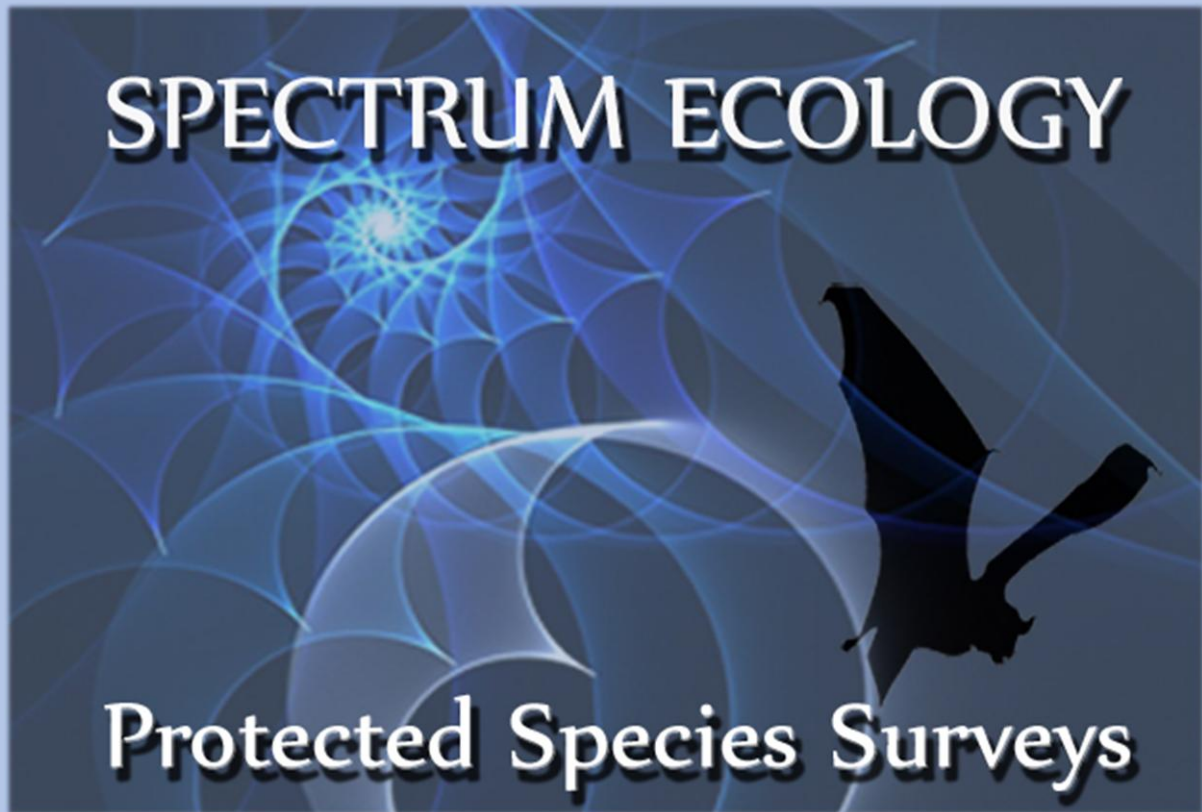




Otter Survey at Former Pontrhydyfen Primary School, South Wales, UK

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Survey dates: 17/05/2020

Completed Date: 19/05/2020

This survey is considered valid until: June 2021(assuming no dramatic habitat change or uses.)

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Introduction

Spectrum Ecology was commissioned by clients, looking to undertake the development of Pontrhydyfen Primary School, to complete a survey to determine whether the European otter (*Lutra lutra*) was present in the riparian habitat to the north and west of the proposed development site. Appendix 1 shows the extent of the site and the associated surveys. The proposed development involves conversion of the former primary school into a number of family dwellings for an extended family group. Presence within, or use of, these areas of habitat by otters would require mitigation or avoidance measures to enable the works to proceed.

The surveys were carried out by Jennifer Pilkington (MSc, BSc Hons). The report was written by Jennifer Pilkington (MSc, BSc Hons).

Legislation

This legal information is presented in summary form and is intended for guidance only; for detailed and definitive information please refer to the original documentation.

