.1 Redwither Brook

Redwither Brook flows from north-west to south-east through a predominantly linear, modified channel before merging with a more natural watercourse that ultimately joins the River Clywedog. Within the western portion of the site, the brook is partially bordered by young alder (*Alnus glutinosa*) and willow (*Salix* spp.) woodland. However, this woodland is absent from the central section, which is dominated by dense stands of tall ruderal vegetation and encroaching scrub. These central and western sections are canalised, with 45° concrete banks and a shallow water depth ranging from approximately 5–20 cm.

A small bridge crosses the brook at the south-western corner of the site boundary, carrying a hardstanding path that emanates offsite from Bridge Road and bisects the site east–west. East of the bridge, the brook adopts a more natural bank profile and is flanked by a narrow strip of mature riparian woodland interspersed with tall ruderal vegetation. This section of the brook has a slower flow rate and increased sedimentation. Bankside vegetation is generally dense in this section, however parts are dominated by bramble or Himalayan balsam *Impatiens glandulifera*, whilst others are predominantly bare.

Water vole

The canalised western and central sections of the brook are unsuitable for water vole burrowing due to the hard-engineered banks and limited marginal vegetation. Vegetation in this area is restricted to overhanging scrub and trees, with tall ruderal species, grassland and woodland understory species confined to the tops of the concrete banks and isolated from the waters edge. These conditions offer minimal foraging opportunities and are considered broadly unsuitable for water vole use.

In contrast, the eastern section provides improved habitat conditions. The natural bank structure and increased diversity of marginal vegetation offer some potential for burrowing and foraging, although suitability remains moderate due to the narrowness of the riparian corridor and dominance of bramble and invasive species in parts.

Otters

The western section and central sections of the brook are considered broadly unsuitable for otters. The canalised banks, shallow water, and immature scrub and woodland offer limited sheltering or foraging opportunities. The eastern section, however, presents more favourable conditions. The deeper water (up to ~1 m), natural bank profile, and the likely increased abundance of fish, aquatic invertebrates, and waterfowl such as moorhen (*Gallinula chloropus*) increase its potential to support foraging otters. Sheltering opportunities are present within the bankside vegetation, particularly beneath overhanging trees and scrub. However, no suitable breeding or long-term holt opportunities were noted within bankside hollows or cavities within tree roost systems.

3.2.2 River Clywedog

The River Clywedog flows west to east along the southern boundary of the site, meandering gently and briefly dividing into two channels around a small, vegetated island before rejoining in the south-eastern corner. The banks are mostly shallow (~45°) and shaded by a narrow strip of mature riparian woodland. Small sections of concrete and steep-sided engineered banks are present. Channel depth ranges from approximately 0.5 m to 1.5 m, with a silty substrate and moderate flow.

Bankside vegetation is generally dense in this section, however parts are dominated by bramble or Himalayan balsam, whilst others are predominantly bare.

Water voles

The natural bank profile and presence of marginal vegetation offer some potential for water vole use, particularly for foraging. However, suitability remains moderate due to the narrowness of the riparian corridor, limited bank structure, and dominance of bramble and invasive species. Burrowing opportunities are present, but are limited as the majority of the banks are shallow and unsuitable.

Otters

The River Clywedog provides suitable foraging habitat for otters, with sufficient channel depth and prey availability likely to include fish, aquatic invertebrates, and waterfowl. Sheltering opportunities are present within the bankside vegetation, particularly beneath overhanging trees and scrub. However, no suitable breeding or long-term holt opportunities were noted within bankside hollows or cavities within tree roost systems.

3.3 Survey results

No evidence of water voles was observed along either watercourse. The only prints observed on the banks were from terrestrial mammals and waterfowl.

During the field survey, a small collection of potential otter spraints was observed on a small section of exposed bank along the western section of Redwither Brook (see Photograph 8 and Target Note 1). This section of bank was inaccessible; however they could be viewed using binoculars and a close-zoom digital camera. If these are otter spraints, they are not fresh and are at least a couple of days old and partially degraded.

Additionally, during a later unrelated ecology survey on the 28th August 2025, the remains of an otter carcass was observed within the western section of the site (see Photograph 9 and Target Note 2). The carcass was found approximately 2-3m from the water's edge, within the area of woodland that borders the western section of the Redwither Brook. No other evidence of otter activity was observed within the vicinity despite a search.

No other evidence of otter activity has been observed on site, despite a comprehensive suite of ecology surveys being undertaken of the site across 2022-2025.

