

Vyrnwy Reserve

Further Protected Species Surveys



HABITAT WORKS

March 2025



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Further Protected Species Surveys

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Executive Summary

Habitat Works Limited (Habitat Works) was commissioned by Canal & River Trust (hereafter referred to as 'The Trust') to undertake an Update Preliminary Ecological Appraisal (PEA) of the land at the plot of the proposed Vyrnwy Reserve, located near, Llanymynech, Powys, Wales SY22 6SY (central Ordnance Survey National Grid Reference (OS NGR) SJ 25850 19534), hereafter referred to as 'the Site' and as displayed in Figure 1.

An original PEA was undertaken by Habitat Works in 2023 '*Vyrnwy Reserve Site – Preliminary Ecological Appraisal Report*'. The requirement for the PEA was to inform proposals for the Site to be repurposed as a wetland habitat creation scheme.

This report recommended further surveys for a number of protected species including:

- Barn Owl
- Kingfisher
- Reptiles
- Riparian Mammals (otter and water vole).

No evidence of these species was found on the Site during these targeted surveys.

Recommendations are made regarding impacts of the proposed development through habitat losses/potential gains on the Site post-development and the retention and protection of key ecological features. These include:

- Ecological Clerk of Work (ECoW) attendance for key works surrounding the River Vyrnwy;
- Implementation of pollution prevention measures throughout the works;
- Implementation of Best Practice Measures (BPM) for reptiles and otters.

1. Introduction

1.1 Background

- 1.1.1 Habitat Works Limited (Habitat Works) was commissioned by Canal & River Trust (hereafter referred to as 'The Trust') to undertake an Update Preliminary Ecological Appraisal (PEA) of the land at the plot of the proposed Vyrnwy Reserve, located near, Llanymynech, Powys, Wales SY22 6SY (central Ordnance Survey National Grid Reference (OS NGR) SJ 25850 19534), hereafter referred to as 'the Site' and as displayed in Figure 1.
- 1.1.2 An original PEA was undertaken by Habitat Works in 2023 '*Vyrnwy Reserve Site – Preliminary Ecological Appraisal Report*'. The requirement for the PEA was to inform proposals for the Site to be repurposed as a wetland habitat creation scheme.
- 1.1.3 This report recommended further surveys for a number of protected species including:
- Barn Owl
 - Kingfisher
 - Reptiles
 - Riparian Mammals (otter and water vole).
- 1.1.4 This report outlines the methodologies of these targeted surveys and their findings. Recommendations are made regarding impacts of the proposed development through habitat losses/potential gains on the Site post-development and the retention and protection of key ecological features. The provision of species-specific enhancements is outlined where appropriate.

2. Methodology

2.1 Data Consultation

2.1.1 Data consultation was undertaken by Habitat Works with the local records centre; Biodiversity Information Service for Powys & Brecon Beacons National Park (BIS) in October 2023 during the original PEA of the Site as part of the ecological appraisal process, to determine whether any ecological features of note had previously been recorded within 2 km of the Site. Data requested included:

- Records of protected species;
- Records of national or local Biodiversity Action Plan (BAP) species;
- Details of any statutory sites of ecological interest e.g. Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA) etc.; and,
- Details of any non-statutory sites of ecological interest e.g. Local Wildlife Site (LWS).

2.1.2 Information returned from BIS with relevant assessments will be incorporated into the report as appropriate. All records will be reviewed, however particular interest will be placed on records within the past 10 years, with records prior to these considered historic.

2.2 Barn Owl

2.2.1 Following the sighting of a barn owl during the initial PEA visit on 18th September 2023, it was considered that there was potential for barn owl to be nesting and/or roosting in the mature oak present (T1) in the northwest of the Site (Figure 1).

2.2.2 T1 was subject to bat surveys throughout the summer of 2024 as detailed within the Habitat Works 2045 report 'Vyrnwy Reserve – Bat Tree Surveys V1.0'. Although the focus of these surveys was roosting bats, these survey methodologies would also confirm the presence/likely absence of barn owl roosts/nests within T1. This included an emergence survey, and two aerial (close) inspection surveys. These are detailed below in Table 1.