Otters are protected as a European Protected Species (Conservation of Habitats and Species Regulations 2010 (as amended)) rendering it an offence to:

- Deliberately capture, injure or kill an otter
- Deliberately disturb an otter
- Damage or destroy a breeding site or resting place of an otter.

Disturbance is defined as that activity which is likely to impair their ability:

- To survive, to breed or reproduce, or to rear or nurture their young
- To hibernate or migrate (in case of hibernating or migratory species)
- To significantly affect the local distribution or abundance of the species.

Under the Wildlife and Countryside Act 1981 (as amended) it is illegal to:

- Intentionally or recklessly disturb any otter while it is occupying a structure or place which it uses for shelter or protection
- Intentionally or recklessly obstruct access to any structure or place used by an otter for shelter or protection
- Sell, offer or expose for sale any otter.

The European otter is noted as a Species of Principal Importance by the Environment (Wales) Act 2016 and a UK Biodiversity Action Plan Species, meaning Local Authorities should ensure their protection from the negative impacts of development.

A licence from Natural Resources Wales would be required to undertake any activity likely to constitute an offence in regards to the protection of otters.

Methodology

The prime objective of this survey was to determine the levels of habitat use by otters within 100m of the proposed development site and to assess the risks of disturbance to any otter resting places within 30m of the site boundary.

Zone of Influence

Due to the nature of proposed development (refurbishment and modification of existing buildings, and a small-scale development of 2 additional residential buildings and 2 non-residential structures) and the isolation of the development site from the wider environment (by existing, tall, thick boundary walls), the predicted zone of influence is considered to be contained within the proposed development footprint.

This judgement has been made on the understanding that there is no clearance or development works planned outside of the site footprint. It is also understood that the additional buildings will be fairly lightweight in nature (with the exception of the possible pool house) and will therefore need the completion of reduced foundation work, meaning the scale of earthworks will be minimal, thus dramatically reducing the risk of a pollution event when compared to full foundation digging. It is currently unclear as to whether the pool indicated on the plans will be above or below ground and what size and weight it will be. However, it is deemed that even a small pool will require a stronger foundation than simply being placed onto the existing hardstanding. Therefore, a thorough Construction Environment Management Plan (CEMP) should be prepared, detailing protocols to prevent surface water contaminated with soil, hardcore, fuels and lubricants from entering the wider environment.

As previously mentioned, the proposed development site is enclosed around most of its boundary by a tall, thick, stone wall significantly limiting access by terrestrial wildlife. There is also no perceived motivation for entry to the site by wildlife as there are no natural habitats and currently no food sources (no residential food waste and no supplementary feeding). In addition to this, whilst the site is surrounded to the north, west and south by green space, the area to the south is highly maintained for amenity use, meaning it has little conservation value.



Plate 1: Amenity Areas to the South of the proposed development site

The scrub to the west is at the top of a very steep slope down to the river, broken only by a 3 metre-wide plateau occupied by the Richard Burton Trail.



Plate 2: Photos taken of the scrubby bank to the west from the Richard Burton Trail

The area to the north of the site is the most promising resource for local wildlife, but the site is significantly vertically removed from this green area. The tall retaining wall (over 10m) that supports the boundary walls, and presumably the foundations of the site, is again thick and impenetrable with few opportunities for any creature to gain access through the wall before reaching the top (Plate 3). The base of this wall is at the top of a steep slope (approximately 2:1 slope) that descends to the level of the river about 40m to the south of the river. The vertical separation from the proposed development site is deemed to be significant enough to provide some limitation to the levels of disturbance experienced by the green areas to the north, especially given the low-level development planned.

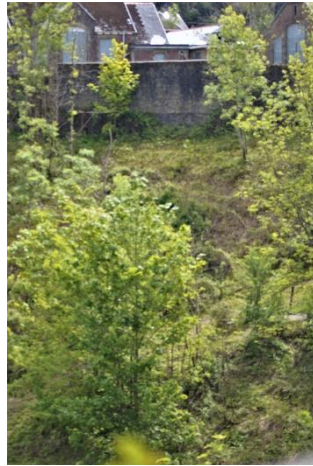


Plate 3: Northern aspect of development site showing wall and steep slope.

