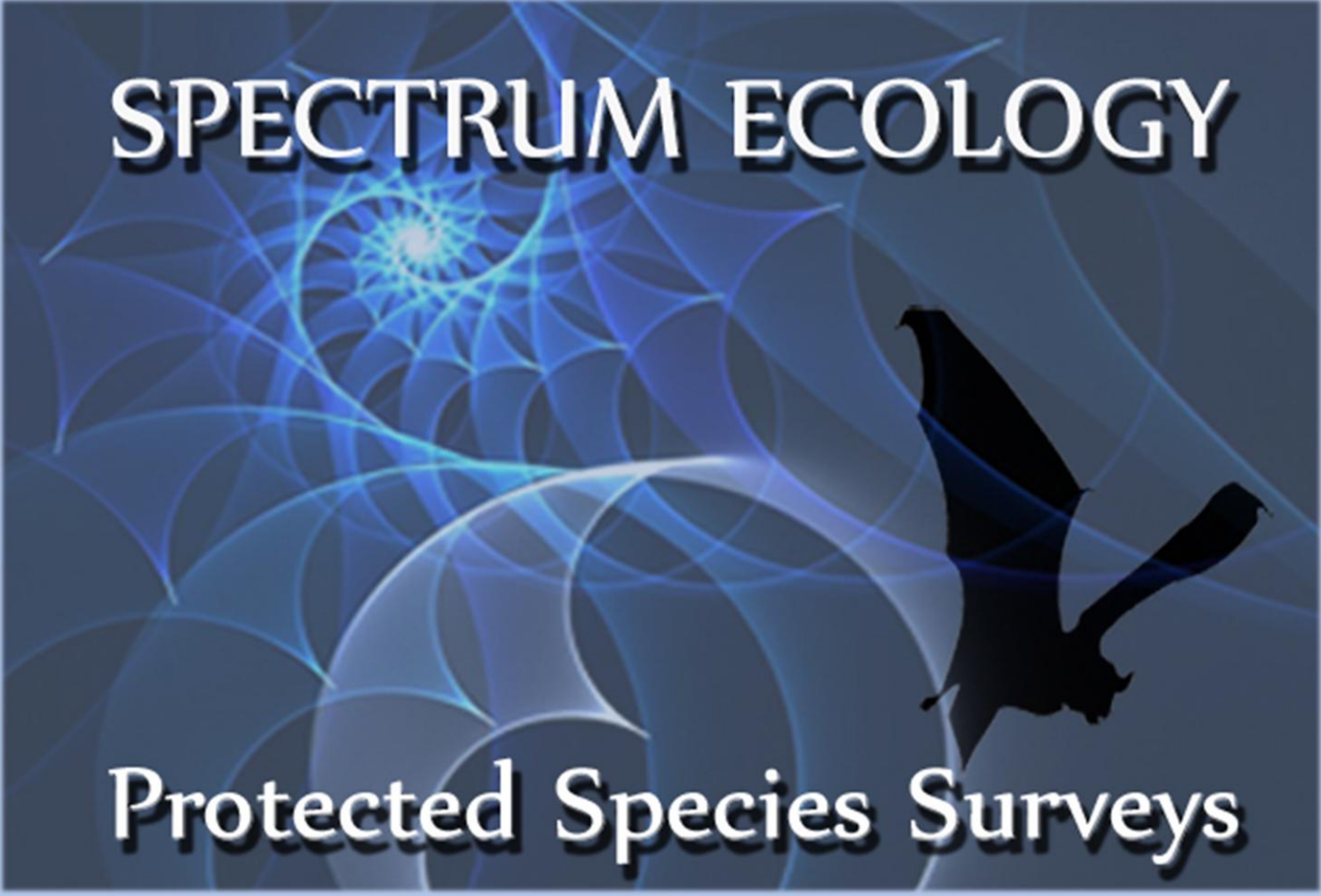


SPECTRUM ECOLOGY



Protected Species Surveys

Extended Phase 1 Habitat Survey of the Former Primary School in Pontrhydyfen, South Wales, UK.

Date Surveyed: 10/03/2020

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This survey should be deemed valid for 10 years from the date of survey (assuming no dramatic habitat change or use)

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Initial Instruction

An Extended Phase 1 Habitat Survey was commissioned to:

- Identify the presence of priority habitat and species as listed on Section 7 of the Environment (Wales) Act 2016 and or protected by the Wildlife and Countryside Act 1981.
- Identify any additional survey effort that may be required to ensure no protected habitats or species are negatively impacted, disturbed or destroyed.
- Suggest appropriate mitigations/compensations of any negative impacts the development may have on the conservation value of the development site and surrounding area.

Site Profile

Figure 1 shows the location and extent of the proposed development site.