Table 1 – Barn owl survey dates

Date	Surveyor	Survey Type
1 st August 2024	Joe Travis and Chris Birkinshaw	Nocturnal emergence survey
22 nd August 2024	Joe Travis and Greg Parrot	Aerial (close) inspection survey
19 th September 2024	Joe Travis and Greg Parrot	Aerial (close) inspection survey

2.2.3 The dusk emergence surveys commenced 15 minutes prior to sunset and finished 1.5 hours after sunset. The surveys were conducted during a period where the weather conditions were predominantly dry, with relatively low winds and temperatures in excess of 10°C.

2.2.4 Aerial (close) inspection surveys comprised detailed survey, including endoscopic inspection to identify the potential for evidence of nesting/roosting barn owls.

2.2.5 The surveys were undertaken by suitably qualified and experienced ecologists.

2.3 Kingfisher

2.3.1 Both the River Vyrnwy and The Montgomery Canal were assessed for their potential to support kingfisher, with a detailed survey being undertaken on 8th May 2024.

2.3.2 The survey was undertaken by Senior Ecologist Joe Travis BSc (Hons) MSc ACIEEM and Assistant Field

Ecologist Chris Birkinshaw and included a detailed search of both banks of the River Vyrnwy and the Montgomery Canal. The survey targeted soft banks in the watercourses that had the potential to support kingfisher burrows.

- 2.3.3 The survey was undertaken within 250 m up and downstream of the Site. The survey was undertaken from the banks of the watercourses, both in their typical baseline flow conditions and with no limitations to access (Figure 1).

2.4 Reptiles

- 2.4.1 A total of seven reptile surveys were undertaken across 2023 and 2024, as per Froglife 2016 'Surveying for Reptiles' guidance (see Table 2 below). The surveys were undertaken by suitably qualified and experienced ecologists.

Table 2 – Reptile survey dates

Date	Surveyor	Visit	Weather Conditions
2023			
18 th September	Chris Birkinshaw	Reptile refugia deployment	N/A
9 th October 2023	Chris Birkinshaw	Visit 1	14°C, 3 mph wind, sunny
13 th October 2023	Chris Birkinshaw	Visit 2	11°C, 10 mph wind, scattered clouds
8 th November 2023	Chris Birkinshaw	Visit 3 & reptile refugia collect	11°C, 16 mph wind, partly sunny
2024			
23 rd April 2024	Chris Birkinshaw	Reptile refugia deployment	N/A
8 th May 2024	Chris Birkinshaw	Visit 4	13°C, 6 mph wind, sunny
31 st May 2024	Joe Travis	Visit 5	14°C, 12 mph wind, scattered clouds
5 th June 2024	Chris Birkinshaw	Visit 6	9°C, 7 mph wind, sunny
12 th June 2024	Chris Birkinshaw	Visit 7 & reptile refugia collect	9°C, 3 mph wind, sunny

- 2.4.2 As per guidance, a minimum of 10 refugia per hectare of suitable habitat was deployed ahead each survey, and given a period to establish within the vegetation. This amounted to a total of 68 reptile refugia across the Site, mostly around field edges which provide a greater variability of habitats that reptiles prefer (Figure 1).
- 2.4.3 Each survey was undertaken within the reptile survey season of March to October, in conditions >9°C with sunny spells. The surveys were undertaken avoiding the midday period where reptiles are less active, and undertaken either between 08:30 and 11:00 hrs, or 16:00 and 18:30 hrs.

2.5 Riparian Mammals

- 2.5.1 Both the River Vyrnwy and The Montgomery Canal were assessed for their potential to support otter and water vole, with a detailed survey being undertaken on 8th May 2024. The survey was undertaken by Senior Ecologist Joe Travis BSc (Hons) MSc ACIEEM and Assistant Field Ecologist Chris Birkinshaw and included a detailed search of both banks of the River Vyrnwy and the Montgomery Canal. Evidence of otter and water vole presence was sought, including burrows/holts, latrines/spraints, feeding remains, footprints and runs.
- 2.5.2 The survey was undertaken within 250 m up and downstream of the Site. The survey was undertaken from the banks of the watercourses, both in their typical baseline flow conditions and with no limitations to access (Figure 1).