Despite the vertical separation, the site is horizontally within fairly close proximity of both the River Afan (approx. 31m at closest point) and the confluence of the Pelenna and Afan (approx. 85m). In addition to this, the elevated nature of the development site means that there is an increased possibility that any pollution event caused by the development would affect the water course. Furthermore, due to the proximity of the site to the river, it is predicted that noise, vibration and habitat disturbance could be negative factors that could affect the riparian habitat. Therefore, the extent of the rivers Afan and Pelenna within 100m of the development site were surveyed for signs of use by otter. It was not planned to search the Pelenna beyond a 100m radius from the site, because the site is downstream of this river, thus limiting the negative impacts of pollution events within this water course. In addition to this, it is considered that the amount of noise and vibration caused by the planned development that would reach this habitat before fully dissipating would not be any more significant than either forestry operations or the road noise caused by the road B4286 that runs north of the River Afan and over the top of the Pelenna, separating the development site from the wider riparian habitat of the River Pelenna.

Constraints

It is generally agreed that all water bodies within a 100m radius of a development site are surveyed for otter. However, areas of unpredictable, deep, fast-flowing water and the highly modified nature of the River Afan - especially tall, man-made, flood defences – made entering the river during this survey too dangerous without a boat; unfortunately though, extensive areas of shallow water and a very rocky channel also prohibited the use of a boat. Therefore, accessible areas of bank, deemed to be burrowable, and pebble beaches were directly surveyed, but other stretches of the river were inspected using high-powered lenses to search for holt entrances and field signs.

Some small areas of the river bank (2-5m) were also obscured from view by the high flood-defence walls and the thick sward/Japanese knotweed. The bank on either side of the hidden areas were reinforced with man-made flood defences and so it can be assumed that the concealed lengths of bank were similarly constructed. Furthermore, the most obscured areas were situated directly below a row of homes which backed directly onto the river to the east of the meander. It is therefore considered that the proximity to houses and very well-manicured gardens reduces the likelihood of a holt being present due to high levels of anthropogenic disturbance. It can also be assumed that, if there was a holt in this area, the presence of otter would have been previously recorded by the residents, or through the surveys required to build/modify these structures.

Desk Study

An ecological record check is performed covering distances of 2, 5 and 10km from the centre of the proposed development footprint.

Field Survey

A visual search of the banks and surrounding area is undertaken to record the following signs of otter activity, according to guidance provided by Chanin and Smith (2003) in *Monitoring the Otter Lutra lutra*:

- Holt entrances – typically in banks or under tree roots at the edge of a water course.
- Couch – an above-ground nest-like resting place.
- Prints and tracks – A large pad with five toes arching in front – claws and webs may be visible in soft ground.
- Trails – otters use the same routes through vegetation within their territory to access rivers.
- Slides – a well-worn mud ‘slide’ used to access the water.
- Spraints and anal jelly – Fresh spraints are usually black, tarry and sticky with a not unpleasant, distinctive sweet-musky odour. They generally comprise fish bones and scales with some other small bones, fur, feathers and sometimes insect fragments. Spraints are deposited in prominent locations along the water course to mark the individual’s territory. Anal jelly can vary in colour from green to pale brown/amber and has a strong smell of otter.

The field survey was undertaken between 8:00 and 13:00 on the 17/05/2020. The extent of the survey is indicated in Figure 1, Appendix 1.

Results

Desk study

When performed at a radius of 10km, the search of ecological records showed 242 records dating from 2019 all the way back to 1992. However, the majority of these records are located along the River Neath, considerably geographically distanced from the site. There were 178 records within 5km of the site, but 170 of these are all from one location in Britton Ferry, approximately 4.5km to the west of the site. When the search was narrowed to a within 2km of the proposed development site, only 3 records made in 2 locations can be found. All 3 of these records are associated with the Pelenna River and its tributaries north of its confluence with the River Afan. The single, more northerly, record - located north of Efail-fach (>1km from proposed development site) - was recorded in 2002, as part of a NRW Licence Return Dataset. The closer, more southerly, pair of records - located at the southern extent of Efail-fach in the wider countryside to the east of the B4287 (approximately 950m NW of proposed development site) - were recorded by NRW Regional

Data and the Wales Otter Database on 19/07/2002. No records were found along the River Afan or any of its other tributaries within 10km of the proposed development site.

