



Erbistock Mill,
Erbistock, Wrexham

Protected Species Scoping Report
Report KE22/0250

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1 Introduction

1.1 Background

Kingdom Ecology have carried out an Ecological Walkover Survey and initial Bat Scoping Assessment of a two-storey, 19th century mill building located at Erbistock Mill, Erbistock, Wrexham, LL13 0DW (National Grid Reference SJ35424220).

The assessment has been carried out to identify any ecological constraints which should be considered during proposed works to redevelop the site. The development proposals are to make alterations to the building including a new riverside walkway and an extension to the upper floor living accommodation.

Initial field surveys were undertaken on 9th November 2022. Surveys were led by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard has extensive experience of undertaking habitat and protected species surveys as a professional ecological consultant with over twenty years' experience. Richard is also a licensed bat worker.

1.2 Purpose of Report

This report provides and outlines the findings of field surveys undertaken at the site.

Surveys aimed to identify habitats and species which are either of importance in terms of their conservation value or are afforded statutory legal protection. The presence of such habitats or species would form a material consideration during the planning process and could pose a constraint to the redevelopment of the site.

Survey comprised of an initial ecological walkover survey of the site including a daytime assessment of the suitability of building to support roosting bats.

Following a description of the survey findings and an evaluation of habitats at the site, the report goes on to make recommendations for further works, mitigation and ecological enhancement measures where relevant.

1.3 Protected Species Legislation

1.3.1 Bats

All British bat species are fully protected under the Wildlife and Countryside Act 1981 (as amended) and through their inclusion in Schedule II of the Habitats Regulations 2010 which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (“EC Habitats Directive”) which defines European protected species of animals.

British bats species are afforded further protection by the Countryside and Rights of Way Act 2000; and the Natural Environment and Rural Communities Act 2006.

Taken together, this legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture bats.
- Deliberately disturb bats, whether at roost or not.
- Damage, destroy or obstruct access to bat roosts.
- Possess or transport bats, unless acquired legally.
- Sell, barter or exchange bats.

A bat roost is interpreted as “any structure or place, which any wild bat uses for shelter or protection.” (Bat Conservation Trust 2016¹). A bat roost is protected whether or not bats are present at the time.

All species of British bat are considered a European Protected Species (EPS). The Conservation of Habitat and Species Regulations (2010) provide derogation against certain offences which could potentially affect an EPS through the EPS Licensing system.

1.3.2 Non-native plant species

The Wildlife and Countryside Act 1981 provides the primary control on the release of non-native species into the wild in Great Britain. It is an offence under section 14(2) of the Act to ‘plant or otherwise cause to grow in the wild’ any plant listed in Schedule 9, Part II. Schedule 9 of the act includes Japanese Knotweed, Himalayan Balsam, and Giant Hogweed.

¹ Bat Conservation Trust (2016) ‘Bat Surveys: Good Practice Guidelines 3rd Edition’

1.3.3 Otter

Otter are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

Taken together, this legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture otter.
- Deliberately disturb otter, whether within a resting place or not.
- Damage, destroy or obstruct access to an otter resting site, or a structure or place which it uses for shelter or protection.
- Possess or transport otters, unless acquired legally.
- Sell, barter or exchange otters.

Under the Conservation of Habitats and Species Regulations 2017, disturbance is defined as that which is likely:

1. to impair their ability -

- to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

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

The otter is considered a European Protected Species (EPS). The Conservation of Habitat and Species Regulations (2017) provide derogation against certain offences which could potentially affect an EPS through the EPS Licensing system.

The otter is listed under Section 7 of the Environment (Wales) Act 2016.

2 Field Survey Methods

2.1 Survey Aims and Objectives

The survey aim was to assess the site as to its ecological importance by assessing the value of habitats and their suitability to support any protected or notable species. The purpose of this was to highlight any ecological constraints associated with future development proposals.

Survey comprised of an ecological walkover survey and bat roost scoping assessment, this included an assessment of habitats at the site in terms of their suitability to support any protected species including bats, breeding birds and otters.

Species that are considered unlikely to be significantly affected by the proposed development, even if known to be present in the general vicinity, were 'scoped out' of the assessment.

Survey also aimed to identify opportunities for ecological enhancement and to inform potential mitigation measures, if required, to ameliorate any negative impacts attributable to the proposed works.

