

Morgan Sindall

Trebanos WwTW

Preliminary Ecological Appraisal

Charlotte Alsop

COMMERCIAL IN CONFIDENCE



Client: Morgan Sindall
Project reference: P00009789
Date of issue: November 2022

Project Director: Jessica Kent
Project Manager: Lorna Rowe
Report Author: Charlotte Alsop

APEM Ltd
Riverview
A17 Embankment Business Park
Heaton Mersey
Stockport
SK4 3GN

Tel: 0161 442 8938
Fax: 0161 432 6083

Registered in England No. 02530851

Report should be cited as:

“APEM (2022). Trebanos WwTW - Preliminary Ecological Appraisal. APEM Scientific Report P000009789. Morgan Sindall, 02/11/2022, v1.0 Final.”

Revision and Amendment Register

Version Number	Date	Section(s)	Page(s)	Summary of Changes	Approved by
v1.0	28/10/2022	All	All	v1.0 for issue to Morgan Sindall	LR, JK

Contents

1.	Introduction.....	1
1.1	Purpose and Brief	1
1.2	Site Description	1
1.3	The Proposed Works	1
1.4	The Survey Area.....	1
2.	Methods	3
2.1	Desk Study	3
2.2	Field Survey	3
2.3	Limitations.....	4
3.	Results and Discussion	6
3.1	Statutory and Non-statutory Wildlife Sites	6
3.2	Habitats	7
3.3	Species.....	10
4.	Recommendations.....	21
5.	References.....	25
6.	Appendices	26
	Appendix 1: Figures.....	26
	Appendix 2: Photographs.....	29
	Appendix 3: Relevant Legislation	30

List of Tables

Table 1: Designated Sites	6
Table 2: Habitat Descriptions	8
Table 3: Preliminary Roost Assessment	12
Table 4: Recommendations	21

Non-Technical Summary	
Site Name	Trebanos Wastewater Treatment Works (WwTW)
Purpose and Brief	Preliminary Ecological Appraisal
Proposed Works	Dŵr Cymru Welsh Water (DCWW) propose to increase the size of the existing Trebanos WwTW. Further details of the proposed works are not available at the time of writing this report.
Methods	Desk study, Extended Phase 1 habitat survey and Preliminary Roost Assessment.
Survey Results and Conclusions	In the absence of mitigation and depending on the exact nature of the proposed works, the scheme has the potential to affect the following ecological receptors: • Tawe Corridor, Swansea Canal and NPT watercourses Sites of Interest for Nature Conservation (local non-statutory designated sites). • Priority habitats (woodland) • Badger and hedgehog • Bats • Nesting birds • Hazel dormouse • Otter • Reptiles The proposed scheme also has the potential to result in the spread of invasive non-native species.
Recommendations	Designated sites: Best practice pollution prevention methods (including dust and silt control) should be adhered to at all times during the construction phase. At no point during construction should any water be discharged into waterways (including the River Tawe). Priority Habitats: If it is not possible to avoid works (including vegetation clearance) within the woodland, then the works footprint in this habitat should be minimised as far as possible. Should any excavations be necessary within the woodland, it is recommended that liaison with an Arboricultural Consultant is undertaken. Any excavation works should be carried out in such a way that soil compaction is minimised to reduce the risk of damaging the roots of trees. Appropriate methods to minimise soil compaction should be set out (e.g. in contractor RAMs) and adhered to during all phases of the development. Badger and hedgehog: A pre-works check for badger setts within a 30 m buffer of the proposed works footprint should be carried out up to four weeks before the works commence. Best practice measures such as covering open pipework and excavations at the end of each day or installing mammal ramps should be adhered to, to avoid any mammals (and other wildlife) becoming trapped. Roosting bats: If B2, B3, T1 or T2 are to be removed / otherwise affected by the proposed scheme, then further targeted survey for roosting bats may be required. This includes a combination of inspection surveys and emergence / re-entry surveys. If any trees which have been assessed as having low potential for roosting bats are to be felled / heavily pruned, this should be

	done under supervision of a licensed bat ecologist. An EPS licence from NRW may be required, should impacts to roosting bats be unavoidable. Nesting birds: Any removal of scrub and / or trees should be undertaken outside of the nesting bird season (March to August inclusive) where possible. If this is not possible, vegetation should be checked by an ecologist prior to clearance. The pre-works check should be undertaken as close to and no longer than 48 hours prior to the vegetation removal taking place. If nesting birds are present, a buffer will be implemented around the nest, and works cannot proceed in this area until the chicks have fledged or the nest is deemed (by an ecologist) to be inactive. Hazel dormouse: The removal of scrub and woodland should be avoided. However, if this is not possible, further targeted survey (including presence / absence surveys) for dormice may be required. Should the presence of dormice on Site be confirmed, an EPS licence from NRW is likely to be required. Otter: The removal of scrub and woodland should be avoided, and the proposed works should avoid encroaching on the river bank. If this is not possible, further targeted survey for otter is recommended. Should it be confirmed that otters use the Site (particularly as a resting place), and impacts are unavoidable, an EPS licence from NRW may be required. Reptiles: The removal of scrub and woodland habitats at the Site should be avoided. If this is not possible, removal should be minimised as far as possible. Following receipt of detailed project proposals, and provided that vegetation removal is kept to a minimum, it is unlikely that further targeted survey for reptiles will be recommended¹. However, it is recommended an ecological clerk of works should be present to conduct checks for reptiles prior to and during any clearance of vegetation. Nocturnal wildlife: If additional lighting is a requirement (permanent and temporary) it should be reviewed by an ecologist prior to installation to assess the impacts to nocturnal wildlife (including bats, badger, hedgehog and otter). Invasive non-native species: Appropriate biosecurity measures should be set out (e.g. in contractor RAMs) and adhered to during all phases of the development.
--	--

¹ The removal of large areas of suitable reptile habitat is unlikely to be required to facilitate the proposed works, and a full reptile survey is likely to be disproportionate to the scheme. However

1. Introduction

1.1 Purpose and Brief

As part of a Dŵr Cymru Welsh Water (DCWW) scheme, APEM Ltd (APEM) was commissioned by Morgan Sindall to undertake a Preliminary Ecological Appraisal (PEA) for Trebanos Wastewater Treatment Works (WwTW), here after referred to as the 'Site'. The purpose of this PEA is to identify potential ecological constraints associated with the proposed scheme.

This report summarises the results of the desk study, describes habitats and features present on Site and assesses their potential to support protected species, either directly or in terms of a corridor for dispersal. This report also identifies any further surveys required in advance of the works, highlights potential impacts of the scheme on biodiversity and provides proportionate measures to avoid, reduce or compensate for these.