Field survey

Proposed development site

As shown by the Phase 1 Habitat survey, the proposed development site is fully anthropogenically modified (buildings surrounded by hardstanding/asphalt) with no areas of natural habitat of any kind remaining except a small number of raised beds (Plate 4).



Plate 4: Photos of development site

Hence, there is no suitable foraging or refuge habitat within, and highly limited access for otter to, the proposed development footprint. In addition to this, no field signs were found at any point within the development site.

Conclusion - No field signs or individuals witnessed

River Afan

The typical riparian habitat of the surveyed sections of the River Afan varies between two mainly homogeneous habitat types in 2 distinct areas along the river.

The first section of the river that runs from the viaduct carrying the NCN route 887(to the NE of the proposed development site) to the viaduct carrying the Richard Burton Trail (to the NW of the site) is much less anthropogenically modified than the section running south from the second viaduct to the west of the site. This section is typical of a lowland river, tree-lined with a laminar flow (Plate 5).



Plate 5: Photos of the section between the 2 viaducts

Anthropogenic modification (with exception of the footings of the viaducts) is restricted to low-level flood defences, generally consisting of defence walls and rock armour to the banks of the river below the gardens for the houses found on the north and south of the river. In between these sections of artificial defence, the bank height is low and highly vegetated, often with a thick stand of Japanese knotweed. All accessible banks that were deemed to be burrowable and pebble beaches

were thoroughly searched for otter territorial field (scat, anal jelly etc.) signs as well as holts, couches, slides, footprints and fur. Inaccessible banks were thoroughly and systematically inspected using high powered lenses from the opposite bank. No individuals or field signs were found during the surveys, despite informal anecdotal stories of sightings by anglers.

As the river approaches the meander, the footings of the viaduct and the confluence with the Pelenna, the channel becomes much more jagged, modified and turbulent. From this point on the river should be deemed highly modified with most of the western bank contained by a tall (over 20m) wall supporting the foundations of the B4286. There is also a gas pipeline that runs along the entire surveyed length of the river at the bottom of this retaining wall on the western bank. The eastern bank displays less severe modification but also very few areas of burrowable material as the banks are predominantly bare rock or shorter defence walls topped by a very steep soil embankment.

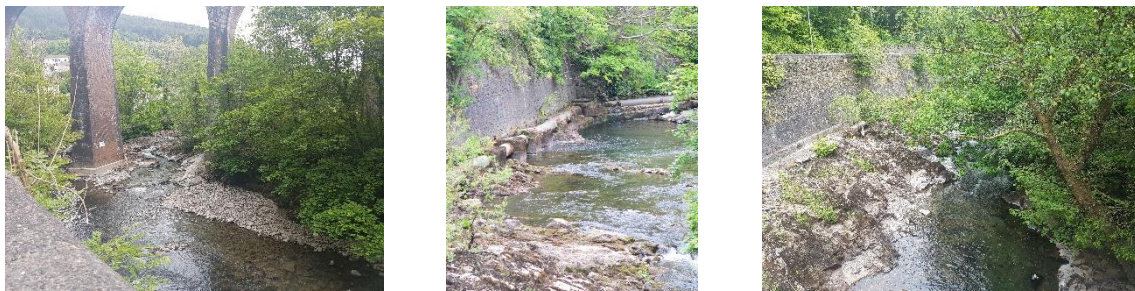


Plate 5: Examples of anthropogenic modification on the second section of the River Afan survey

All accessible banks that were deemed to be burrowable and pebble beaches were thoroughly searched for otter territorial field (scat, anal jelly etc.) signs as well as holts, couches, slides, footprints and fur. Inaccessible banks were thoroughly and systematically inspected using high powered lenses from the opposite bank. No individuals or field signs were found during the surveys, despite informal anecdotal stories of sightings by anglers. Specific areas that would typically be key scat locations to mark territory, in this case the concrete platforms supporting the pipeline and shelves on the base of the defence walls, were also photographed using high-resolution equipment with high zoom capability to enable inspection for signs of scat, anal jelly or feeding remains (Plate 7). However no field signs or individuals were witnessed.



Plate 6: Examples of key spots for territorial field signs.