4 EVALUATION AND RECOMMENDATIONS

4.1 Evaluation of results

4.1.1 Water vole

In summary, the habitats on site offer extremely limited potential for supporting water vole. The on-site watercourses are predominantly over-shaded, with banks heavily dominated by scrub and Himalayan balsam, offering some, albeit sub-optimal foraging opportunities. The banks are mostly shallow and sandy or formed of steep concrete, leaving very small sections of suitable burrowing opportunities. No field signs of water vole, such as burrows, feeding remains, or latrines, were identified during the survey or during any of the other ecological surveys undertaken of the site across 2022-2025.

Given the lack of water vole records in the local area, together with the survey findings, it is considered that water voles are not present on site, or within the immediate vicinity of the site.

4.1.2 Otter

The watercourses on site are broadly suitable for use by otters. The Redwither Brook lacks sufficient depth to support notable fish populations or other prey species, however the River Clywedog provide some foraging opportunities. The riparian woodland, bankside trees and dense scrub may provide sheltered resting opportunities, however breeding and long-term holt opportunities are limited by the absence of suitable bank-side hollows and cavities beneath tree root systems.

Otters are known to use offsite sections of both watercourses for foraging or commuting, as evidenced by the results of the record search. Otters are confirmed to be present on site or within the immediate vicinity of the site, as evidenced by the otter carcass observed on site. There remains some potential that the otter carcass was dragged onto the site by a predator or scavenger, however even if this was the case, it will have likely originated from the immediate vicinity of the site and from an otter using these watercourses, as there are no other suitable watercourses within the local area.

Given the suitability of the watercourses, the limited foraging and sheltering opportunities and the limited evidence of otter activity observed on site during the surveys, it is considered that otters are using the watercourses on site for foraging and/or commuting in a limited and transitory capacity, most likely as low-frequency commuting corridors for otters traversing through the wider landscape. Otters are not considered to be using the habitats on site or immediately adjacent to the site for long-term resting or breeding and have limited capacity to do so in the future.

4.2 Mitigation and compensation measures

4.2.1 Water vole

As water voles are not considered to be present on site, no specific mitigation or compensation measures relating to water voles is required in order for the development to proceed. Additionally, the proposed development has been sited so that it is located away from the watercourses, with only a small section located over 10m from the Redwither Brook at its

closest point. As such, there is considered to be no risk of harm in the unlikely event that a small population of water voles is using the site, or water voles colonise the site in future.

4.2.2 Otter

The proposed development avoids direct impact to both watercourses, with a minimum 10m buffer zone retained. As such, direct impacts to otters or their habitats are not anticipated. However, there remains a low risk of indirect disturbance during construction, including noise, vibration, and increased activity within proximity of the watercourses.

Pollution prevention protocols within the Construction Environmental Management Plan (CEMP) that has been prepared for the site will reduce the risk of adverse impacts of pollution of the watercourse to the lowest practicable level. Furthermore, measures to limit indirect disturbance such as fencing, signage and restricted working hours will be detailed within the CEMP:Biodiversity & Ecological Design Strategy (EDS) that is being prepared for the site. These provisions will safeguard riparian habitats and associated species throughout the construction phase. In the unlikely event that the proposals change and any works are to be undertaken within 10m of either watercourse, a pre-commencement check will need to be undertaken of the areas to be impacted, to ensure that no otter holts are present.

To minimise impacts on otters and other nocturnal wildlife, any external lighting installed will be designed to be wildlife friendly and will include the use of directional luminaires, shielding, and timing controls where feasible, ensuring light spill onto the watercourses is reduced to the lowest practicable level.

5 CONCLUSION

The proposed development site offers extremely limited suitability for water vole. No evidence water vole activity has been observed on site, which aligns with the absence of local records. It is therefore considered that water voles are likely absent from the site, and no specific mitigation measures are required.

The habitats within the site do however provide limited opportunities for otter foraging, commuting and temporary sheltering. Potential spraints and an otter carcass have been observed on site. When considered alongside sporadic local records, this suggests that the site is likely used on an occasional basis by commuting otters, with some potential foraging and temporary sheltering activity.

The distance between the proposed development and the watercourses on site significantly limited the risk of adverse impacts to otter. The mitigation measures detailed in Section 4 are designed to reduce this risk to the lowest practicable level and to ensure that otters are not adversely impacted by the proposed development.

6 REFERENCES

Chartered Institute of Ecology and Environmental Management (2013). *Competencies for Species Survey: Eurasian otter*.

Chartered Institute of Ecology and Environmental Management (2013). *Competencies for Species Survey: Water vole*.