1.2 Site Description

The Site is located between the A4067 and B4603 at Trebanos, Neath Port Talbot (nearest postcode: SA7 9JE; NGR SN 71224 02343).

The Site is dominated by a mixture of improved and amenity grassland, broadleaved woodland, hardstanding, and structures associated with the WwTW. The Site is bordered by the River Tawe to the south and east; the Tawe corridor is designated as a Site of Interest for Nature Conservation (SINC). To the north and west, the Site is abutted by grazed pasture fields.

In the wider area, the Site is surrounded by a mixture of residential development and farmland, including a network of hedgerows and blocks of woodland.

1.3 The Proposed Works

Morgan Sindall (on behalf of DCWW) intend to increase the size of the existing WwTW at Trebanos. It is understood that the scheme could impact on buildings and natural habitats, though exact proposals have not been provided at the time of writing this report.

1.4 The Survey Area

The survey area for the PEA included:

- Areas directly within the land take for the proposed works.
- Areas which will be temporarily affected during the proposed works.
- Areas where there is a risk of disturbance during the proposed works and / or operation.

The survey area is shown on Figure 1 at the end of this report (see Appendix 1).

2. Methods

2.1 Desk Study

Data was requested from Aderyn (the local environmental records centre for Wales) including information on statutory and non-statutory designated sites and records of protected, invasive, or otherwise notable species within 2 km of the Site². Records were received on 14th July 2022 (Aderyn, 2022). Only species records from the last 20 years were considered relevant to the scheme, as older records are unlikely to be representative of current local species populations.

The desk study also involved a review of publicly available information including:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) website (DEFRA, 2022) for information relating statutory sites of nature conservation interest within 2 km of the Site.
- Google Earth aerial imagery (Google Earth, 2022) to contextualise the Site within the landscape and identify waterbodies within 0.5 km of the Site.

2.2 Field Survey

Field surveys were carried out by Lorna Rowe (Principal Ecologist) and Charlotte Alsop (Senior Ecologist) on 12th July 2022.

2.2.1 Extended Phase 1 Habitat Survey

During the Phase 1 habitat survey, all habitats were identified and mapped according to industry standard guidance for Phase 1 habitat survey (JNCC, 2010).

The survey was 'extended' to include an assessment of the habitats on Site for their suitability to support protected species, including:

- Badger (*Meles meles*)
- Bats (*Chiroptera* spp.)
- Great crested newt (*Triturus cristatus*) and other amphibians
- Hedgehog (*Erinaceus europaeus*)

² A central Ordnance Survey grid reference (SN 71173 02350) was provided to Aderyn; the search area was centred on this point.

- Hazel dormouse (*Muscardinus avellanarius*)
- Reptiles
- Otter (*Lutra lutra*)
- Water vole (*Arvicola amphibius*)
- White-clawed crayfish (*Austropotamobius pallipes*)
- Wild birds
- Protected plants
- Invasive non-native species (INNS)

2.2.2 Preliminary Roost Assessment

All trees and external elevations of structures and buildings were assessed for their potential to support roosting bats. Where safe access was possible, an internal inspection of buildings was also undertaken.

All inspections were carried out from ground level, using a high-powered torch and close-focusing binoculars. Details of potential roosting features (PRFs) were noted, and evidence of the presence of bats³ was searched for.

The potential for trees, structures, and buildings to support roosting bats was assessed and categorised according to industry standard guidelines (Collins, 2016).

2.3 Limitations

The results presented in this report represent those at the time of survey and reporting, and data collected from available sources.

Due to the confirmed presence of asbestos⁴, it was not possible to inspect the loft void of Building 2. It was also not possible to carry out an internal inspection of Building 3 during the survey⁵. Further survey (in the form of dusk emergence and dawn re-entry surveys)

³ Evidence of bats may include droppings, individual bats (live or dead), feeding remains, scratch marks, urine staining, grease marks and clean cobweb-free gaps around potential entrance points and crevice roost sites.

⁴ A warning sign was present inside the building, which confirmed the presence of asbestos in the ceiling tiles and boards.

⁵ Building 3 is inside a secure metal compound fence, which was locked at the time of survey.

have been recommended for these buildings (see Section 4.3), should they be affected by the proposed works; therefore, this is not considered to be a limitation to the survey.

The field to the west of the WwTW was surveyed from the field boundary as access had not been granted at the time of survey and livestock (horses) were present in the field. Although a detailed species list was not produced for this field, the habitat type present was easily identifiable due to its intensively managed condition, and this is not considered to be a limitation.

3. Results and Discussion

3.1 Statutory and Non-statutory Wildlife Sites

3.1.1 Designated sites

There is one statutory designated site located within 2 km of the Site⁶; Cwm Du Glen & Glanrhyd Plantation Local Nature Reserve (LNR). There are fourteen non-statutory designated sites located within 2 km of the Site, including thirteen SINC and one Wildlife Trust Reserve (WTR). Further details are provided in Table 1, below.

Table 1: Designated Sites

Site name	Designation	Distance and direction from Site (at its nearest point)
Statutory		
Cwm Du Glen & Glanrhyd Plantation	LNR (and SINC)	1.9 km north
Non-statutory		
NPT Watercourses	SINC	0 km – blanket designation for Neath Port Talbot
Tawe Corridor	SINC	0 km – immediately adjacent to the south and east of the Site
Swansea Canal	SINC	0.1 km west
Graig Ola – Cwm-cymach, Glais	SINC	0.3 km south east
Gelli-Onnen	SINC	0.4 km west
Craig Cilhendre Woods	WTR	0.4 km south east
Pandy Farm	SINC	0.7 km north east
Mynydd Gellionnen	SINC	1.4 km north west
Coniston	SINC	1.5 km west
Cathelyd Uchaf Moor	SINC	1.5 km north west
Birchgrove Hill – Mynydd Drummau	SINC	1.6 km south
Dyffryn Woods	SINC	1.7 km south east
Fferm Alltwenganol	SINC	1.7 km north east

⁶ The Glais Moraine SSSI is also located on the edge of the search area, approximately 2 km to the south-west of the Site. However, the SSSI is designated for its geomorphological features and is not of ecological interest. This site has been omitted from the results.

3.1.2 Potential for Adverse Effects

The proposed works are confined to the footprint of the operational WwTW, adjacent field and woodland. The zone of influence (Zoi) to non-statutory sites is likely to be those located adjacent to or within 200m of the Site, or those which have hydrological connectivity to the Site. Non-statutory sites which fall within the Zoi include the Tawe Corridor and Swansea Canal SINCs, as well as the blanket SINC designation to all watercourses in Neath Port Talbot (NPT).