3. Findings and Evaluation

3.1 Site Description

- 3.1.1 The Site is located southwest of LLanymynech, Powys and is located between the western bank of the River Vyrnwy, and the eastern bank of the Montgomery Canal as detailed in Figure 1. The Site comprises pastoral fields which are regularly grazed by sheep and bounded mainly by native hedgerows.
- 3.1.2 The Site is mostly bounded by pastoral fields, with sections of hedgerow and pockets of woodland present across the wider landscape.

3.2 Barn Owl

- 3.2.1 BIS returned a total of six records of barn owl for locations within 2 km of the Site, dated between 1984 and 2016. The closet record to the Site pertains to a record approximately 1500 m south of the Site corded in 2016.
- 3.2.2 The detailed surveys of T1 found no evident of roosting or nesting barn owl.
- 3.2.3 T1 contains several large trunk cavities which offer suitability for roosting and/or nesting barn owl, however no evidence of the species presence was recorded. The cavities are enclosed, creating a ledge that is preferred for barn owl when selecting nesting locations in order to reduce the likelihood of chicks falling from the nest.
- 3.2.4 Although these cavities offer suitable nesting and roosting locations, no evidence of recent use by barn owls was found (e.g. pellets, feathers, nesting materials etc). As such, it is considered that T1 is likely absent of roosting and/or nesting barn owl.

3.3 Kingfisher

- 3.3.1 BIS returned a total of 11 records of kingfisher for locations within 2 km of the Site, dated between 2010 and 2023. The closet record to the Site pertains to a record approximately 300 m west of the Site, last recorded in 2021.
- 3.3.2 The Site itself offers little suitability for nesting kingfisher. However, along the northern boundary of the Site is the River Vyrnwy with soft, earth banks in places which are suitable for kingfisher to create burrows.
- 3.3.3 Survey found no evidence of kingfisher burrows within the earth banks on the River Vyrnwy, however given that the species is highly mobile, there is potential for kingfisher to create nesting burrows in any suitable habitat between now and the commencement of works. The proposals include connecting the river to the new wetland area to create the wetland channel and ponds on the proposed reserve site, and as such, kingfisher have potential to be impacted by the proposals.

3.4 Reptiles

- 3.4.1 BIS returned a total of eight records of reptiles for locations within 2 km of the Site. The records included grass snake *Natrix helvetica*, common lizard *zootoca vivipara* and slow worm *Anguis fragilis*. The closest of these records to the Site pertains to a grass snake recorded approximately 300 m west of the Site on the Montgomery Canal in 2014.
- 3.4.2 Overall habitats on the Site currently offer some suitability for reptiles, with tussocky grasslands offering areas to bask, but also denser sections to the shelter within. Two fallen trees within the centre of the Site also offer a good area with both basking and sheltering opportunities close together. The Site is regularly

grazed, which may offer some level of disturbance for any potentially present reptiles, however, it is not considered significant enough to anticipate the likely absence of reptiles from the Site.

- 3.4.3 The suite of reptile surveys undertaken found no evidence of reptiles during the surveys, and as such, it was concluded that reptiles are likely absent from the Site.
- 3.4.4 Despite the results of these surveys, given the presence of records of reptiles on the Montgomery Canal adjacent to the Site, it is considered that there is a reasonable likelihood that reptiles may be present on the Site on occasion as part of their wider territory. However, given the presence of higher quality habitats in the surrounding area, in particular habitats associated with the Montgomery Canal, it is considered that the Site is of importance to reptiles at no greater than the site level.