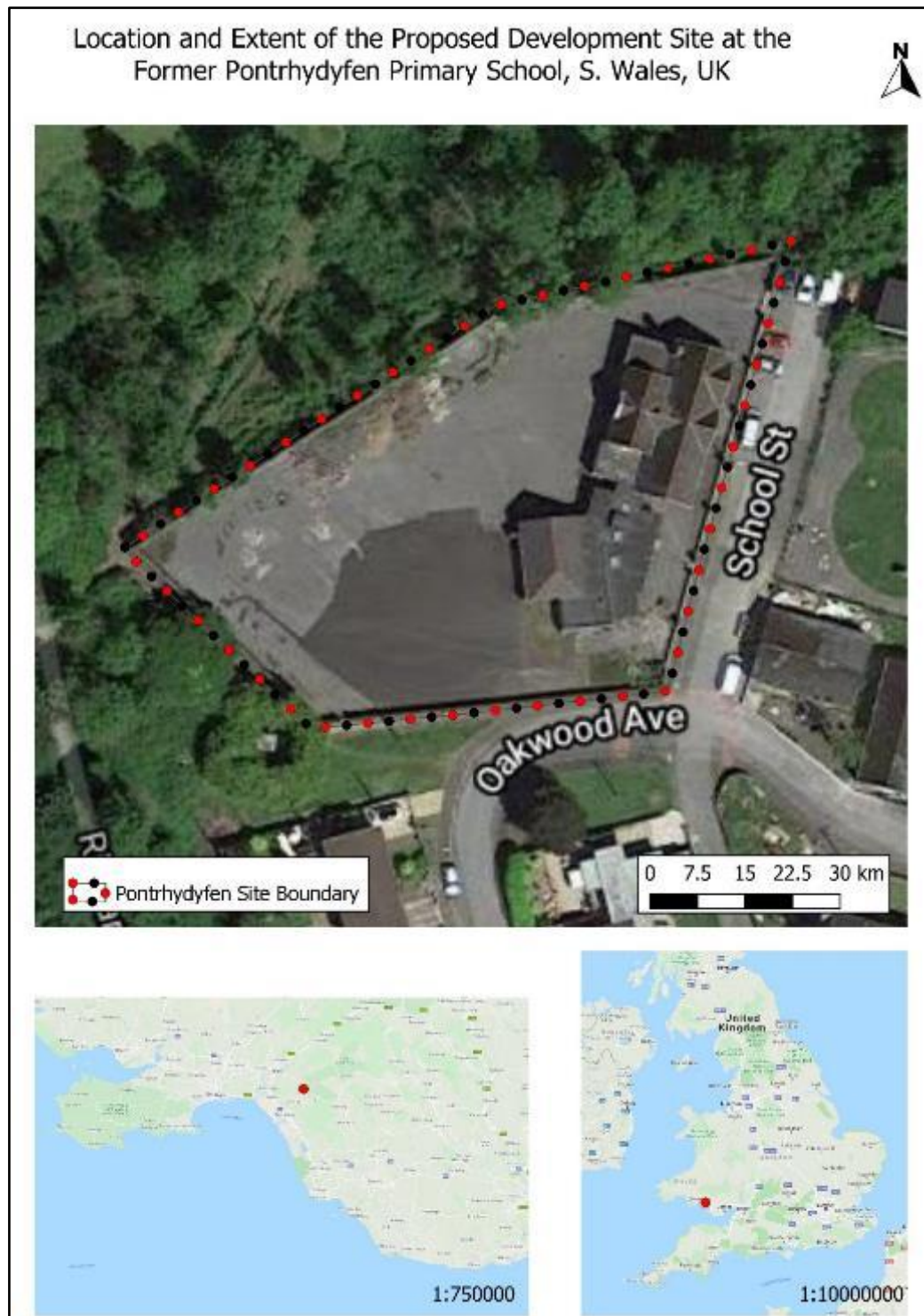


Figure 1: Site Location and Extent

The proposed development site (0.3ha) is the site of the former Pontrhydyfen Primary School. The site comprises 2 old stone buildings, connected by a newer brick corridor/building, and a large, fairly level, concrete/asphalt playground enclosed by a tall, thick stone wall and fence combination. The management of the site has been neglected since the closure of the school about 5 years ago; the playground has suffered low-level colonisation by common weed species in areas where soil has been allowed to accumulate through surface-runoff. The buildings have degraded somewhat and the roofs and eaves have developed several cracks and holes but are on the whole free from subsidence and significant damage. Several large accumulations of building waste and spoil have been dumped in the north of the playground along the boundary wall.