Due to the small scale of the proposed works⁷, no direct effects on the Tawe Corridor, Swansea Canal or NPT watercourses SINCs are anticipated. However, in the absence of mitigation, the proposed works have the potential to indirectly affect these sites through pollution or surface run-off during the construction phase.

Due to the intervening distances between the remaining designated sites and the proposed works area, and lack of impact pathways (hydrological or terrestrial), adverse effects to the remaining designated sites (both statutory and non-statutory) are not anticipated.

3.2 Habitats

3.2.1 Habitat descriptions

The habitats present at the Site are described in Table 2. A Phase 1 habitat map, including target notes, is provided in Appendix 1 (Figure 2), and photographs are presented in Appendix 2.

⁷ The proposed works will be confined to areas within the WwTW, adjacent field and woodland. The works area will not extend into any watercourses.

Table 2: Habitat Descriptions

Habitat	Description	Species present
A1.1.1 Semi-natural broadleaved woodland	A small block of woodland is present at the northern edge of the WwTW (Photograph 3). A belt of woodland is also present along the eastern and southern boundaries of the Site, along the banks of the River Tawe.	Canopy: sycamore (<i>Acer pseudoplatanus</i>), oak (<i>Quercus robur</i>), silver birch (<i>Betula pendula</i>), silver polar (<i>Populus alba</i>), black poplar (<i>Populus nigra</i>) elder (<i>Sambucus nigra</i>), horse chestnut (<i>Aesculus hippocastanum</i>), alder (<i>Alnus glutinosa</i>), ash (<i>Fraxinus excelsior</i>) Understory: willow (<i>Salix</i> sp.), hawthorn (<i>Crataegus monogyna</i>), bramble (<i>Rubus fruticosus</i>), dogwood (<i>Cornus sanguinea</i>), Himalayan balsam (<i>Impatiens glandulifera</i>), Japanese knotweed (<i>Fallopia japonica</i>). Ground Flora: ivy (<i>Helix helix</i>), common nettle (<i>Urtica dioica</i>), nightshade (<i>Atropa belladonna</i>), cleavers (<i>Galium aparine</i>), hart's-tongue fern (<i>Asplenium scolopendrium</i>).
A2.1 Scrub	An area of dense scrub is present within the WwTW, adjacent to the woodland in the northern part of the Site. Other small patches of scrub are scattered across the Site.	Japanese knotweed (dominant), Himalayan balsam, bramble, spear thistle (<i>Cirsium vulgare</i>), horsetail (<i>Equisetum</i> sp.), false oat-grass (<i>Arrhenantherum elatius</i>), cock's foot (<i>Dactylus glomerata</i>), crested dog's tail (<i>Cynosaurus cristatus</i>), common nettle, sweet vernal grass (<i>Anthoxanthum odoratum</i>), hogweed (<i>Heracleum sphondylium</i>), common vetch (<i>Vicia sativa</i>).
A3.1 Scattered trees	Several scattered trees are present within the Site.	Oak, Leyland cypress (<i>Cupressus leylandii</i>), hawthorn, sycamore.
B4 Improved grassland	The field to the west of the WwTW comprises improved grassland, which was heavily grazed by horses (Photograph 4) at the time of survey. The sward was short	N/A – no access to field (see paragraph 2.3).

	(< 5 cm) and of low species diversity.	
C3.1 Tall ruderal	An area of tall ruderal vegetation is present along the boundary of the Site, to the south of the main WwTW area.	Rosebay willowherb (<i>Chamaenerion angustifolium</i>). One goat willow (<i>Salix caprea</i>) is present amongst the tall ruderal.
J1.2 Amenity grassland	Several areas of managed grassland are present across the WwTW. The sward height is approximately 5 – 15 cm (Photograph 1). The grassland is regularly maintained (mown) as part of the operational WwTW.	Perennial rye-grass (<i>Lolium perenne</i>), cock's foot, Yorkshire fog (<i>Holcus lanatus</i>), selfheal (<i>Prunella vulgaris</i>), red clover (<i>Trifolium pratense</i>), white clover (<i>Trifolium repens</i>), ribwort plantain (<i>Plantago lanceolata</i>), cinquefoil (<i>Potentilla reptans</i>), creeping buttercup (<i>Ranunculus repens</i>), common daisy (<i>Bellis perennis</i>), bird's-foot trefoil (<i>Lotus corniculatus</i>), broadleaved dock (<i>Rumex obtusifolius</i>).
J3.6 Buildings / Structures	Three buildings and numerous other built structures associated with the WwTW are present on Site. Please refer to Section 3.3.3 for further information.	N/A
J5 Hardstanding	Hardstanding access tracks and paths are present within the WwTW (Photograph 2).	N/A

3.2.1.1 Ecological Importance and Potential Impacts

The broadleaved woodland at the Site qualifies as a Priority Habitat (Welsh Government, 2016), and is likely to be important at the local level. At the time of writing this report, no detailed project design has been provided by Morgan Sindall. Depending on the scope of the works, the project has the potential to directly impact the woodland through habitat removal and degradation. The project may also indirectly affect the woodland through pollution (e.g., through surface run-off), and root compaction.

The scattered trees, scrub and tall ruderal habitats are of ecological value due to their potential to support protected species (such as birds and mammals) and are likely to be important at the Site level. Depending on the scope of the works, the project has the potential

to directly impact these habitats through habitat removal and degradation. The project may also indirectly affect these habitats through pollution and root compaction.

The grassland habitats located within the Site are of very low ecological importance due to their lack of species diversity, and the hardstanding is of negligible ecological importance.

3.3 Species

Below is a summary of the likely status of relevant protected and notable species within and immediately adjacent to the Site within a 2 km buffer.

3.3.1 Amphibians

Twenty-five records for amphibians were returned by the local records centre (Aderyn, 2022), including for common frog (*Rana temporaria*), common toad (*Bufo bufo*), smooth newt (*Lissotriton vulgaris*), and palmate newt (*Lissotriton helveticus*). The nearest amphibian record is for a common frog, approximately 0.2 km to the north of the Site, at the edge of a residential area. No records of great crested newt (GCN) were provided.

The woodland and scrub on Site offer suitable habitat for common species of amphibian such as common frog and common toad. Should the proposed scheme include the removal of scrub and / or woodland, there is the potential to directly affect common species of amphibian through killing or injuring animals during construction, and through habitat loss.

The woodland and scrub offer suitable terrestrial habitat for GCN, for foraging, shelter and hibernation. The nearest waterbody which may be suitable for breeding is located approximately 0.4 km from the Site. However, it is physically separated from the Site by the River Tawe and a main road (A4067) which are likely to limit the movement of GCN into the Site. No other suitable waterbodies are located within 0.5 km of the Site. Furthermore, the Site is located at the very edge of the known range of GCN in Wales (Haysom, et al., 2018). Therefore, it is considered unlikely that GCN are present at the Site, and the risk of adverse effects (direct or indirect) to GCN is very low, as a result of the proposed scheme. This species has been scoped out of further assessment in this report.