2.2 Survey Methods

2.2.1 Ecological Walkover Survey

An initial Ecological Walkover of the site was undertaken on the 9th November 2022.

The aims of the walkover survey were to:

- identify areas or habitats that are of particular ecological interest for nature conservation and which require more detailed investigation;
- provide a broad botanical description of habitats present;
- provide additional information regarding incidental observations of protected species or non-native, invasive species;
- to assess the site as to its ecological importance by assessing the value of habitats and their suitability to support any protected or notable species (including otters, bats and breeding birds).

A map of the study site is shown in Figure 1. Typical habitats recorded at the site are also shown in photographs in the Appendix.

2.2.2 Otter Field Signs

The walkover survey included a thorough search for signs of mammals on adjacent river habitat. Field signs indicative of otter presence include spraints, footprints, otter slides, holts and couches. Particular attention was paid to potential otter spraint and holt sites, such as rocks, tree roots and beneath an area of decking. Otter resting sites can be categorised as holts, hovers or couches. An otter resting site can be defined as any location that is used by an otter to rest between foraging and commuting activity.

2.2.3 Daytime Bat Inspection

The building was assessed as to its suitability to support bats following standard methodologies prescribed in English Nature's *Bat Mitigation Guidelines* (Mitchell-Jones 2004)² and the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* 3rd Edition (BCT 2016)³.

Survey, comprising of an inspection of the interior and exterior of the building, was undertaken during daylight conditions using binoculars and a high-powered torch. The survey was undertaken during daylight hours on the 9th November 2022.

In addition to searching for evidence of an actual bat roost the survey also aimed to assess the suitability of the building to support bats and consequently the likelihood of a bat roost being present but with no obvious field signs.

Survey assessed the building's roost suitability by examining structural features and the surrounding habitat. Structural features that will influence the suitability of a building to support roosting bats include the presence of a roof void; access points into a building including gaps beneath barge boards, gaps under lead flashing, gaps within masonry, loose tiles, complexity of any roof void, daytime light levels in roof void etc.

Important habitat features surrounding the structures which could influence roost potential include: whether the structure is in a semi-rural or parkland location, proximity to a significant linear feature (e.g. watercourse, mature hedgerow, wooded lane) or an area of woodland etc.

² Mitchell-Jones, A.J. 2004. *Bat Mitigation Guidelines*. English Nature, Peterborough.

³ Bat Conservation Trust (2016) '*Bat Surveys: Good Practice Guidelines* 3rd Edition'

Taking account of these architectural and habitat features, the building was assigned a level of roost suitability. This assessment considered roost suitability criteria as summarised in Table 1 below and taken from the Bat Conservation Trust's Bat Surveys: Good Practice Guidelines 3rd Edition.

Table 1- Bat Roost Suitability Criteria

<i>Suitability</i>	<i>Description of Potential Roosting Habitats</i>
<i>Negligible</i>	Structure has Negligible habitat features likely to be used by roosting bats.
<i>Low</i>	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger number of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground of features seen with only very limited roosting potential.
<i>Moderate</i>	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, condition and surrounding habitat but unlikely to support a roost of high conservation status.
<i>High</i>	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

3 Survey Results

3.1 Site Description

The study area comprises of Erbistock Mill which is a converted water mill building.

The building is located directly on the west bank of the River Dee, immediately adjacent to a weir. Adjacent habitats include the river and extensive blocks of riparian woodland. Other nearby habitats include areas of arable and pastureland.

The site location is shown on Figure 1 in the Appendix.

Habitats recorded at the study site are shown on Photographs and target noted on Figure 2 in the Appendix. Habitats identified at the site are described further below.

3.1.1 River Dee Designations

The River Dee/The Afon Dyfrdwy is designated as both a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).

The River qualifies as a SAC principally on account of Annex II species present but the River also supports Annex I habitats.

Qualifying features of the SAC are:-

- Annex II Species (primary reason): Atlantic salmon, Floating water-plantain.
- Annex II Species (qualifying reason): Sea lamprey, Brook lamprey, River Lamprey, Bullhead, Otter.
- Annex I Habitat: Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation.

The Natural Resources Wales citation for the River Dee SSSI citation describes the reasons for the SSSI notification of the Dee as follows.