The boundary is primarily made up of a tall, thick stone/concrete wall. The wall is at least 5ft tall and 2ft thick along the entire north, west and southern boundaries. There is a gated pedestrian access through the wall in the SW corner from a bridle path that continues over the nearby viaduct. To the north of the site, the land drops away steeply to the river; here, the external face of the boundary wall is well over 20ft tall, eliminating any chance of access over the top of this wall by any terrestrial macrofauna. The external faces of the western and southern walls are approximately 5-9ft tall, significantly limiting access over the top of the wall to most terrestrial macrofauna. The eastern boundary is a shorter wall (2ft high) topped with a metal rail fence increasing the overall height to over 5ft. Whilst this edge of the boundary presents more opportunities for access by wildlife, due to the gaps in the fence and the 2 gated access points, it is still deemed that site access by terrestrial macrofauna would be low and is mostly likely to be the result of determined animals being enticed into the area (i.e. purposeful or accidental supplemental feeding).

The playground is almost completely devoid of floral interest except at the bases of the walls and the spoil heaps. The majority of the species present in the area should be deemed as rank vegetation with limited conservation value due to both their low diversity and density. There are no mature trees or areas bigger than 0.5m² of any habitat with conservation interest.

Desk Study

Legislation

Wildlife and Countryside Act 1981 (Legislation.gov.uk, 2019a)

The Wildlife and Countryside Act 1981 makes it an offence to intentionally kill, injure or take any wild bird or animal listed on Schedules 1 and 5 respectively. It is also an offence to take, damage or destroy; the nests of wild birds either whilst they are being built or used, the eggs of wild birds or places of shelter/protection for wild animals including disturbance of animals using these places. Schedule 8 prohibits the intentional picking, uprooting or destruction of any species listed. Finally, Schedule 9 prohibits the release of animals or dispersal of plants detailed on Schedule 9 as they pose a significant detrimental risk to native wildlife.

Environment (Wales) Act 2016 Section 7 (Wales Biodiversity Partnership, 2019)

This act replaced the duty previously described in section 42 of the NERC Act 2006 in Wales as of 2016. It includes lists of species and habitats deemed of key significance to improve and sustain Welsh biodiversity, to ensure all reasonable steps are taken to maintain and enhance the species and habitats listed.

Conservation of Habitats and Species Regulations 2010,

These regulations detail the designation and protection of European sites and the protection of European protected species.

Protection of Badgers Act 1992.

This legislation focuses on animal welfare protecting badgers and their setts, making it illegal to: wilfully capture, injure or kill a wild badger; be in possession of a badger (dead or alive) or to destroy/obstruct access to an active badger sett.

Designations

A search performed using DEFRA's MagicMap application indicates that there are no sites that have statutory (SPA, SAC, SSSI, RAMSAR, EMZ) conservation designations within 2km of the proposed development site (Fig 2).