3.3.2 Badger

Two records for badger were returned in the data search (Aderyn, 2022). Both of these records were recorded in 2018, to the east of the Site.

No evidence of badger was recorded on Site during the survey. However, the grassland, scrub and woodland at the Site provide suitable foraging habitat for badgers and the woodland is also suitable for sett building. Badger are a mobile species, and it is possible that badger may use the Site for foraging or sett building, prior to the commencement of the scheme.

Should badger be present on Site, the proposed scheme has the potential to directly affect the species through damage to setts, injury or entrapment of animals (and other mammals) during construction, and loss of habitat. If additional lighting is required (temporary or permanent), this could also indirectly affect badgers through disturbance.

3.3.3 Bats

Aderyn returned sixty-five records of bats in the data search (Aderyn, 2022), including for the following species: brown long-eared bat (*Plecotus auratus*), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*), noctule (*Nyctalus noctula*) and soprano pipistrelle (*Pipistrellus pygmaeus*). The closest record is located approximately 0.2 km to the south of the Site and is for a soprano pipistrelle foraging / commuting along the Swansea Canal in 2015. Of the sixty-five records returned, twenty-one were for bat roosts (or possible roosts); all other records are for foraging / commuting bats, or injured animals. The nearest bat roost record is located within a residential area approximately 0.2 km to the north west of the Site, and is for a pipistrelle bat (species unconfirmed) recorded in 2002.

The scrub and woodland habitats present at the Site offer suitable foraging and commuting habitat to bats. The other habitats (including improved / amenity grassland and hardstanding) are likely to be of very low importance to foraging bats, as they are unlikely to support an abundance of invertebrate prey on which bats may feed.

Results of the Preliminary Roost Assessment are provided in Table 3, overleaf, and displayed in Figure 3. Only two trees are included in Table 3; these trees were assessed as having moderate potential for roosting bats. All other scattered trees within the Site were assessed as having negligible – low potential for roosting bats (see Figure 3). The individual trees within the woodland were not assessed for their potential for roosting bats.

Table 3: Preliminary Roost Assessment

Building / Tree Reference	Description	Suitability to Support Roosting and Hibernating Bats	Photographs
B1	A concrete building with pebbledash render, and a flat concrete roof with (peeling) bitumen felt. The inside of the building comprised one large open space, with concrete ceiling, walls and floor.	No PRFs were identified. There were no gaps under the edge of the roofing felt suitable for use by roosting bats. Gaps were present around the edges of the rolling shutter door, and open windows and doors allow access into the internal space. However, it is an operational building; lights were on inside the building at the time of survey (and are likely to be on during the daytime), and the windows allow daylight into the building. Bats are unlikely to roost inside a brightly lit room, and there were no dark cavities / crevices present in which bats could roost. Negligible potential to support roosting bats and hibernating bats.	 

B2	A concrete L-shaped building with pebbledash render. The building comprised two main rooms, connected by a corridor. Each of the main rooms had a pitched slate roof, and the corridor had a flat roof with a bitumen felt covering. PVC soffits were present around the entirety of the building.	There were some small gaps under roof tiles and ridge tiles, which may provide shelter for roosting bats, or access into the internal roof void. There were several holes under the edge of the soffits, but these are mostly too small to allow access for bats. There was one hole under the soffit on the western corner, and a gap under the soffit on the south-western aspect, which may be large enough to allow access for bats. Gaps above the double doors on the south-eastern aspect appeared to lead into the soffits. The soffits may lead into a roof void; however, it was not possible to confirm this from an external ground level assessment⁸. Moderate potential for roosting bats, including hibernating bats.	
----	---	---	---

⁸ There is confirmed asbestos within the building, including in the ceiling tiles; an internal inspection of roof space is not recommended. The suitability assessment has been made on the assumption that the loft void is suitable for use by roosting bats and is accessible via gaps in the soffits and ridge tiles.

B3	A small concrete building with PVC doors and fascia. The building had a corrugated flat roof (possible asbestos material).	There was a crevice under the corrugated roof material and gaps under the fascia. These may provide some shelter for roosting bats, or access into the internal space. However, the internal space of the building is likely to be on open area, with no smaller cavities / crevices suitable for use by roosting bats. Low potential for roosting bats, including hibernating bats.	
----	---	---	---

T1	Semi-mature oak tree (OSGR: SN 7114 0231)	Large pruning cut which may lead to a cavity suitable for use by bats (not possible to confirm from ground level). Moderate potential for roosting bats, including hibernating bats.	
----	---	---	---

T2	Mature oak tree (OSGR: SN 7117 0226)	Several pruning cuts which may lead to cavities suitable for use by roosting bats (not possible to confirm from ground level). Moderate potential for roosting bats, including hibernating bats.	
----	--------------------------------------	---	---

Depending on the scope of the works, the proposed scheme has the potential to affect roosting bats, through killing, injury and disturbance during construction. The proposed scheme also has the potential to directly affect the local bat population through loss of potential roost sites, as well as foraging and commuting habitat (scrub and woodland).

If additional lighting is required (either temporary or permanent), this could indirectly impact roosting, foraging and commuting bats through disturbance.

3.3.4 Birds

Aderyn returned 659 records for birds as part of the data search (Aderyn, 2022). Of these records, ten are from within the WwTW⁹; these records are for black-headed gull (*Chroicocephalus ridibundus*), bullfinch (*Pyrrhula pyrrhula*), common gull (*Larus canus*), goldcrest (*Regulus regulus*), great black-backed gull (*Larus marinus*), lapwing (*Vanellus vanellus*), long-tailed tit (*Aegithalos caudatus*), Mediterranean gull (*Ichthyaeetus melanocephalus*), red kite (*Milvus milvus*) and redwing (*Turdus iliacus*).

The latter three of the species listed above are Schedule 1 species (HMSO, 1981). Records for a further ten Schedule 1 species were returned by Aderyn, including: barn owl (*Tyto alba*), brambling (*Fringilla montifringilla*), fieldfare (*Turdus pilaris*), goshawk (*Accipiter gentilis*), honey buzzard (*Pernis apivorus*), hobby (*Falco subbuteo*), kingfisher (*Alcedo atthis*), osprey (*Pandion haliaetus*), peregrine (*Falco peregrinus*) and wryneck (*Jynx torquilla*).

The scrub and woodland on Site provide suitable nesting habitat for a range of bird species, and birds may also nest in some of the buildings and structures within the WwTW. However, the Site is well outside of the breeding range or does not provide suitable nesting habitat for any of the Schedule 1 species returned by Aderyn¹⁰. The improved grassland, amenity grassland and hardstanding are of poor suitability for nesting birds.