- 'The River Dee is notified for its nationally important transition through a range of river types from mesotrophic to eutrophic. It is also notified for Atlantic salmon *Salmo salar*, otter *Lutra lutra*, club-tailed dragonfly *Gomphus vulgatissimus* and fluvial geomorphology.
- The River Dee lies within both England and Wales, and is notified as separate SSSIs – the River Dee (England) and the Afon Dyfrdwy-River Dee SSSI in Wales. The features for which the SSSIs are notified, in particular migratory fish, depend upon the whole river ecosystem. salmon, otter, club-tailed dragonfly, and fluvial geomorphology are of special interest in both Wales and England.

3.2 Habitats

3.2.1 Habitat Description

The site is accessed via a hardstanding and gravelled driveway which leads to a parking area immediately to the north of the mill building. A track runs to the west of the building leading to a gated access to the adjacent woodland.

The River Dee runs immediately to the east of the main building. The river is approximately 50 m in width in this location and there is a weir (Target Note 1 on Figure 2) running diagonally through the river channel. An area of raised wooden decking (Building 2 on Figure 2) has been constructed leading from the building into the river channel.

There is a sandstone retaining wall running along the western bank of the river. A vegetated sand bar has developed within the river channel in front of the retaining wall and the mill building. Vegetation on the bank comprises principally of nettle, with bramble, great willow herb, pendulous sedge, greater burdock, dog rose, creeping thistle and small teasel. Scattered young trees/saplings are present including willow, sycamore and alder. There are patches of fern growing on the side of the mill and beneath the area of decking including male fern, lady fern and hart's tongue fern.

There are patches of non-native invasive plant species present along the sand bar including stands of Himalayan balsam (Target Note 4) and the also three small stands of Japanese knotweed. The knotweed is located both upstream and downstream of the area of raised decking (Target Notes 2 and 5).

Japanese Knotweed and Himalayan balsam are listed under Schedule 9 of the Wildlife and Countryside Act as a non-native invasive species (see Section 1.3).

3.3 Protected Species

3.3.1 Bat Scoping Assessment

The mill building is arranged over four storeys (basement, ground floor, first floor and second floor) with the lower half constructed of sandstone blocks whilst the other half is constructed of brick. The building has a pitched roof clad in slate with the upper floor rooms extending into the roof space of the mill. The building is of pre-20th century origin, with some parts of the building believed to date from the 17th century (there is a date stone in the cellar reading 1602).

The former mill workings are located in the basement of the building. This part of the building remains unused and largely unaltered. The upper three floors have been converted to provide living accommodation, with a games room on the ground floor, bedrooms on the first floor and a living area and kitchen on the top floor. The upper floor rooms have been fitted with skylights and dormer windows at both the east and west facing pitches. The east facing dormer has a flat roof and is clad in lead, whilst the smaller, west facing dormer has a pitched slate roof.

The building has an open terrace area at the southern end of the top floor (Bat Target Note 1 on Figure 2). In this location a section of the east facing roof pitch has been removed in order to create the open terrace space. The roof ridge line has been retained across the full length of the building. The terrace area measures approximately 3 m x 6 m in area and is 3 m in height.

Development proposals would include the restoration of the roof and the conversion of the terrace area into living accommodation.

The building was assessed with regards to its suitability for roosting bats. The interior of the building is largely considered unsuitable for bats, the upper floor rooms are all bright with plastered walls and ceilings and are subjected to frequent human disturbance. The basement area is dark and relatively humid and suffers limited human disturbance. There is a fireplace present in the basement which could offer some potential bat roosting habitat. However, no obvious bat access points to the basement were identified. In any case, the basement area will not be affected by development proposals.

The upper floor terrace area was observed to be intact and well sealed with no obvious potential bat roosting features. The external brickwork within the terraced area is well pointed with no obvious potential roosting crevices and the internal face of the roof is well plastered and tightly sealed. No bat droppings or other bat field signs were identified within the building interior or the terrace area.

The roof of the building appears to be intact and in good condition with no missing slates or areas of raised ridge. Verge mortar at each gable end is intact and well pointed. It is likely that the roof has been restored in the relatively recent past, possibly when the dormer windows and skylights were installed.

The areas of external brickwork appear to be well pointed with no obvious cracks or crevices.

However, there are intermittent deep crevices between the areas of sandstone blockwork located at the building's east and west faces (Bat Target Notes 2 on Figure 2). The crevices are located within the sandstone blockwork between the ground floor and first floor windows of the building. The crevices in the block work only offer suitable roosting habitat for individual or low numbers of non-breeding bats.