Conclusion - No field signs or individuals witnessed

There are several weirs across the River Afan within the surveyed section. These vary in height from approximately 0.5-1m above witness water level. However, it is documented that a great deal of work has been undertaken to make the weirs on this post-industrial river passable to migrating fish, and both salmon and trout have recently been witnessed spawning in the head waters of the river

Afan. Therefore, in combination of the several sightings of indicators of good water quality along the Afan (e.g. Dippers – *Cinclus cinclus*) it can be assumed that suitable prey and water quality is present within the river to facilitate its use by otter.

Furthermore, because otters, especially males, have large territories, precautions should be taken to ensure no accidental injury is caused to otter which might commute near to the site, albeit infrequently. These measures would include covering any deep or steep sided excavations and limiting night-time light to a minimum.

Pelenna River

The Pelenna river is a major tributary of the River Afan. Rising to the NE of the proposed development site, it travels SW from Tonmawr to Efail-fach before heading almost due south, tracing the boundary of the Foel Fynyddau section of the Afan Forest Park in its lower reaches, to its confluence with the River Afan at Pontrhydyfen. The river was historically linked to coal production, and it is reported that the river suffered greatly from pollution caused by the sulphur-rich coal extracted in its vicinity and toxic mine-water from abandoned shafts. However, significant environmental improvement work has been undertaken on the river to mitigate these inputs and appears to have returned the river to a healthy condition, as several pairs of dipper (*Cinclus cinclus*) were witnessed foraging on the stretches surveyed as part of this report. The lower reaches of the Pelenna are significantly less modified than the River Afan, with the exception of the road bridge crossing the river directly north of its confluence with the Afan. The river was approximately 5m wide and between 10-70cm deep at the time of survey. The channel appeared to be predominantly natural, and the substrate consisted of rocks graded between boulders (>256mm) and medium gravel (>8mm) producing an overall moderately slow, but locally fast turbulent, flow.



Plate 7: Typical habitat on surveyed sections of the River Pelenna

Whilst, it was not planned that the Pelenna should be surveyed outside of the 100m buffer, time permitted the continuation of the survey a further 100m north, upstream from the confluence with the Afan. All accessible banks that were deemed to be burrowable and pebble beaches were thoroughly searched for otter territorial field (scat, anal jelly etc.) signs as well as holts, couches, slides, footprints and fur. No individuals or field signs were found during the surveys, despite informal anecdotal stories of sightings by anglers.

Conclusion - No field signs or individuals witnessed

Invasive Species

Both Himalayan Balsam (*Impatiens glandulifera*) and Japanese Knotweed (*Fallopia japonica*) were found in abundance along the banks of both water courses and in very close proximity to, but not within, the proposed development footprint. It is therefore recommended that all plant entering and

exiting the site utilise the main double gate to the east of the site as there is no growth of either species within this area. If the proposed development site is to be accessed from any other point (including a new entry point made through the existing boundary wall), the footprint of the new access point should be thoroughly checked for both species and sufficient biosecurity measures should be installed to ensure that no seeds or vegetative material of either species are transported by plant to the wider countryside.

Conclusions

- **The boundary of the proposed development site is at least 30m away from the river at all points and therefore outside of the advised exclusion zone to prevent disturbance to otter resting places.**
- **No individuals or field signs were found during the surveys performed for this report.**
- **No otter resting places were discovered in any surveyed area and no signs of visitation since the last high water were discovered, indicating the use of these areas is infrequent at best and that the areas are not hotly disputed territories.** However, it is still imperative that the water quality of these resources are not negatively impacted as a result of the proposed development as it should also be recognised that it is likely that otter may be using watercourses for the purposes of commuting and perhaps incidental foraging. In addition to this, although the watercourses may make-up a small part of several individuals' overall territories, it can however be assumed that otter are not utilising these areas as the main resource in their territory

Recommendations

- Measures should be put in place to ensure any source of potentially toxic/damaging run-off that may occur throughout the duration of development (i.e. soil erosion and chemical pollutions – fuels and lubricants) is carefully managed to ensure run-off does not enter/affect the watercourses near-by.
- Any deep or steep-sided excavations must be covered when not in use or installed with an escape ramp.
- Night-time use of artificial light should be kept to a minimum and avoided if unnecessary to the development.