If any vegetation clearance is undertaken during the breeding season (March – August inclusive), the proposed scheme has the potential to directly affect nesting birds through killing or injuring animals, or the destruction of nests, during the construction phase. The scheme also has the potential to indirectly affect breeding birds through habitat loss.

⁹ One record was returned for each species within the WwTW. The sightings were all recorded between 2009 and 2011.

¹⁰ The Schedule 1 species which were recorded within the WwTW were all recorded outside of the breeding season. The Site is also well outside of the breeding range for Mediterranean gull and redwing, and does not provide sufficient nesting habitat for red kite.

3.3.5 *Hazel dormouse*

No records for hazel dormouse were returned by the local records centre (Aderyn, 2022). However, there are records for dormouse within 5 km of the Site, held by NBN Atlas (National Biodiversity Network, 2022).

The woodland and dense scrub present at the Site is suitable for use by dormice. Depending on the scope of the works, the proposed scheme has the potential to directly affect dormice through killing or injuring animals and disturbance during the construction phase, as well as loss of habitat. If additional lighting is required (temporary or permanent), this could also cause indirect effects through light pollution and disturbance.

3.3.6 *Hedgehog*

Thirty-seven records for hedgehog were returned as part of the data search (Aderyn, 2022), primarily from residential areas to the north east and south west of the Site. The nearest record for hedgehog is located 0.15 km to the north west of the Site.

The scrub and woodland offer suitable foraging and nesting habitat for the hedgehog, and the grassland habitats may also be used for foraging.

The proposed scheme has the potential to directly affect hedgehogs through killing or injury during the construction phase and habitat loss. The proposed scheme may also indirectly affect hedgehogs through increased lighting.

3.3.7 *Invertebrates*

No records of fully protected (HMSO, 1981) invertebrates were returned by the local records centre (Aderyn, 2022).

The majority of the Site is dominated by improved grassland, amenity grassland and hardstanding / buildings. These habitats are unlikely to support a diverse assemblage of invertebrates. Adverse effects on invertebrates are likely to be restricted to temporary displacement during vegetation clearance, should it be required. No long-term effects are anticipated, and invertebrates are scoped out of further assessment in this report.

3.3.8 *Otter and water vole*

Aderyn returned 32 records for otter within the search area, the nearest of which was recorded in the River Tawe immediately adjacent to the Site in 2011. The majority of records returned for otter are from along the River Tawe or the Upper Clydach River.

The River Tawe supports an abundance of prey for otter, and likely provides suitable habitat for holts and other resting places along its banks. The woodland and scrub habitats within the Site offer suitable terrestrial habitat for otters to lay up. Although no evidence of otter was identified during the survey, it is considered likely that otters access the Site on a regular basis.

Depending on the scope of the works, the proposed scheme has the potential to directly affect otters through killing / injuring animals, disturbance during the construction phase and habitat loss. If additional lighting is required (temporary or permanent), this could also cause indirect effects through light pollution and disturbance.

No records of water vole were returned in the data search (Aderyn, 2022), and no evidence of water vole was recorded on Site during the survey. The River Tawe is not considered suitable for water vole due to the fast-flowing water, and there are no suitable habitats for water vole within the Site boundary. No adverse effects to water vole are anticipated, and this species is scoped out of further assessment in this report.

3.3.9 Reptiles

Sixteen records for reptiles were returned by the local records centre (Aderyn, 2022), including for common lizard (*Zootica vivipara*), grass snake (*Natrix helvetica*) and slow worm (*Anguis fragilis*). The nearest record is for a grass snake, located approximately 0.5 km to the south west of the Site.

The scrub and woodland habitats within the Site are suitable for use by reptiles, including for foraging, shelter and hibernation. The grassland habitats within the Site may provide some limited foraging opportunities for reptiles, but these habitats are intensively mown or grazed, and offer little shelter for reptiles. Therefore, reptiles (if present) are likely to remain in grassland at the edge of scrub and woodland and are unlikely to be present in the centre of the WWTW or horse grazed fields.

Depending on the scope of works, the proposed scheme has the potential to directly affect reptiles through killing or injuring animals during the construction phase, and loss of habitat.

3.3.10 White-clawed crayfish

No records for white-clawed crayfish were returned by Aderyn (Aderyn, 2022). The Site is well outside of the known range for white-clawed crayfish (Buglife, 2013), and there are no suitable habitats for white-clawed crayfish within the Site boundary.

No adverse effects to white-clawed crayfish are anticipated as a result of the proposed scheme. This species has been scoped out of further assessment in this report.

3.3.11 Invasive species

No records of INNS were returned by Aderyn in the data search (Aderyn, 2022). However, Japanese knotweed and Himalayan balsam are present across much of the Site (see Figure 2) and montbretia (*Crocasmia x crocosmiiflora*) was recorded near to B2 (at TN2); these species are all INNS, listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981). Horsetail (*Equisetum* sp.) was also recorded near to B2 (at TN2) during the survey. Horsetail is not a Schedule 9 species, but is widely considered to be an invasive species.

The proposed scheme has the potential to result in the spread of these species within and outside of the Site.

4. Recommendations

Recommendations to avoid and mitigate for ecological impacts are provided in Table 4, below.

These recommendations should be reviewed upon receipt of detailed project proposals (including a proposed site layout).

Table 4: Recommendations

Ecological Receptor	Recommendation
Designated sites	Best practice pollution prevention methods (including dust and silt control) should be adhered to at all times during the construction phase. At no point during construction should any water be discharged into waterways (including the River Tawe).
Priority Habitats	Any works (including vegetation clearance) within the woodland should be avoided. However, if this is not possible, then the works within the woodland should be minimised as far as possible. Should vegetation clearance within the woodland be necessary, additional planting may be required to compensate for the loss of priority habitats. The requirement for additional planting should be assessed upon receipt of detailed project proposals. Should any excavations be necessary within the woodland, it is recommended that liaison with an Arboricultural Consultant is undertaken. Any excavation works should be carried out in such a way that soil compaction is minimised to reduce the risk of damaging the roots of trees. Appropriate methods to minimise soil compaction should be set out (e.g. in contractor RAMs) and adhered to during all phases of the development.
Badger and hedgehog	A pre-works check for badger setts within a 30 m buffer of the proposed works footprint should be carried out up to four weeks before the works commence. Any vegetation clearance within the woodland and scrub should be carried out under supervision by an ecologist. Best practice measures such as covering open pipework and excavations at the end of each day or installing mammal ramps should be adhered to, to avoid any mammals (and other wildlife) becoming trapped.