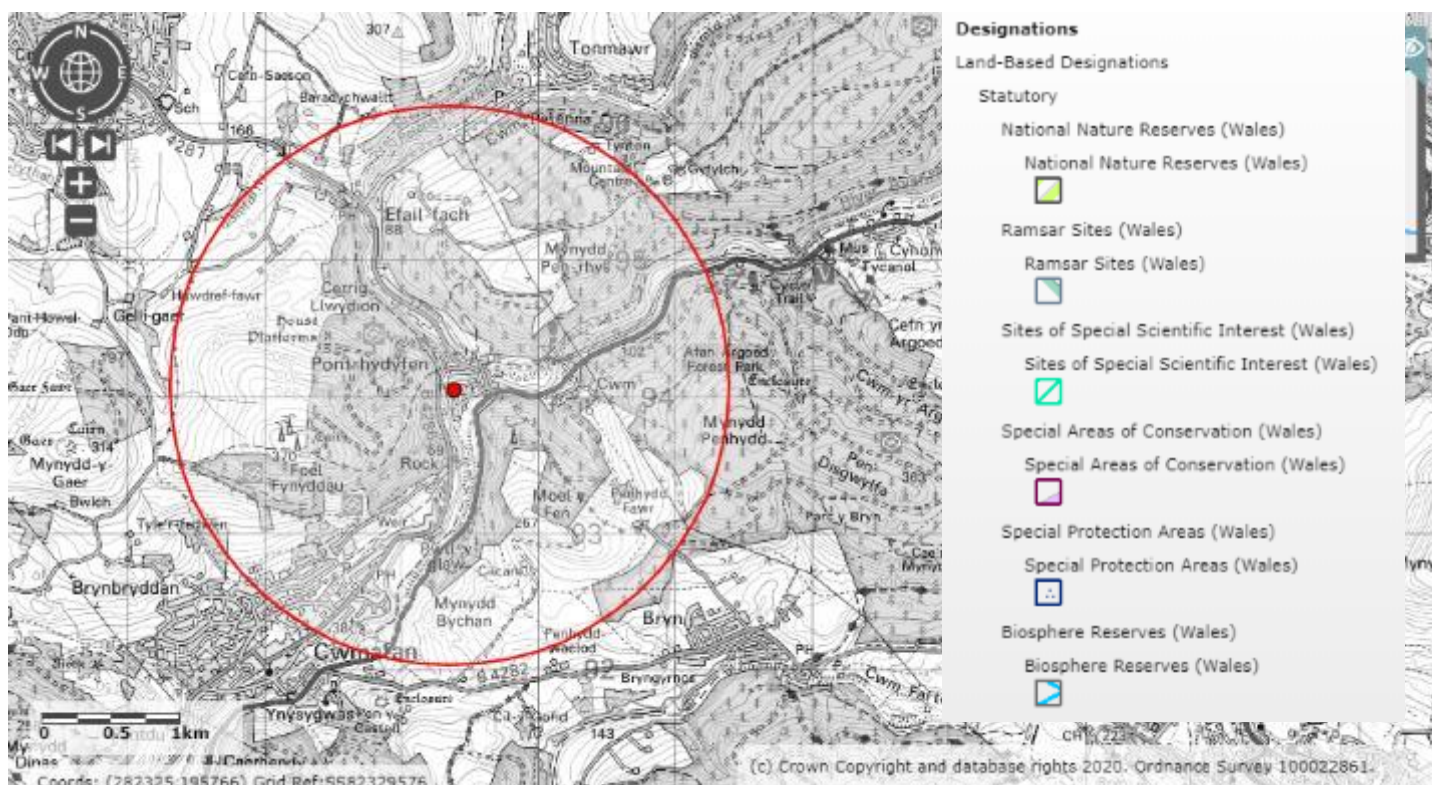


Figure 2: Designated areas within 2km of the Proposed Development site (DEFRA 2020).

Habitats

A search performed using DEFRA's MagicMap application shows the extent and proximity of protected habitats within close proximity of the proposed development site. Figure 3 shows that there is an area of Broadleaved woodland, designated by the National Forest Inventory, adjoining the western end of the proposed development.