The building has guttering at the east and west faces fitted to wooden fascia boarding at the building's eaves. The fascia is lifting in places, however the gap between the brickwork and the fascia appears to be cobwebbed over, indicating that it has not been used by roosting bats in the recent past.

Taking account of the building's location and features identified, the building was assessed as offering a 'moderate' suitability for roosting bats.

3.3.2 Otter

The adjacent River Dee is designated as an SAC; with one of the qualifying reasons being the river's importance to otter. The site is located adjacent to areas of good otter habitat with extensive areas of riparian woodland.

Habitat around the building were considered in relation to otters, and the survey searched for otter field signs.

The area of decking (Building 2 on Figure 2) extends out into the river channel immediately adjacent to the weir. The decking is raised from the riverbank by approximately 1.2 m.

The area beneath the decking was searched for otter field signs. Moderately fresh and old otter spraint was identified on a steel beam beneath the decking. This confirms that otter pass beneath the decking area relatively frequently. It is likely that otter travel under the decking in order to pass around the adjacent weir.

The area underneath the decking may also offer a temporary resting area for otter. However, the area is relatively exposed and open with no suitable secure, holt sites to allow use during the daytime or for prolonged resting periods.

No suitable otter holt sites were identified in proximity to the proposed works areas, however the wider riparian woodland habitats are likely to offer such suitable habitat.

3.3.3 Other Protected or Notable Species

The proposed works will not affect any areas of suitable bird nesting habitat.

It is considered unlikely that any other protected species would be present at the proposed development site.

4 Summary & Recommendations

4.1 Habitats

4.1.1 Summary

Kingdom Ecology have carried out a protected species scoping survey of Erbistock Mill which is a converted pre-20th century mill building located on the River Dee.

Proposed works to refurbish the building would include the conversion of an existing terrace to provide additional living accommodation; the replacement of windows and dormers; the installation of wooden cladding and the construction of a new riverside walkway along the eastern face of the building.

The proposed works will largely affect the building only and would not need to impact upon vegetation which has developed on a sand bar between the building and the river. No works within the River Dee channel are proposed.

Habitats on the sandbar comprise of typical tall herb, riparian vegetation. However, also present are small stands of Japanese knotweed and Himalayan balsam.

Japanese Knotweed and Himalayan balsam are listed under Schedule 9 of the Wildlife and Countryside Act as non-native invasive species (see Section 1.3).

It is an offence under section 14(2) of the Wildlife and Countryside Act to plant or otherwise cause these plants to grow in the wild.

4.2 Protected Species

4.2.1 Bats

The mill building was assessed as offering a 'moderate' bat roosting potential. The building interior, the existing top floor terrace and the roof of the building were not observed to support any obvious potential bat roosting features.

Suitable roosting habitat is considered to be restricted to intermittent mortar crevices between the sandstone block work at the building's east and west faces. The crevices occur between sandstone blocks located between the ground floor and first floor windows.

If works would affect the identified potential bat roosting features (either through re-pointing to infill mortar crevices or by enclosing crevices within wooden cladding), then further bat surveys would be required to determine whether they are in use by roosting bats.

However, if the features can be retained and unaffected, then further bat surveys may not be required as all potential roosting habitat would be retained.

In order to further assess the potential bat roosting features, at least two dusk/dawn bat activity surveys would need to be carried out during the active bat survey season (May-September inclusive with at least one survey completed between early June and the end of August).

The surveys should use at least two bat surveyors so that all identified potential bat roosting features at the building's east and west faces can be fully assessed. The surveys would aim to confirm the presence or otherwise of any bat roosts associated with the crevice features.

If any roosting bats are encountered, further nocturnal surveys may be required and any future development of the site affecting the features may need to be carried out following a European Protected Species License.

Further recommendations with regards to lighting and the provision of additional bat roosting habitat is provided below.

4.2.2 Otter

Evidence of otter was identified beneath the area of decking present at the site. It is likely otter pass under the decking in order to cross over the adjacent weir.

Works proposals will not affect the existing area of decking or significantly affect the existing river channel. Therefore, otters will be able to continue to pass beneath the decking area and to potentially use this as a resting site.