Roosting bats	B2 – If this building is to be removed or otherwise affected by the proposed scheme, then further targeted survey for roosting bats is likely to be required. These surveys should comprise a minimum of two emergence / re-entry surveys in line with industry standard guidance for buildings with moderate potential to support roosting bats (Collins, 2016). These must be undertaken between May and August (weather dependent), a minimum of two weeks apart. Please note, due to the confirmed presence of asbestos in the ceiling tiles and elsewhere in B1, an internal inspection of the loft void is not recommended. B3 – If this building is to be removed or otherwise affected by the proposed scheme, then further targeted survey for roosting bats is likely to be required. A minimum of one emergence or re-entry survey should be conducted in line with industry standard guidance for buildings with low potential to support roosting bats (Collins, 2016). Subject to health and safety¹¹, it is recommended that an internal inspection is undertaken prior to the emergence / re-entry survey. T1 and T2 – Should it be necessary to fell or heavily prune either of these trees, further survey for bats may be necessary. An ecologist should be consulted to determine the survey approach. This may include a climbed / ladder inspection using an endoscope and up to two emergence / re-entry surveys during the active season (March – October inclusive). If any of the trees which have been assessed as having low potential for roosting bats (see Figure 3) are to be felled or heavily pruned, this should be done under supervision of a licensed bat ecologist. Should roosting bats be present in any of the buildings or trees on Site, a European Protected Species (EPS) licence may be required from Natural Resources Wales (NRW).
----------------------	--

¹¹ A risk assessment will be produced for any internal access, including a review of available information relating to asbestos. It is presumed that DCWW will be able to provide an up to date asbestos register in order to inform the risk assessment. Should an up to date asbestos register not be made available, or there is the confirmed presence of asbestos within B3, then no internal inspection will take place.

Nesting birds	Any removal of scrub and / or trees should be undertaken outside of the nesting bird season (March to August inclusive) where possible. If this is not possible, vegetation should be checked by an ecologist prior to clearance. The pre-works check should be undertaken as close to and no longer than 48 hours prior to the vegetation removal taking place. If nesting birds are present, a buffer will be implemented around the nest, and works cannot proceed in this area until the chicks have fledged or the nest is deemed (by an ecologist) to be inactive.
Hazel dormouse	The removal of scrub and woodland should be avoided. However, if this is not possible, further targeted survey (including presence / absence surveys) for dormice may be required. Should the presence of dormice on Site be confirmed, an EPS licence from NRW is likely to be required.
Otter	The removal of scrub and woodland should be avoided, and the proposed works should avoid encroaching on the river bank. If this is not possible, further targeted survey for otter is recommended. Should it be confirmed that otters use the Site (particularly as a resting place), and adverse effects are unavoidable, an EPS licence from NRW may be required. Best practice measures such as covering open pipework and excavations at the end of each day or installing mammal ramps should be adhered to, to avoid any otters (and other wildlife) becoming trapped.
Reptiles	The removal of scrub and woodland habitats at the Site should be avoided. If this is not possible, removal should be minimised as far as possible. Following receipt of detailed project proposals, and provided that vegetation removal is kept to a minimum, it is unlikely that further targeted survey for reptiles will be recommended¹². However, it is recommended an ecological clerk of works should be present to conduct checks for reptiles prior to and during any clearance of vegetation.

¹² The removal of large areas of suitable reptile habitat is unlikely to be required to facilitate the proposed works, and a full reptile survey is likely to be disproportionate to the scheme. However

Nocturnal wildlife	If additional lighting is a requirement (permanent or temporary) it should be reviewed by an ecologist prior to installation to assess the effects to nocturnal wildlife (including foraging and commuting bats, badger, hedgehog and otter).
Invasive non-native species	Appropriate biosecurity measures should be set out (e.g. in contractor RAMs) and adhered to during all phases of the development. If removal of soil at the Site is required, liaison with an invasive non-native species special should be undertaken.

This report and its conclusions are valid for a maximum period of two years from the survey date, unless there is significant change to the status of habitats on Site (e.g. caused by deterioration in condition) or surrounding landscape during this time.

5. References

- Aderyn, 2022. *Trebanos Data Search; ID 6982982*, Brecon: LERC Wales' Biodiversity Information & Reporting Database.
- Buglife, 2013. *Species Management Sheet: White-clawed Crayfish (Austropotamobius pallipes)*, Peterborough: Buglife.
- Collins, J., 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.)*, London: The Bat Conservation Trust.
- DEFRA, 2022. *Multi-Agency Geographic Information for the Countryside*. [Online] Available at: <https://magic.defra.gov.uk/MagicMap.aspx>
- Google Earth, 2022. *Google Earth*. [Online] Available at: https://www.google.co.uk/intl/en_uk/earth/
- Haysom, K. et al., 2018. *Review of the Current Conservation Status (CCS) of the Great Crested Newt in Wales, with specific references to its long-term prospects and within its stronghold in North-East Wales.*, s.l.: Amphibian and Reptile Conservation Trust.
- HMSO, 1981. *The Wildlife and Countryside Act (as ammended)*, London: Her Majesty's Stationary Office.
- JNCC, 2010. *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. s.l.:Joint Nature Conservation Committee.
- National Biodiversity Network, 2022. *NBN Atlas*. [Online] Available at: <https://nbnatlas.org/> [Accessed October 2022].
- Welsh Government, 2016. *Section 7. Environment (Wales) Act*, Cardiff: Welsh Government.

6. Appendices

Appendix 1: Figures



Figure 1. Site Location Plan

Figure 2. Extended Phase 1 Habitat Survey Map

(overleaf)



© Google Maps 2022



© Google Maps 2022

Legend

-  Survey area
-  Target notes
- Phase 1 habitats
 -  A1.1.1 - Semi-natural broadleaved woodland
 -  A2.1 - Dense scrub
 -  A2.2 - Scattered scrub
 -  A3.1 - Scattered trees
 -  B4 - Improved grassland
 -  C3.1 - Tall ruderal
 -  J1.2 - Amenity grassland
 -  J3.6 - Buildings
 -  J5 - Other habitat
 -  Japanese Knotweed