3.5 Riparian Mammals

- 3.5.1 BIS returned a total of 20 records of European otter *Lutra lutra*, the closest being a field record approximately 200 m west of the Site in 2007 on the Montgomery Canal. Additional records are located on the River Vyrnwy, with the closest approximately 300 m northwest of the Site in 2002.
- 3.5.2 BIS returned a single record of European water vole *Arvicola amphibius* for locations within 2 km of the Site. The record was approximately 2,000 m northwest of the Site, recorded in 2005.
- 3.5.3 No evidence of these species was recorded during the targeted surveys.
- 3.5.4 The Montgomery Canal was considered to offer suitability for both otter and water vole. The habitats present offer slow moving water, with densely vegetated margins which are considered suitable for both otter and water vole. The proposals however will not directly impact the Montgomery Canal. Given the habitats present on the Site, in conjunction with the proposals, it is not considered that the Montgomery Canal will be impacted and as such will not be discussed further within this report.
- 3.5.5 The River Vyrnwy was considered to not offer suitable habitat for water vole, with the current of the river considered too strong to support water vole populations. As such, water vole are not considered a receptor to the works and will not be discussed further within this report.
- 3.5.6 The River Vyrnwy does however offer suitable habitat for otters, with areas of woodland and dense scrub potential locations for the establishment of setts. The river is a large watercourse with known populations of fish, and as such would act as both a feeding and commuting resource for local otter populations.
- 3.5.7 There was no evidence of otter presence on the River Vyrnwy or the Site during the survey, however given that the species are highly mobile, there is potential for the species to be present on the Site and in the River Vyrnwy in close proximity to the Site at the time of the works. The proposals will have a direct impact on the River Vyrnwy, with the proposals including the digging of the riverbanks to create the wetland ponds on the proposed reserve site, and as such, otters may be impacted by the proposals.

4. Impact Assessment, Mitigation and Enhancements

4.1 *Proposals*

- 4.1.1 The requirement for the PEA was to inform proposals for the Site to be repurposed as a wetland habitat creation scheme. This will see the partial loss of grassland on the Site, to allow for the creation of at least two ponds. The creation of these ponds will include the excavation of the south banks of the River Vyrnwy in two locations to allow the excavated ponds to fill. Additional planting will be included as per the proposals, with the creation of meadows and hedgerows included in the proposals.
- 4.1.2 The proposals will create a diverse range of habitats on the Site, which will likely benefit a range of protected species. The Site will also be managed in the long-term for the purpose of wildlife conservation and therefore provide valuable habitats for the foreseeable future.
- 4.1.3 Since the 2023 report, an additional 'Disposal Area' has been included within the proposals, which is proposed to be utilised for the disposal of sediments that would be created by the proposed excavation of parts of the Site to create the ditches/channels to create the wetland reserve (Figure 1).

4.2 *Barn Owl*

- 4.2.1 All wild birds, their nests and eggs are protected under the WCA 1981 (as amended) while a nest is in use or occupied. The nesting bird season is typically considered to fall between March and August (inclusive). Species listed under Schedule 1 of the Act receive additional protection against disturbance whilst occupying a nest site.
- 4.2.2 Barn owl is not considered to be roosting or nesting in T1 during the surveys undertaken throughout the Summer of 2024. Barn owls are however highly mobile, and the features within T1 are suitable to support roosting and nesting barn owls. As such, and as per the proposals, it is recommended that the trees are retained throughout the works. Works should be planned to minimise disturbance caused to the tree, such as not implementing artificial lighting throughout the construction or operational phases. It is recommended, that where possible, the proposals are undertaken at a significant buffer from the trees (minimum 5 m) to limit the indirect disturbance which may be caused throughout the works (e.g. vibrations from excavation of nearby ground to create ponds/footpaths/deposition of sediment).

4.3 *Kingfisher*

- 4.3.1 All wild birds, their nests and eggs are protected under the WCA 1981 (as amended) while a nest is in use or occupied. The nesting bird season is typically considered to fall between March and August (inclusive). Species listed under Schedule 1 of the Act receive additional protection against disturbance whilst occupying a nest site.
- 4.3.2 Kingfisher are not considered to be resident on the Site; however, they are highly mobile species and have the potential to disperse on to areas of the Site and into working areas from known populations on the River Vyrnwy and the Montgomery Canal.
- 4.3.3 As such, it is recommended that an Ecological Clerk of Works (ECoW) is in attendance when the works to the riverbank is being undertaken. The ECoW would undertake an update survey of the riverbank ahead of the works to ensure that no new burrows have been established in the proposed locations where the riverbank will be directly impacted.