Strachan. R, Moorhouse. T & Gelling. M (2011). *Water vole conservation handbook – 3rd edition.* Wildlife conservation research unit.

Welsh Government (2024). *Planning Policy Wales: Edition 12*. Cardiff: Welsh Government

APPENDICES

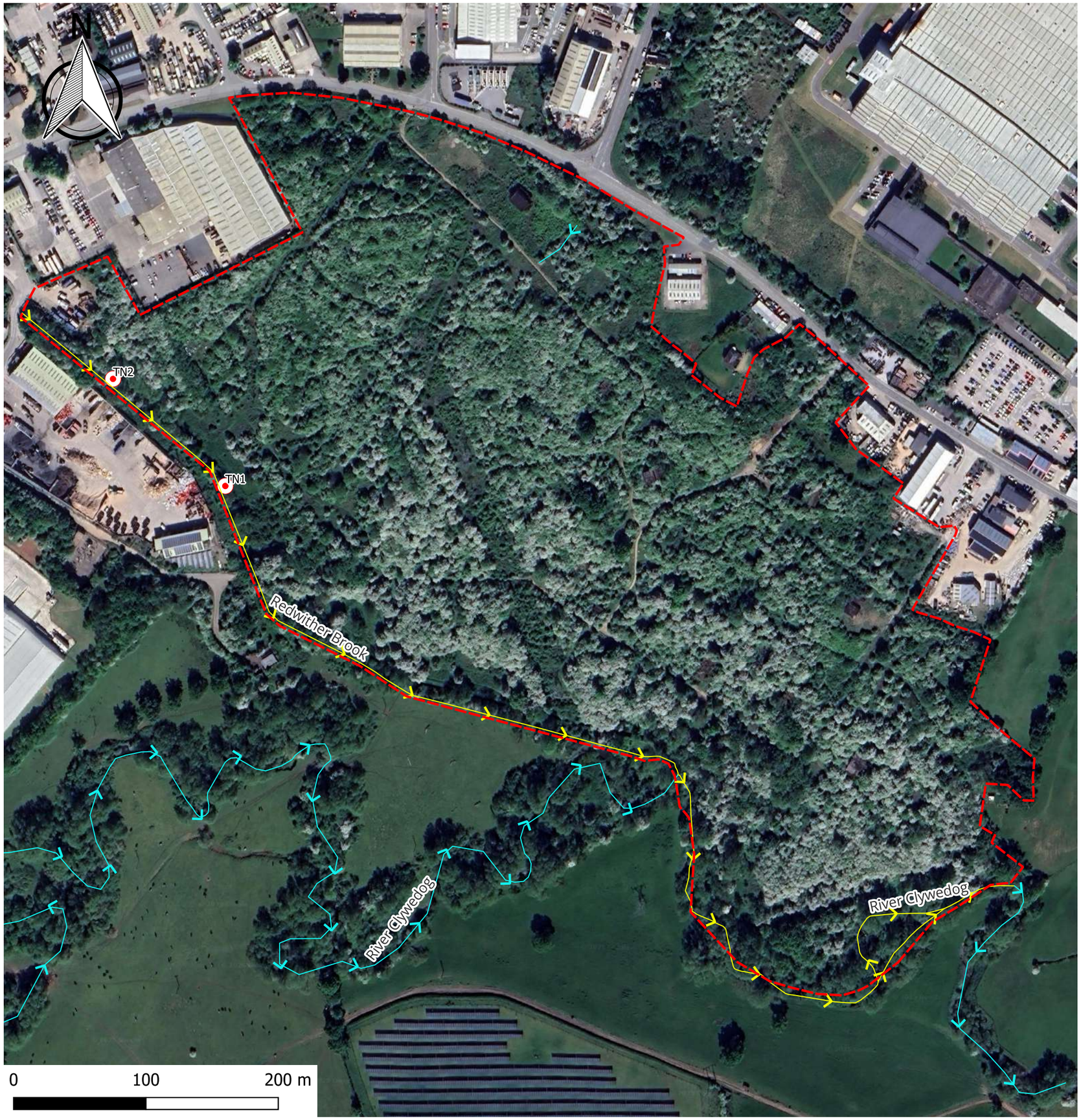
Appendix 1 – Site Plan

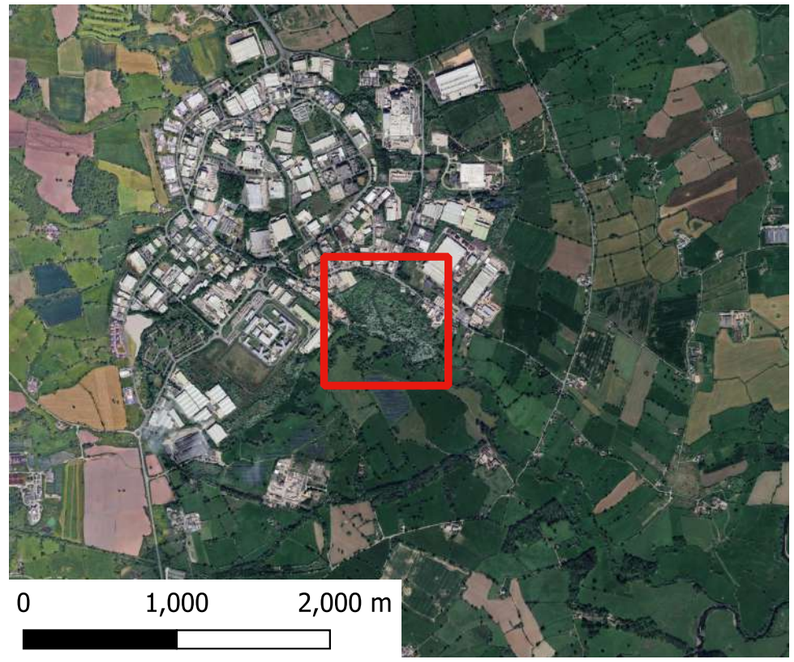
Target Note 1 – Potential degraded otter spraint

Target Note 2 – Otter carcass