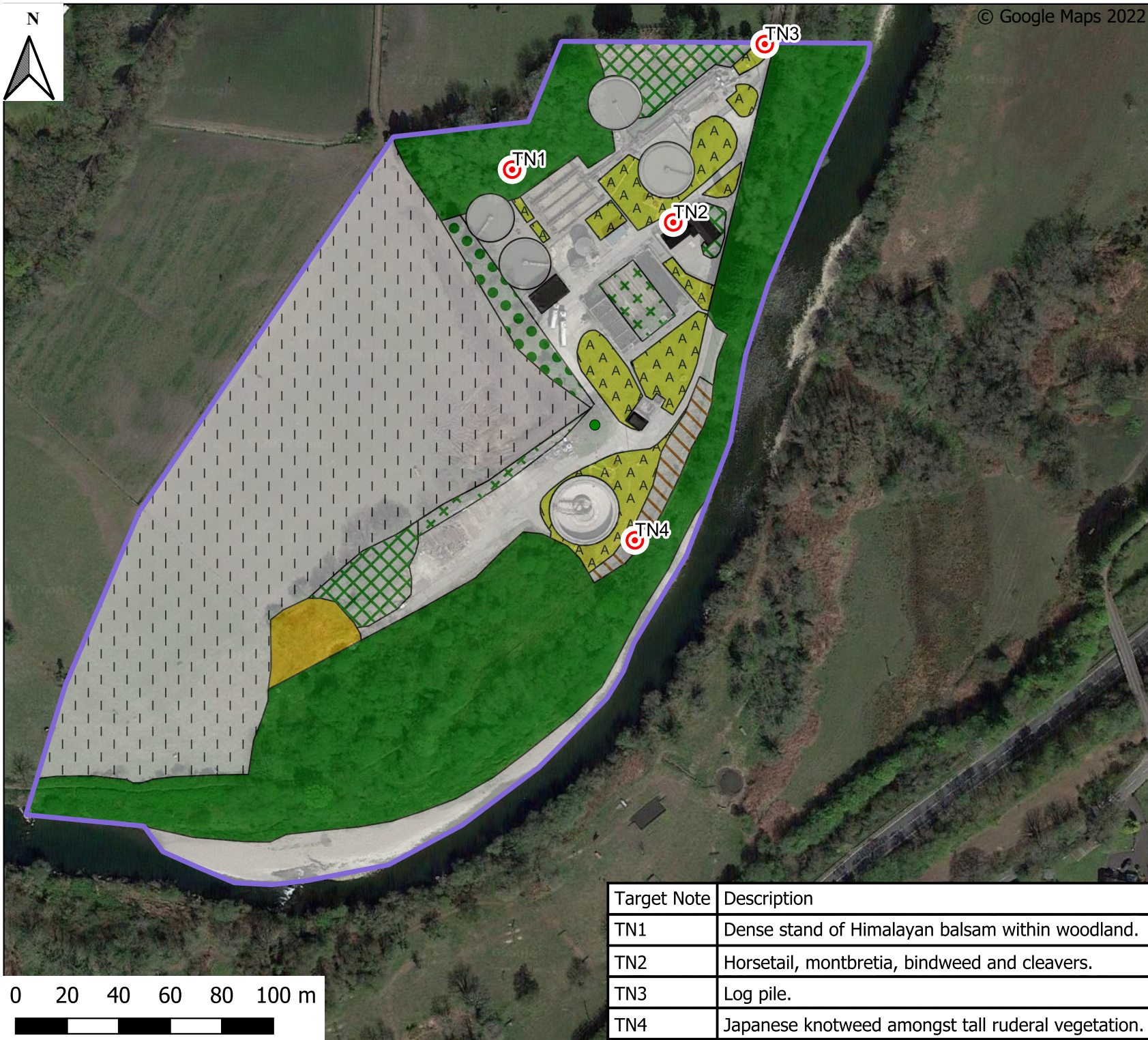


P9789

Trebanos WwTW - Phase 1 Habitat Survey Map

Morgan
Sindall

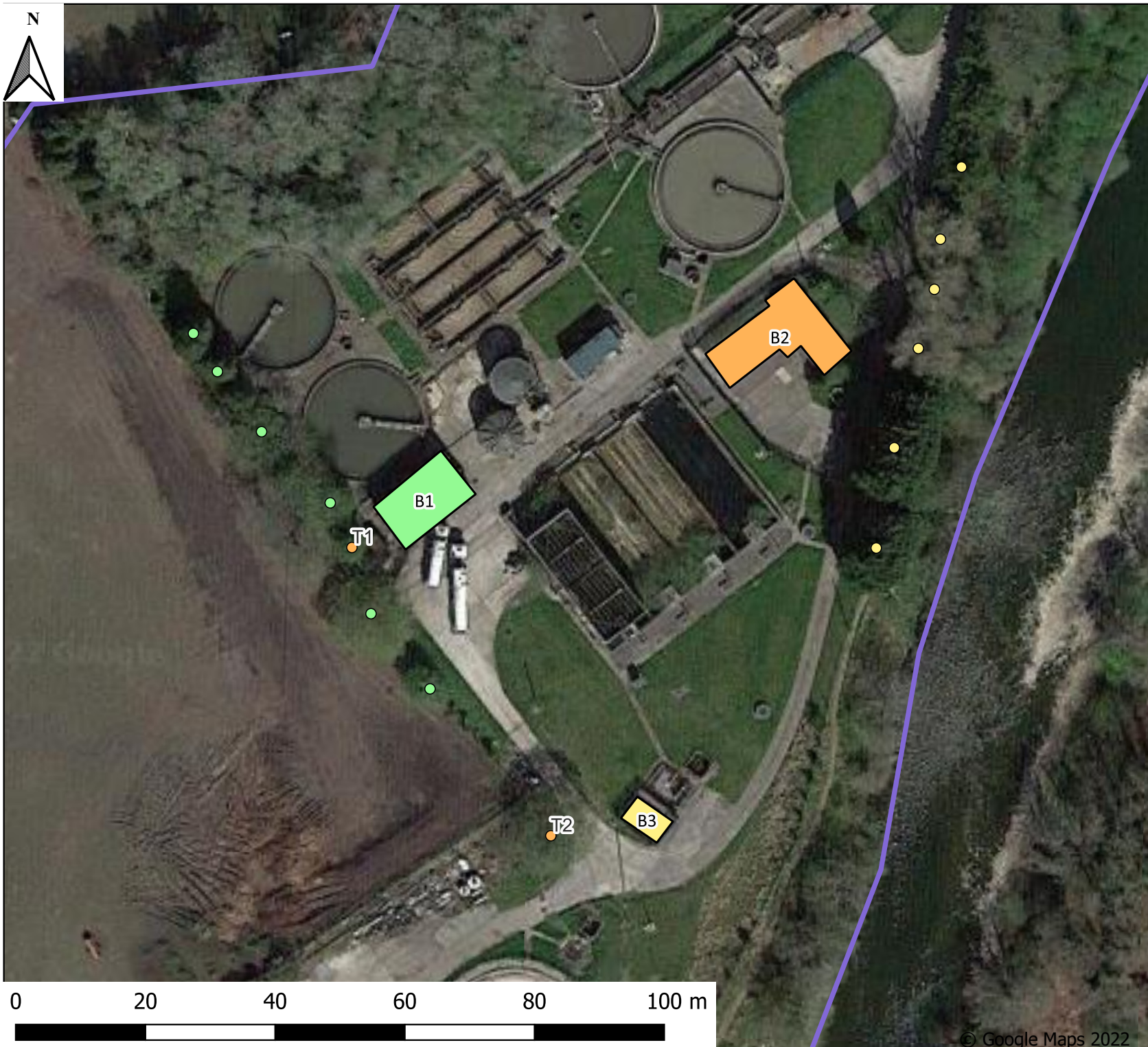
25/10/2022



Target Note	Description
TN1	Dense stand of Himalayan balsam within woodland.
TN2	Horsetail, montbretia, bindweed and cleavers.
TN3	Log pile.
TN4	Japanese knotweed amongst tall ruderal vegetation.