4.4 Reptiles

- 4.4.1 Common reptile species including grass snake, common lizard and slow worm are protected under Schedule 5 of the WCA 1981 (as amended) against intentional killing or injury.
- 4.4.2 Overall, the Site habitats were considered unlikely to support more than individual reptiles, such as grass snake, due to the limited size and scale of suitable habitats present across the Site. Therefore the loss of habitats is considered unlikely to impact reptiles at greater than the site level.
- 4.4.3 The following Best Practice Measures (BPM) are recommended with regards to reptiles (these will also help to protect common amphibians):
- All Site personnel to keep a high level of vigilance for reptiles (and amphibians) during works;
 - Good general housekeeping of the Site will be employed. All materials (construction materials/arising) on Site will be stored in a suitable location at least 5 m away from suitable reptile habitat, e.g woodland edge habitats, ideally risen off the ground (e.g. on pallets) or on hard stand/bare ground away from vegetation. Materials arising from the works should be removed from the Site as quickly as possible or placed in a skip or other sealed container immediately if stored on Site. This will avoid colonisation by reptiles and other wildlife and will ensure there is no build-up of debris or other waste which may create suitable habitats for protected species that then has to be removed at a later date; and,
 - Should reptiles be encountered works in the area will cease and an ecologist contacted immediately for advice.
- 4.4.4 It is recommended that rock piles are created from materials excavated during the construction of the ponds to create sheltering and basking areas. These should be created close to the ponds and on the 'butterfly banks', which would create sheltering, basking and foraging areas all in close proximities to one other.
- 4.4.5 Brash/wood piles could also be installed which would provide sheltering and hibernation opportunities for reptiles. These could be created from the wood that would be available from the removal of the fallen trees in the centre of the Site (TN1), should their removal be required.

4.5 Riparian Mammals

Otter

- 4.5.1 Otters within the UK are included in Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Under regulation 41 otters are protected from deliberate capture, injury or killing, from deliberate disturbance and from deliberate damage or destruction of a breeding site or resting place.
- 4.5.2 Otters are also included on Schedule 5 of the WCA 1981 (as amended). However, their protection is limited to certain offences. Under the 1981 Act (as amended) it is an offence to disturb otters while they occupy a structure or place used for shelter or protect; or obstruct access to a place of shelter or protection.
- 4.5.3 Otters are not considered to be resident on the Site; however, they are highly mobile species and have the potential to disperse on to areas of the Site and into working areas from known populations on the River Vyrnwy and the Montgomery Canal.
- 4.5.4 As such, it is recommended that an ECoW is in attendance when the works to the riverbank is being undertaken. The ECoW would undertake an update survey of the riverbank ahead of the works to ensure

that no new holts have been established in the proposed locations where the riverbank will be directly impacted.

4.5.5 Additionally, it is recommended that, BPM outlined below should be implemented which would offer protection for otters, should they subsequently pass through these areas of the Site.