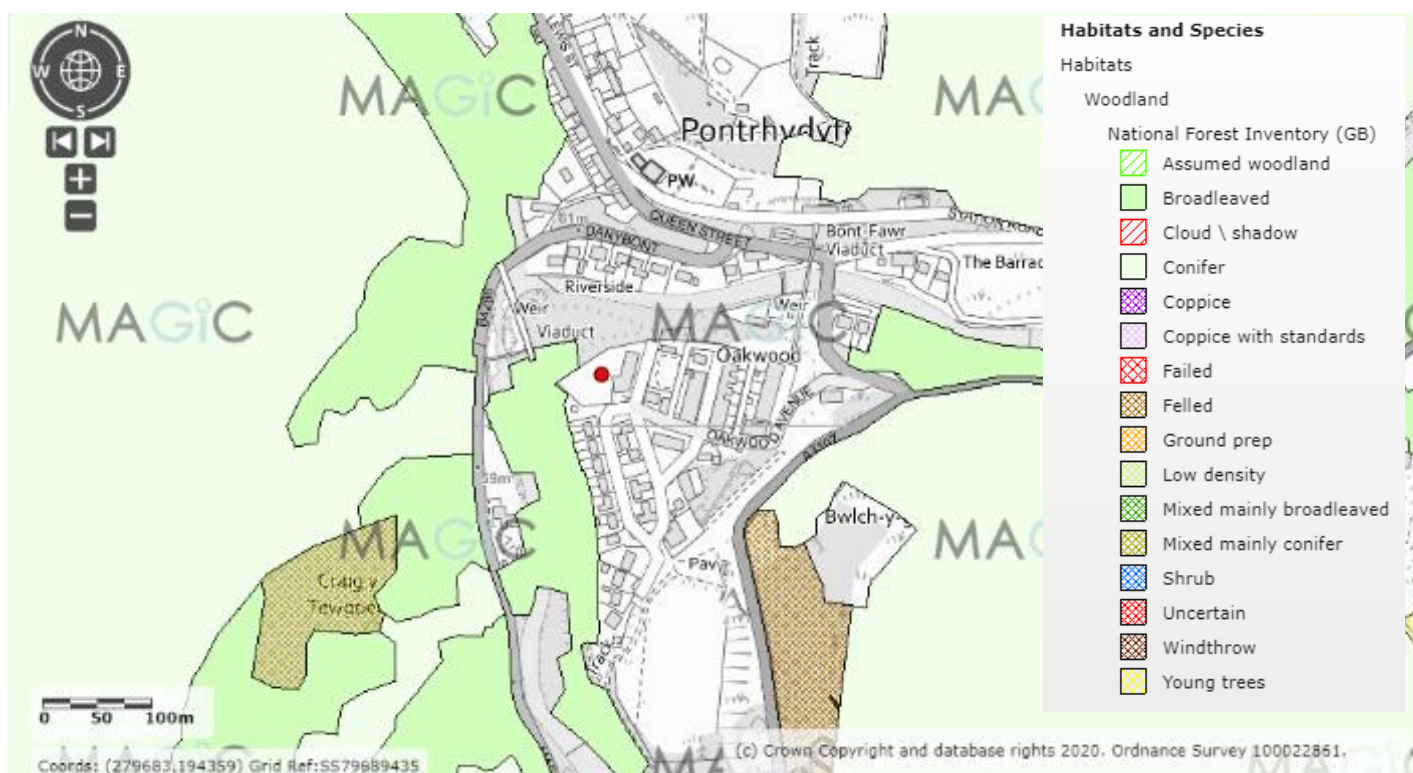


Figure 3: Protected habitats in close proximity to the proposed development site (DEFRA 2020)

Species

A search performed to identify records of species, protected by the aforementioned legislation, disclosed the historic presence of the species listed in Table 1 within 2km of the proposed development site.

Table 1: Protected species within 2km of the proposed development site (NBN 2020)

Superorder	Common Name	Latin Name	Protection(s)
Mammalia	European otter Noctule Common pipistrelle Soprano pipistrelle	Lutra lutra Nyctalus noctule Pipistrellus pipistrellus Pipistrellus pygmaeus	WCA 1981 Sch5 & Env W 2016 Sec 7
	Eurasian badger Red fox	Meles meles Vulpes vulpes	WCA 1981 Sch6
	West European hedgehog Polecat	Erinaceus europaeus Mustela putorius	Env W 2016 Sec 7
Birds	Kingfisher Crossbill Redwing Fieldfare	Alcedo atthis Loxia curvirostra Turdus iliacus Turdus pilaris	WCA 1981 Sch1 & Env W 2016 Sec 7
	Skylark Tree pipit Nightjar Cuckoo Kestrel Pied flycatcher Herring gull Grasshopper warbler Spotted flycatcher Curlew Dunnock Starling Song thrush Lapwing	Alauda arvensis Anthus trivialis Caprimulgus europaeus Cuculcanorus Falco tinnunculus Ficedula hypoleuca Larus argentatus Locustellanaevia Muscicapatriata Numenius arquata Prunella modularis Sturnus vulgaris Turdus philomelos Vanellus vanellus	Env W 2016 Sec 7
Fish	Eel Atlantic salmon Brown/sea trout	Anguilla anguilla Salmo salar Salmo trutta	Env W 2016 Sec 7
Reptile	Slow-worm Adder Common lizard	Anguis fragilis Viperasaurus Zootoca vivipara	WCA 1981 Sch5 & Env W 2016 Sec 7
Amphibian	Smooth newt	Lissotriton vulgaris	WCA 1981 Sch5
Invertebrates	Grey dagger Small heath Grayling Buff ermin Cinnabar	Acronicta psi Coenonympha pamphilus Hipparchia semele Spilosoma lutea Tyria jacobaeae	Env W 2016 Sec 7
Plants	Portuguese pocket moss	Fissidens curvatus	Env W 2016 Sec 7
INNS	American mink Japanese Knotweed Himalayan Balsam	Neovision vision Fallopia japonica Impatiens glandulifera	WCA 1981 Sch9

Methodology

A thorough walk-over survey was completed within the habitat section mapped, during which the diversity of all floral species was noted including their relative abundance, using the DAFOR scale. All faunal sightings were noted for the site as a whole.

The site was visited on 10/03/2020 between 10:30 and 12:00. On arrival, it was a cool (approx. 5°C), overcast (approx. 8 octas), still (approx. 0.5 mph) day with drizzle and low cloud through much of the morning and into the early afternoon.