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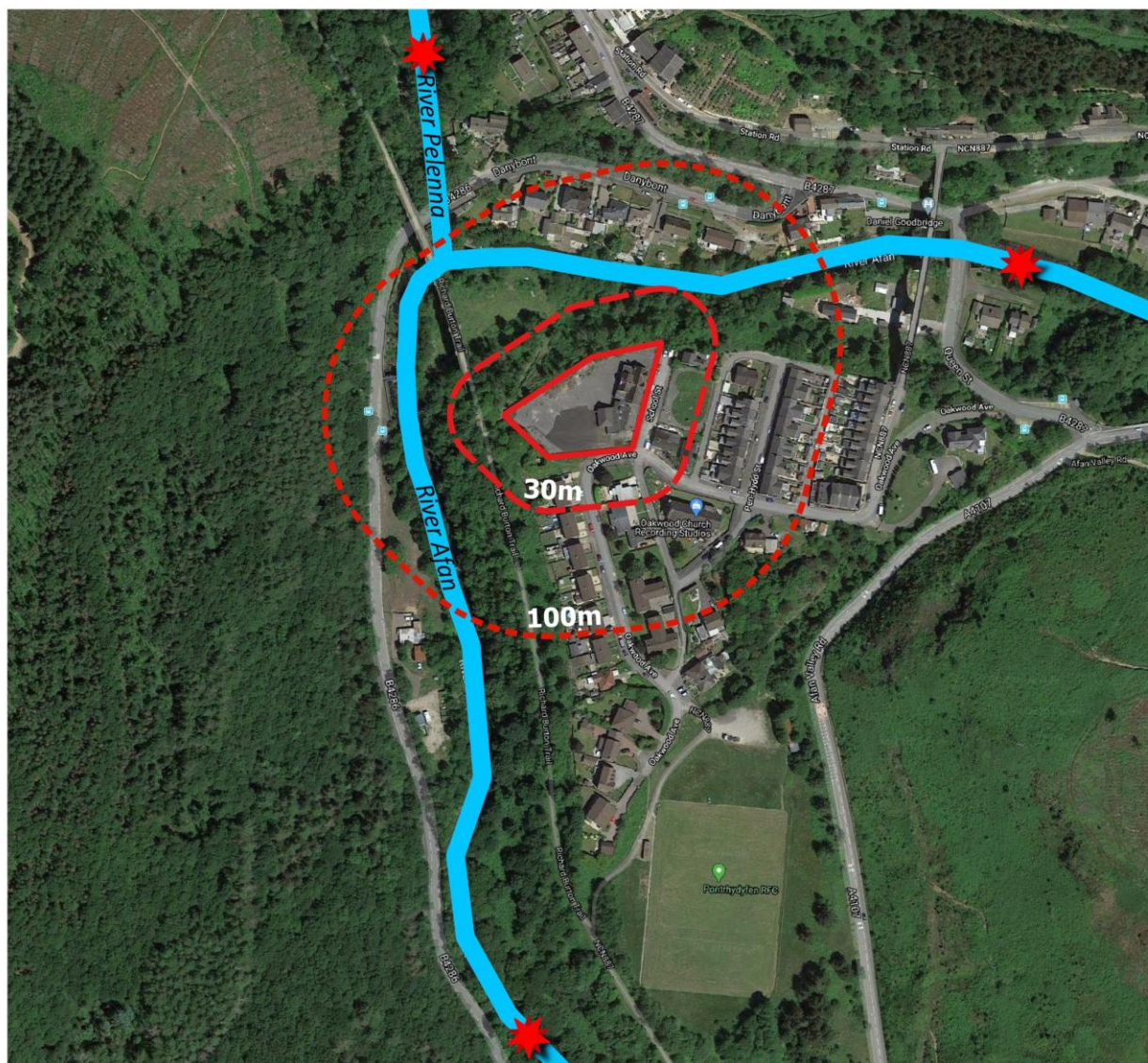
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Appendix 1: Proposed development site and survey extent

Otter and riparian survey at the Former Pontrhydyfen Primary School, S. Wales, UK



0 25 50 m



Key

-  Rivers
-  Survey extent
-  Pontrhydyfen Site Boundary
-  100m Buffer
-  30m Buffer



Figure 1: Extent of survey at Former Pontrhydyfen Primary School, South Wales, UK.