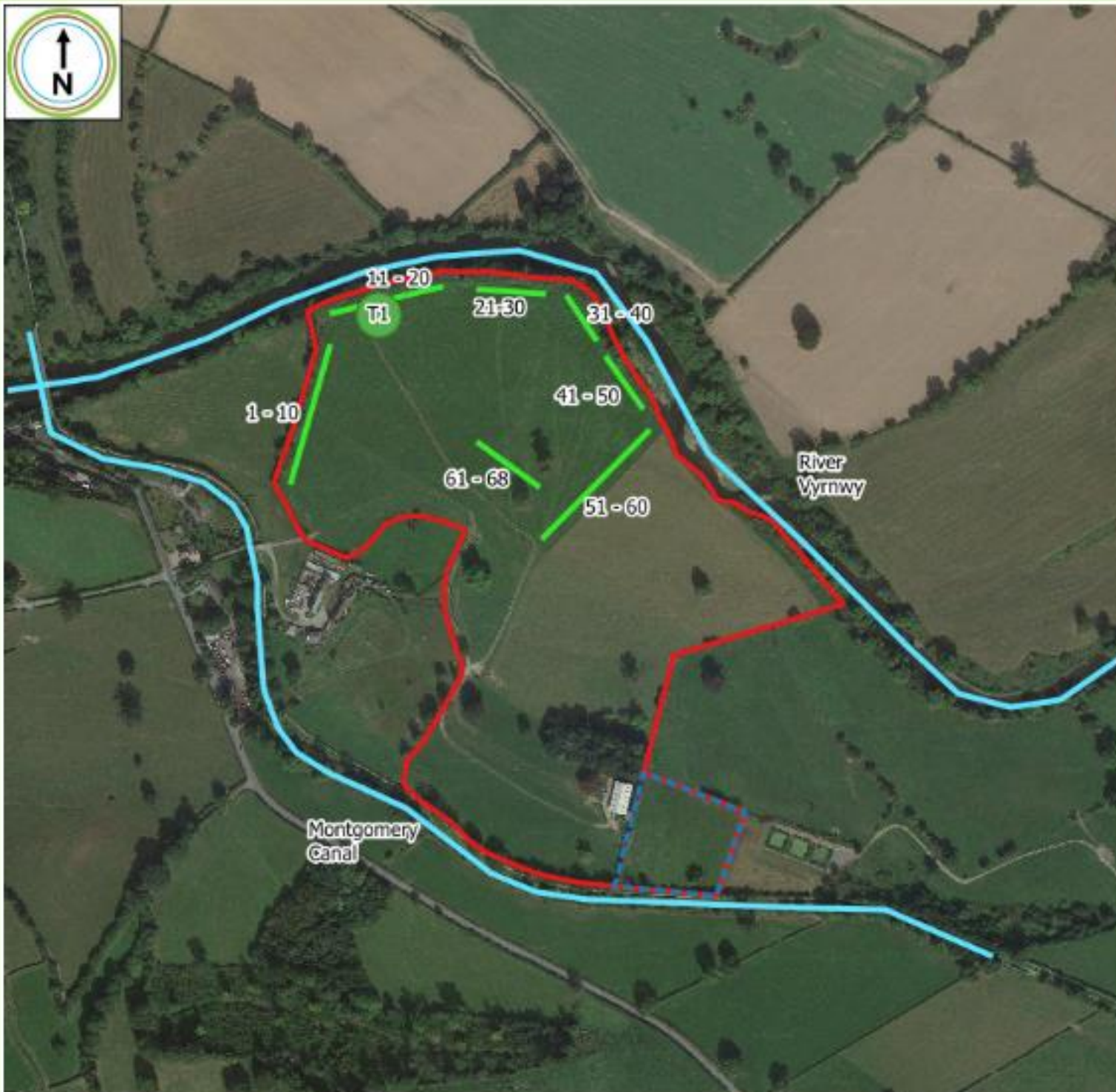
- Any excavations deeper than 1 m required during the works should be covered overnight. Shallow excavations less than 1 m should have a roughened scaffold board or equivalent placed in them overnight to allow any animals which may become trapped to exit. Trenches will also be inspected each morning to ensure that no animals have become trapped overnight;
- Food/litter will not be left on Site;
- If in the unlikely event that otters are encountered during works, then works will cease temporarily and the animal allowed to move away off its own volition. The ecologist will be contacted for advice; and,

4.5.6 Pollution Prevention Measures outlined within the Habitat Works (2025) Preliminary Ecological Appraisal (PEA) '*Vyrnwy Reserve – Update Preliminary Ecological Appraisal V1.0*' will also help to prevent indirect impact to the otter's habitat within the River Vyrnwy and the Montgomery Canal.

5. References

- Collins, J. (2023) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn)'. The Bat Conservation Trust, London.
- Habitat Works (2024) '*Vyrnwy Reserve – Bat Tree Surveys V1.0*'
- Habitat Works (2025) '*Vyrnwy Reserve – Update Preliminary Ecological Appraisal V1.0*'
- Stanbury A, Eaton M, Aebischer N, Balmer D, Brown A, Douse, A, Lindley, P, McCulloch N, Noble D and Win I (2015) '*The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Island and Isle of Man and second IUCN Red List assessment of*

Figure 1. Survey Map



Legend

- Reserve Boundary
- Disposal Area
- Tree 1 (T1)
- Reptile Refugia Locations
- Kingfisher, Otter and Water Vole Survey Areas

0 50 100 150 200 m



HABITAT WORKS

The Canal & River Trust

Vyrnwy Reserve
Further Protected Species Surveys

Figure 1
Survey Map