The proposals should not result in a significant increase in disturbance to the riverside habitats, with the proposed new walkway only likely to see occasional use and mainly during daylight hours. The development should not result in any significant increase in the usage of the existing decking area.

However, insensitive construction practices could result in disturbance to otter or damage to riparian habitats. Further recommendations to limit the risk of these impacts are provided below.

4.3 Construction Recommendations

Japanese Knotweed and Himalayan balsam have been identified on the sandbar running along the River Dee. Both of these plants are listed under Schedule 9 of the Wildlife and Countryside Act as non-native invasive species (see Section 1.3).

It is an offence under section 14(2) of the Wildlife and Countryside Act to plant or otherwise cause these plants to grow in the wild.

Himalayan Balsam is an invasive 'alien' species that can grow in dense stands and can out-compete native flora. The plant is able to rapidly spread by seed dispersal. On contact or slight disturbance of the seed pods, the parent plant can catapult seeds up to 7m away. The seeds can also be easily carried by wind or water.

The movement and use of soil contaminated by fragments of Japanese knotweed rhizomes is the main method of spread for this species between sites, however, the plant is also able to spread by transfer of cut stem material.

The Wildlife and Countryside Act 1981 (as amended) provides the primary controls on the release of non-native species into the wild in Great Britain. It is an offence under section 14(2) of the Act to plant or otherwise cause to grow in the wild any plant listed in Schedule 9, Part II. Himalayan balsam is listed under Schedule 9, Part II.

No works are proposed within the river channel or which would significantly affect habitats on the vegetated sandbar. However, incidental disturbance of Himalayan balsam seedpods during construction could cause further spread of this plant.

It is therefore recommended that a Himalayan Balsam management plan is produced and adhered to works.

Control measures for Himalayan balsam should aim to prevent seeding (generally August-October). It is recommended that plants are removed by hand-pulling or cutting around the works areas. This should be carried out May-July to be the most effective. Cutting should be carried out at ground level and below the first node to achieve the best results.

Appropriate no works zones should be marked out around the stands of Japanese knotweed. Alternatively, the stands could be removed in advance of works. If this option is pursued, then it is recommended that a Japanese knotweed method statement is produced, providing methods by which this invasive species will be treated and controlled.

A biosecurity method statement would also be required to ensure that no contaminated soils or plant material are inadvertently moved from the site during construction works (e.g. within tyre tracks, boot grips, on vehicles, in exported material etc).

The proposed works, if carried out in an insensitive manner, could cause pollution of the River Dee corridor during the construction phase.

This could comprise of fuel/chemical spills, construction materials falling into the river or sedimentation of the river during construction of the new walkway.

Insensitive timing of works, or bad work practices could also result in harm to otter using the river.

In order to limit the risk of these potential negative impacts, it is recommended that an appropriate works method statement is produced detailing best practices methods and pollution control measures to be followed during the construction phase. Further measures to limit the risk of disturbance or harm to otters should include:

- No works should be carried out at the site between sunset and sunrise.
- No overnight lighting should be used.
- A tidy works area should be maintained during construction and any hazardous substances should be fenced off to remove any otter hazards from the site.

No additional lighting should be installed on the areas of existing decking or on the proposed walkway. The aim of this will be to retain a dark corridor along the River Dee. This would be important to retain valuable habitat for both otter and bats using the river corridor.

4.4 Ecological Enhancements

It is recommended that opportunities to enhance the ecological value of the development area are taken.

4.4.1 Bat and Bird Boxes

The proposed development should include provision for roosting bats and breeding birds. This can be achieved through the installation of bat boxes and sparrow nest boxes onto the refurbished building at the site.

Alternatively, proposed wooden cladding could be constructed with deliberate raised sections to provide suitable roosting habitat for bats. This can be achieved by intermittently inserting 2-3cm wide battens between the overlapping wooden panels. This would provide suitable roosting habitat between the wooden boards and also between the cladding and the external brickwork.