Figure 3. Potential Roost Assessment

(overleaf)



Legend

 Survey area

Bat roosting potential

Trees

-  Negligible
-  Low
-  Moderate

Buildings

-  Negligible
-  Low
-  Moderate

	P9789
Trebanos WwTW - Potential Roost Assessment	
Morgan Sindall	25/10/2022

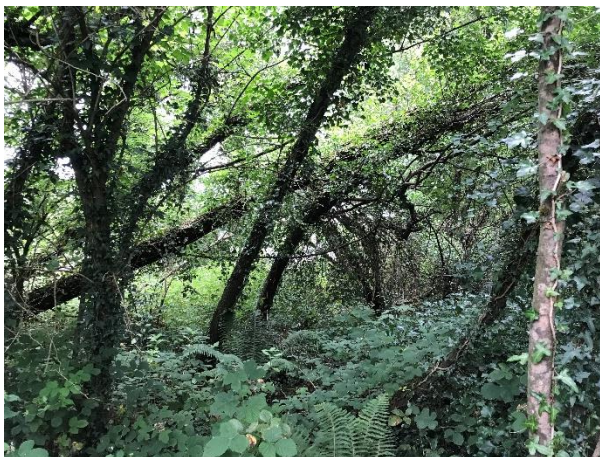
Appendix 2: Photographs



Photograph 1: Amenity grassland in the centre of the Site.



Photograph 2: Hardstanding and built structures associated with the WwTW.



Photograph 3: Broadleaved woodland at the northern edge of the WwTW.



Photograph 4: Improved grassland (horse paddock) to the west of the WwTW.

Appendix 3: Relevant Legislation

Badgers

Badgers are protected under the Protection of Badgers Act 1992, in England and Wales. It is not permitted to:

- Wilfully kill, injure, take, possess, or cruelly ill-treat a badger (or attempt to do so).
- Intentionally or recklessly damage or destroy a sett or obstruct access to it.
- Cruelly ill-treat a badger.
- Disturb a badger whilst they are occupying a sett.
- Dig for a badger.
- Cause a dog to enter a badger sett.

Bats

In the United Kingdom (UK) all bat (*Chiroptera* spp.) species and their roosts are legally protected, by national legislation. This protection is detailed in the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981) and the Conservation of Habitats and Species Regulations 2019 (amendment (EU Exit)) (HMSO, 2019).

Taken together, these pieces of legislation make it a criminal offence to:

- Intentionally or deliberately capture, injure, or kill a wild bat.
- Possess or control any live or dead specimens, part, or derivative.
- Deliberately disturb a bat or group of bats.
- Intentionally, deliberately, or recklessly damage or destroy a breeding site or resting site (roosts) or obstruct access to such a place.

Several bat species are also included as ‘Species of Principal Importance’ for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act (2006) and ‘Priority Species’ under Section 7 of the Environment (Wales) Act 2016. These Acts are meant to confer a ‘duty of responsibility’ to public bodies.

Wild Birds

All nesting and nest building birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981). It is an offence to:

- Intentionally kill, injure, or take any wild bird.
- Take, damage, or destroy the nest of any wild bird whilst in use or is being built.
- Take or destroy an egg of any wild bird.

Additional protection is given to some rare species (listed in Schedule 1 of the Act) where it is an offence to intentionally or recklessly to:

- Disturb a Schedule 1 bird while it is nest building or at or near a nest containing eggs or young
- Disturb dependent young of a Schedule 1 bird

Hazel Dormice

Dormice and their breeding and resting sites are legally protected, by national legislation. This protection is detailed in the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981) and the Conservation of Habitats and Species Regulations 2019 (amendment (EU Exit)) (HMSO, 2019). Taken together, these pieces of legislation make it a criminal offence to:

- Intentionally or deliberately capture, injure, or kill a dormouse.
- Possess or control any live or dead specimens, part, or derivative.
- Deliberately disturb a dormouse.
- Intentionally, deliberately, or recklessly damage or destroy a breeding site or resting site or obstruct access to such a place.

Hedgehog

Hedgehogs have some degree of legal protection in the UK:

- They are listed on Schedule 6 of the Wildlife and Countryside Act (1981) which makes it illegal to kill or capture wild hedgehogs, with certain methods listed.
- They are also listed under the Wild Mammals Protection Act (1996), which prohibits cruel treatment of hedgehogs (and other wild mammals).
- They are a species of 'Principal Importance' under the NERC Act (2006) and a 'Priority Species' under the Environment Wales Act (2016); these Acts are meant to confer a 'duty of responsibility' to public bodies.

Otter

Otters and their breeding and resting sites are legally protected, by national legislation. This protection is detailed in the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981) and the Conservation of Habitats and Species Regulations 2019 (amendment (EU Exit)) (HMSO, 2019).

Taken together, these pieces of legislation make it a criminal offence to:

- Intentionally or deliberately capture, injure, or kill an otter.
- Possess or control any live or dead specimens, part, or derivative.
- Deliberately disturb a dormouse.

- Intentionally, deliberately, or recklessly damage or destroy a breeding site or resting site or obstruct access to such a place.

Otters are included as 'Species of Principal Importance' for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act (2006) and 'Priority Species' under Section 7 of the Environment (Wales) Act 2016. These Acts are meant to confer a 'duty of responsibility' to public bodies.

Reptiles

All native reptile species receive legal protection in Great Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981). Viviparous lizard, slow-worm, grass snake and adder are protected against killing, injury and unlicensed trade only. Sand lizard and smooth snake receive additional protection under the provisions of the Conservation of Habitats and Species Regulations 2019 (amendment (EU Exit)) (HMSO, 2019). All six native species of reptile are included as 'Species of Principal Importance' for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act (2006) and 'Priority Species' under Section 7 of the Environment (Wales) Act 2016. These Acts are meant to confer a 'duty of responsibility' to public bodies.