Survey Results

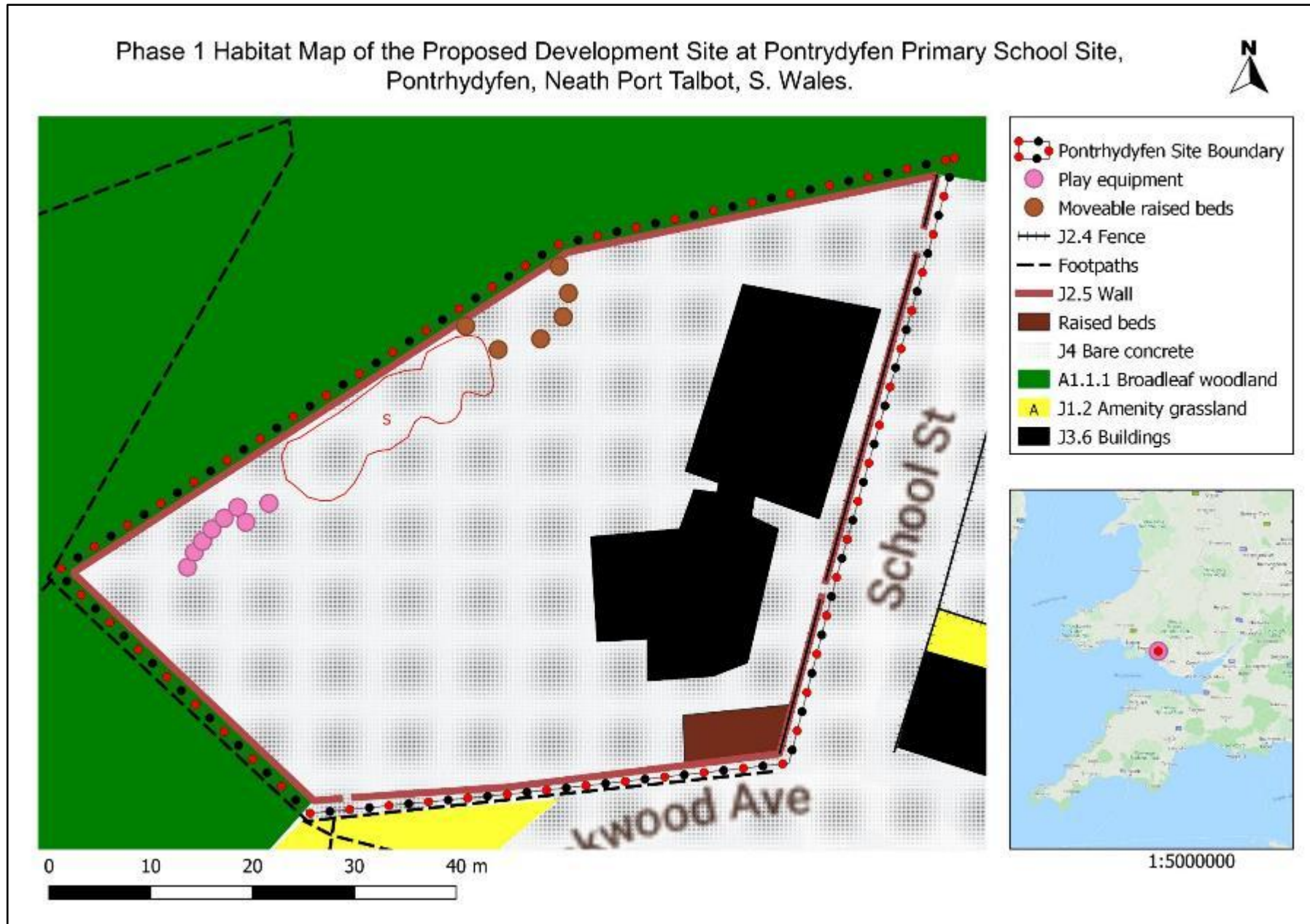


Figure 4: Phase 1 Habitat Map

Table 2: Floral Species List

Common Name	Latin Name	Bare Asphalt	Spoil heaps	Wall
Ash (young saplings)	<i>Fraxinus excelsior</i>	O		
Bramble	<i>Rubus fruticosus</i>	R	R	
Daffodil	<i>Narcissus</i>	R	R	
Dandelion	<i>Taraxacum officinale</i>	A		
Dog rose	<i>Rosa canina</i>	R		
Fescue	<i>Festuca</i> sp.	O	A	
Ivy	<i>Hedera helix</i>	R		
Moss	<i>Sphagnum</i> sp.	R	O	
Perennial rye grass	<i>Lolium perenne</i>	O	A	
Rosebay willowherb	<i>Chamaenerion angustifolium</i>		A	
Crack willow (young saplings)	<i>Salix fragilis</i>	O		
Crocus	<i>Crocus sativus</i>		R	
Buddleia	<i>Buddleja davidii</i>	R		
Maidenhair spleenwort	<i>Asplenium trichomanes</i>			O
Ivy-leaved toadflax	<i>Cymbalaria muralis</i>			O

Table 3: Faunal Species List

Common Name	Latin Name	Record
Robin	<i>Erithacus rubecula</i>	Birdsong
Blackbird	<i>Turdus merula</i>	Birdsong
Song thrush	<i>Turdus philomelos</i>	Birdsong
Blue tit	<i>Cyanistes caeruleus</i>	Birdsong
Great Tit	<i>Parus major</i>	Birdsong

Analysis

Habitats

There are no habitats protected under the Environment Wales Act 2016 within the boundary of the proposed development site. In addition to this, the tall, thick stone wall that surround the majority of the site, with the exception of the gated entrances and the shorter length of wall to the western boundary which is topped with a metal rail fence, will significantly reduce the risk of damage through development to neighbouring habitats.