Where bat roosting habitat is to be provided between the timber boarding, the timber should only use treatment products that have been approved by Natural England for use within proximity to bat roosts. A list of appropriate products can be found at:-

<https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts>

5 Appendix

PHOTOGRAPHS

Photograph 1- East face of Building



Photograph 2- East face of building viewed from weir



Photograph 3- View of roof showing Terrace area and dormers



Photograph 4- Existing terrace area



Photograph 5- East base of mill building showing crevices in blockwork



Photograph 6- South and west face of the mill building



Photograph 7- Habitats on sandbar



Photograph 8- Decking area



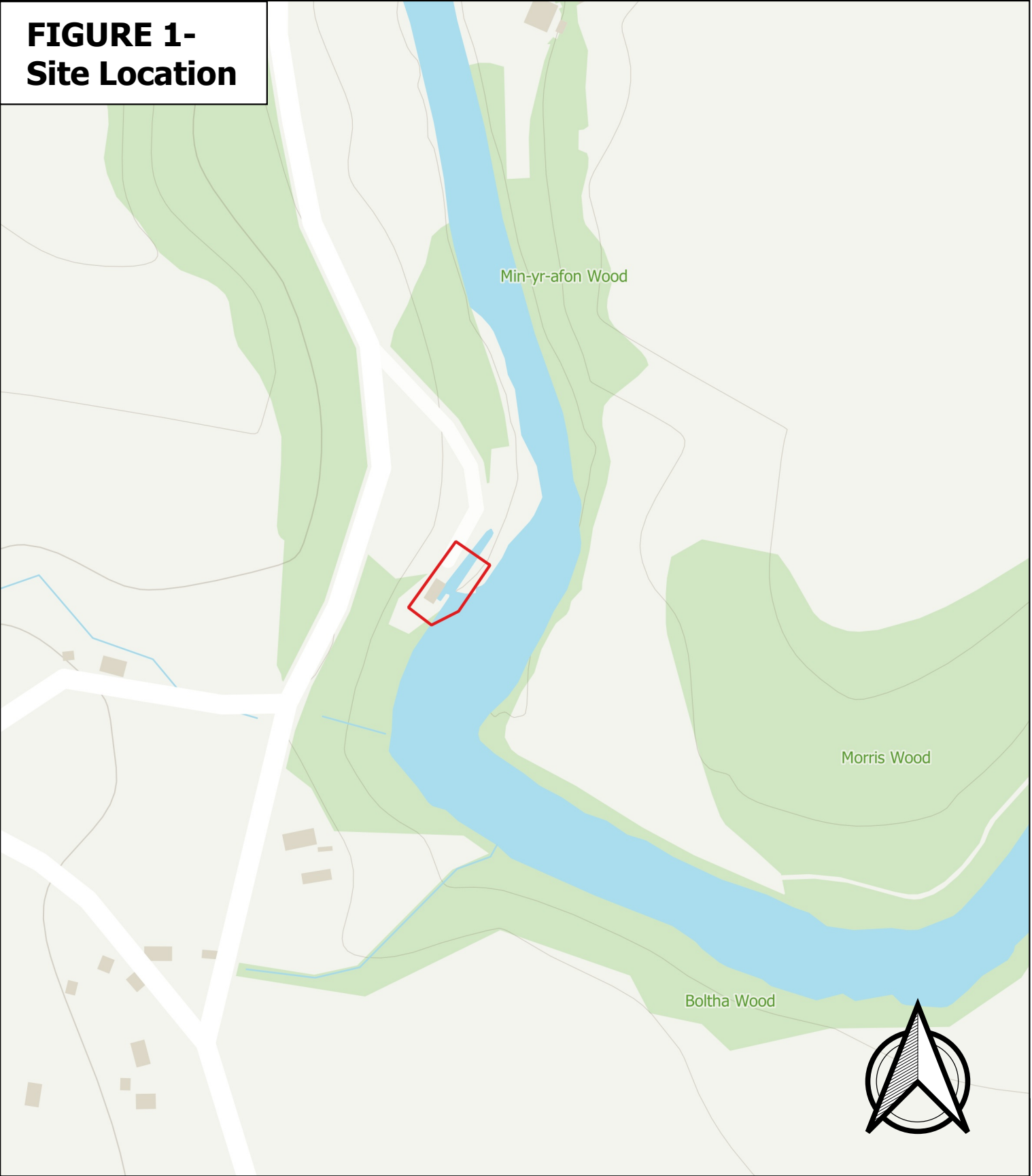
Photograph 9- Habitats beneath decking



Photograph 10- Otter spraint under decking area

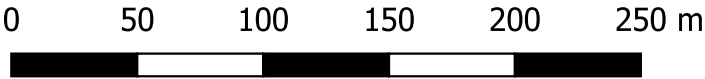


**FIGURE 1-
Site Location**

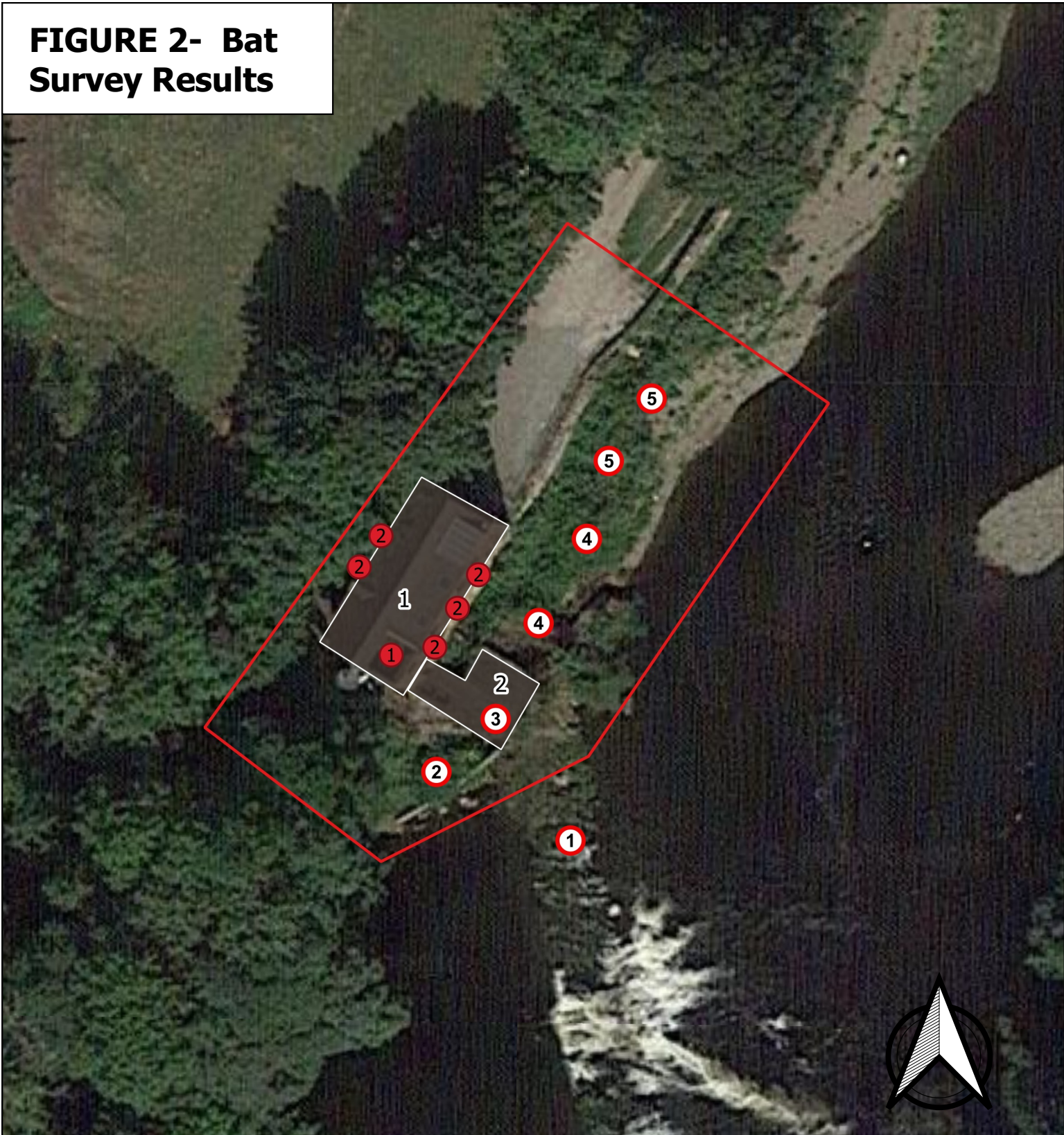


KEY

 Study Site



**FIGURE 2- Bat
Survey Results**



KEY

- | | | | |
|---|--------------------------|---|-----------------|
|  | Study Site |  | Target Note |
|  | Building |  | Bat Target Note |
| 1- | Main Mill Building | | |
| 2- | Existing area of decking | | |