Site Plan

Site: The Oaks, Wrexham Industrial Estate
NGR: (SJ) 38653 49314
Author: Harry Fox
Date: 02/09/2025





Key

- Target notes
- Surveyed sections
- Watercourse
- Site Boundary

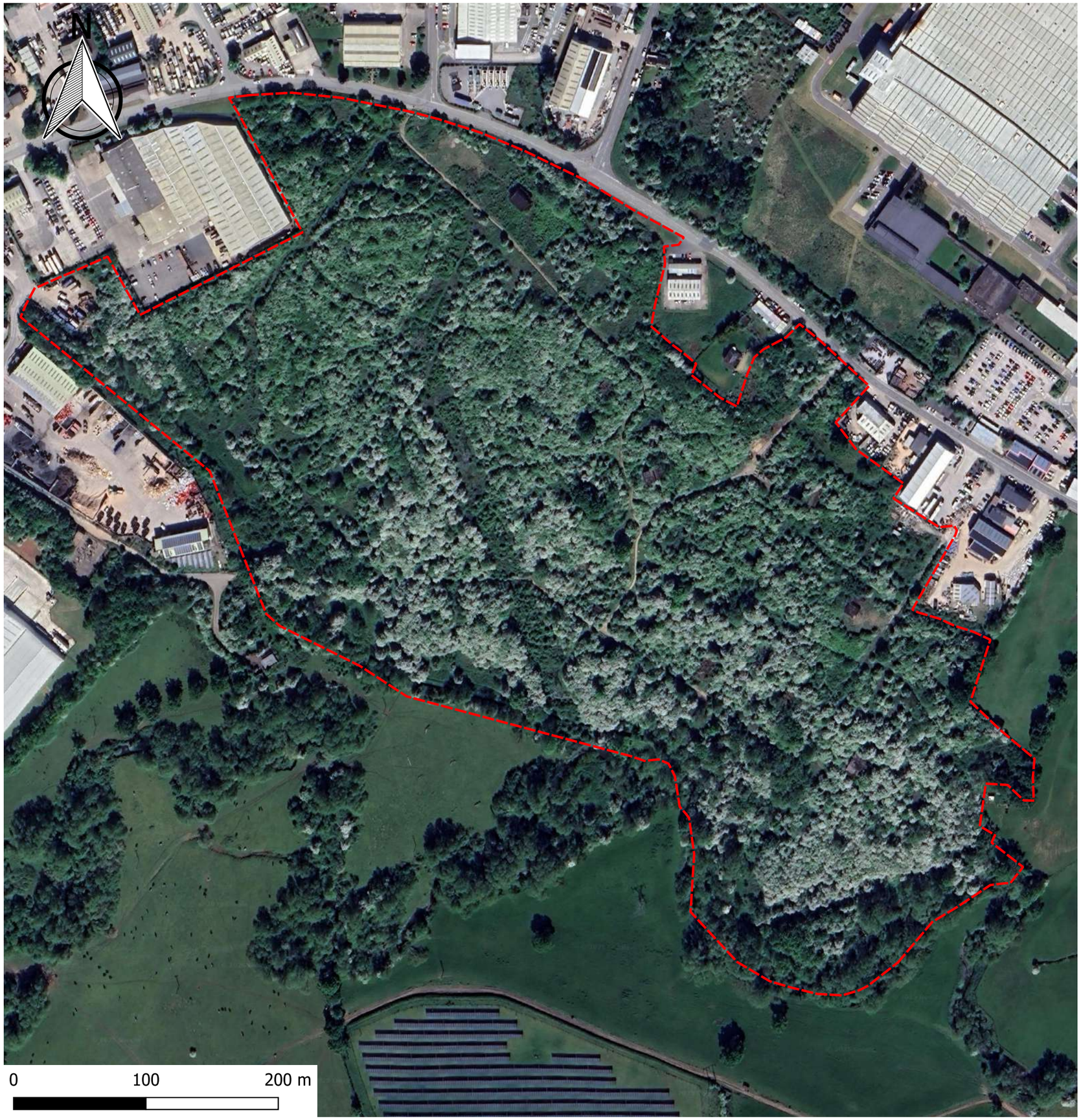
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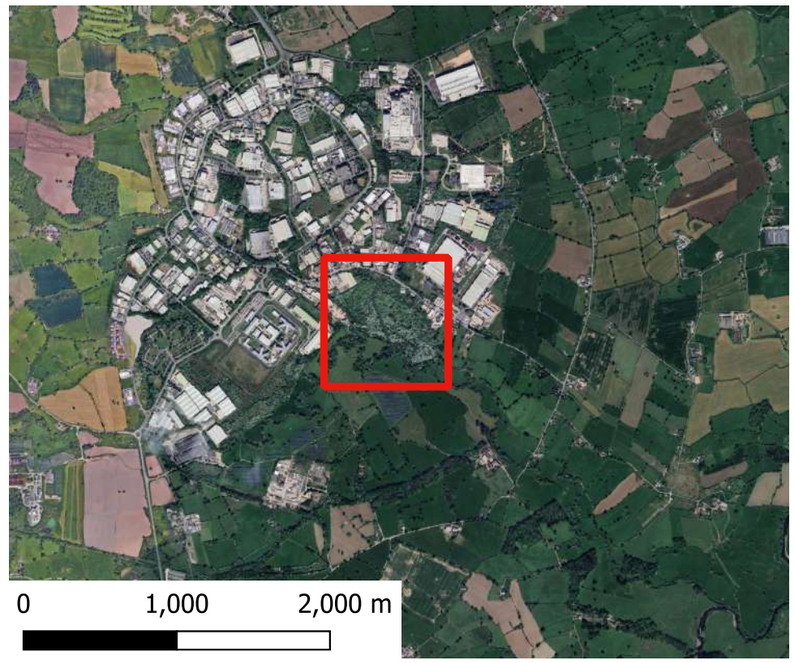
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Appendix 2 – Aerial Photographs