Naturally established habitats - It is planned that the development will be contained within the walled boundary of the proposed development site. The dominant habitat type within the site is bare asphalt/concrete that was maintained as a playground for the former primary school for the duration of the site's previous usage. Since the closure and sale of the school, the maintenance of the playground area has been neglected and the area has been used to dump considerable amounts of

building waste and spoil from nearby developments undertaken by the previous owner. This has allowed a small amount of colonisation by common weeds in the areas where small amounts of mud has been allowed to accumulate, limited to the base of the walls and a small patch in the north west corner where the area naturally drains to due to its gradient. These assemblages are dominated by rank vegetation but are at an early stage of development and are sparse in nature, rendering them unable to provide and refuge habitat for faunal species. It is deemed that removal of these areas of vegetative growth would not be significantly detrimental to the conservation value of the site due to their limited distribution and density.

There is a small amount of scattered foliage growing on the vertical surfaces of the wall. The floral diversity is limited to maidenhair spleen wort and ivy-leaved toadflax and covers less than 1% of the wall's surface. It is planned that the majority of the wall will remain intact during and upon completion of the development. Therefore, the presence of this habitat is unlikely to be dramatically changed. The current developers seem very environmentally conscious and should be encouraged to consider retaining the current wall vegetation and potentially encourage additional growth of similar species that could provide pleasant floral interest and more importantly a resource for pollinators along with refuge areas for a multitude of invertebrate species on this feature of the site without damaging the integrity of the boundary.

Artificial Habitats - The raised beds scattered throughout the site have clearly been previously planted with horticultural/interest items including ornamental grasses and bulbs (daffodils). The floral assemblage of planters has clearly suffered due to neglect and they are on the whole sparsely vegetated with plants of little conservation value. From conversation with the current developers it has been established that they intend to install considerably more raised planters and green areas on top of the current base. A great deal of conservation interest can be generated through creative use of raised planters. Shallow ponds, wetlands and patches of wildflower meadow can easily be established within moderately sized beds which can be easily incorporated within the design of the site. The raised, contained nature of such planters will reduce the maintenance load for the current developers throughout their occupation of the property, especially with the considerations of limited mobility.

There is also evidence of a small number of bird boxes being historically present within the site. These boxes have suffered from the same neglect as the rest of the site and have degraded beyond a useful state for use by nesting birds. Therefore, their removal would not reduce the potential biodiversity of the site. It is recommended that new habitat boxes are installed to further improve the conservation value of the site. This could include a variety of bird boxes (different sized boxes and openings), pollinator and invertebrate boxes, bat boxes and perhaps even refuges for hibernating amphibians or basking reptiles.

Species

Mammals

Terrestrial mammals

No mammalian individuals or field signs were recorded as present within the proposed development site. Foraging, resting and breeding habitat for terrestrial mammals is almost non-existent especially for larger mammals (i.e. fox, badger, otter, hedgehog & polecat). The tall thick walls surrounding most of the site also hugely restrict access to the site for terrestrial mammals. The proximity to suitable

habitats, and the number of historic records of mammals in these areas, does however mean that there is a slight chance that mammals may attempt to access or accidentally access the area. Therefore, during development, precautions should be taken to ensure that they do not suffer excessive disturbance or become injured in or around the site. Surveys to check the surrounding area, up to 250m from the site, for both badger and otter refuge structures (ie. Setts, day beds and holts and couches respectively) should be commissioned to ensure that these species and structures are not impacted during development. In addition to that the following precautions should be taken within the site. all steep sided excavations should be covered or fitted with an escape ramp whilst not in use and any essential night-time lighting should be kept to a minimum.

Bats

The buildings currently on site are the old primary school buildings. Their maintenance has been neglected for a considerable period and have since developed several access points for bats into the roof voids. The roof voids of these buildings should be considered to have a high potential for supporting roosting and resting places for the species of bats that have been historically recorded within 2km of the site. A full bat survey should be completed on all buildings present on site, by a suitably qualified ecologist, to ensure no disturbance or damage will be caused to any bats utilising the space or to the potential of the voids as refuge resources.

Birds

There is no habitat within the proposed development site that would be suitable for use by birds to forage, nest, breed or rest. No birds were seen utilising any of the highly limited resources within the site boundaries at any point during the survey. Several birds were heard calling from the nearby woodland areas, but very few birds were even witnessed commuting over the site. It is assumed that due to the limited overhang of the neighbouring trees little pruning if any will be required to enable the development to be successfully installed. If any pruning, trimming, felling etc. is required it should be kept to a minimum and completed outside of the recognised bird nesting season (Feb- Aug)

The area could easily be significantly improved for use by small passerines (song birds) by the installation of biodiverse raised beds attracting invertebrates and growing seed producing plants (e.g. sunflowers etc.), feeders and nest boxes.

Fish and Crustaceans

There are no aquatic habitats within the proposed development site. The site is therefore incompatible with the presence of any fish or freshwater crustacean populations.

If a pool house is to be included into the proposed development, it is imperative that all water is taken from and returned to an established water supply system, rather than the from/to the nearby river, whether directly through piping or as a result of run-off drains. The level of abstraction required to fill and maintain even a small pool could significantly affect river levels during minimal flows, and the discharge of high temperature effluents, containing pool maintenance chemicals, could cause a significant pollution event and fish kill.

In addition to this, if any significant excavation is required or any sections of the wall are removed, provision should be made to ensure that surface-runoff that may include dust and debris from these activities is contained and directed away from the river to ensure excessive levels of sedimentation do not occur in the river.

Amphibians&Reptiles

No reptilian or amphibian individuals or field signs were observed within the proposed development site boundary. There is no suitable breeding, hibernation or foraging habitat within the site. There is

potential for basking reptiles to utilise the site, however the limited accessibility of the area, lack of vegetative cover and other suitable habitat, make it highly improbable that amphibians and reptiles would currently be able to colonise the site successfully.

Installation of a small shallow-sided pond and refugia to the area may improve the prospect for herpetofauna to successfully utilise the site in the future if they can naturally overcome the limited accessibility caused by the boundary.

Invertebrates

There is very little habitat within the proposed development site that would be suitable for foraging or breeding pollinators. No invertebrate individuals or field signs (webs, trails, nests, cocoons etc.) were noted during the survey although no specific invertebrate surveys were conducted at this time and it is seasonally very early to detect adult macroinvertebrates (i.e. butterflies, moths, etc).

Installation of wildflower and native grass seed mixes to raised planters, in combination with habitat boxes, would improve the resource for invertebrates within the site boundary. For the species recorded within 2km of the site, and which are listed as priorities by the Environment Wales Act 2016, the installation of wildflower/grass mixes that include Common Ragwort (*Jacobaea vulgaris*), Fescue grasses (*Festuca sp.*) Meadow grasses (*Poa sp.*) and Bent family grasses (*Agrostis sp.*) would be especially beneficial to the Small Heath (*Coenonympha pamphilus*) and Grayling (*Hipparchia semele*) butterflies and Cinnabar moth by providing food for their caterpillars. If potted shrubs/trees are planned as part of the more structural green installations, Honeysuckle (*Lonicera periclymenum*) and apple (*Prunus sp.*) should be considered for the caterpillars of the Buff ermine (*Spilosoma lutea*) and the Grey dagger (*Acronicta psi*) moths. Other shrubs beneficial to pollinators that could be incorporated into the floral assemblage include, lavender (*Lavendula sp.*), oregano (*Origanum vulgare*) and ivy (*Hedera sp.*).

Plants

There are very few areas of vegetated land within the proposed development site, and no native plants protected by the aforementioned legislation were positively identified as being present within the development site. It is recommended that when the plans for planting any areas within the site are created, they attempt to include as many native, local provenance species as possible.

INNS

There is no evidence of any Invasive Non-native Species within the boundary of the proposed development site.

Summary

No protected or priority habitats, species or their field signs were recorded as present within the proposed development site.

The area with the most potential to hold conservation interest is the roof voids' potential to host bat roosts. Mitigations for the disturbance or destruction of roosts, should they exist, will be made by the bat surveyor following a full bat survey.

Outside of these features, the proposed development site has very little conservation interest due to comprising almost 100% man made, inorganic materials with less than 1% colonisation by organic materials. The installation of well-planted, raised beds, potted shrubs, artificial refugia, supplemental feeding and potentially a pond or wetland area is likely to greatly increase the conservation value of

this site. Beyond removal of the concrete and restoration of the habitat to being dominated by organic matter, installation of small but high value areas of green space and refugia is deemed to be the best enhancement of this site resulting in considerable net gain of conservation value.

Further actions and recommendations

- Comprehensive bat surveys on all buildings present on site.
- Otter and badger surveys should be commissioned to ensure no disturbance to resting or breeding sites within close proximity of the site occurs.
- All water input and effluence connected to the installation of a pool house should be dealt with from established water-supply rather than directly or indirectly from the nearby river.
- Any run-off containing dust and debris caused by demolitions should be directed away from the river and into a suitable recognised waste-water treatment facility.
- All steep-sided excavations to be covered and fitted with an escape ramp when not in use.
- Night-time lighting only to be used if absolutely necessary and kept to an absolute minimum during use.
- Installation of a pond/wetland area, range of habitat boxes, supplemental feeders, raised beds planted with native, local provenance flowers and grasses (see specific species recommendations above)

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Appendix 1: Photos of features on site



Plate 1: Playground



Plate 2: Moveable raised beds



Plate 3: Play equipment



Plate 4: Spoil heaps



Plate 5: Potential access points to roof voids for bats



Plate 6: External view of Northern Boundary



Plate 7: External view of West boundary