Aerial Photography

Site: The Oaks, Wrexham Industrial Estate
NGR: (SJ) 38653 49314
Author: Harry Fox
Date: 02/09/2025





Key

Site Boundary

MAP DATA FROM ©2025 GOOGLE, IMAGERY FROM ©2025 GOOGLE

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Appendix 3 – Photographs



Photograph 1 – Showing the canalised banks and scrub vegetation of the western section of the Redwither Brook.



Photograph 2 – Showing the western section of the Redwither Brook, with shallow concrete banks, surrounding young woodland and minimal marginal vegetation.



Photograph 3 – Sediment heavy area of the eastern section of the Redwither Brook, just before it joins the River Clywedog.



Photograph 4 –A small meander of the River Clwyedog, showing predominantly shallow banks.



Photograph 5 – Deeper pool in the River Clwyedog. Showing an overhang and exposed roost system that appears suitable but is superficial and is not deep enough to be used as a holt.



Photograph 6 – Scattered trees and scrub vegetation along the banks of the River Clywedog.



Photograph 7 – An example of the small reinforced sections of the River Clywedog.



Photograph 8 – Degraded potential otter spraints observed on the far bank of the Redwither Brook.



Photograph 9 – The otter carcass observed within close proximity to the Redwither Brook in the western section of the site.

Appendix 4 – Planning and Statutory 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 legislative protection in relation to the following species and habitats:

Water voles

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 Natural Resources Wales 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 fines of up to £5000, plus up to six months imprisonment, for each offence committed.

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

Otters

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 as species of principal importance under Section 7 of the Environment (Wales) Act 2016.

Planning policy

National planning guidance is issued in the form of Planning Policy Wales (PPW - 2024). 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