

November 2025

Site	Purton Sewage Treatment Works
Address	Purton STW, Mopes Lane, Widham, Purton, Wiltshire, England, SN5 4HG
Date of survey	3 rd November 2025
Relevant protected species	Great crested newt, bats, badger, nesting birds, hedgehog, hazel dormouse and reptiles
Relevant legislation	The Wildlife and Countryside Act (1981) Conservation of Habitats and Species Regulations (2017) Natural Environment and Rural Communities Act (2006)
Activities reported by	Jasper Carnell of Maydencroft
Activities reported to	Monica Dorling of Thames Water
Details of activities/work carried out (with the potential to adversely impact protected species)	
Maydencroft Limited was commissioned by Thames Water to undertake an Ecological Walkover Survey of the proposed working area within Purton STW, Wiltshire. The purpose of the survey was to identify any ecological constraints associated with the installation of a new welfare unit. The proposed works involve the installation of a new permanent welfare unit at Purton STW. The unit will be positioned on an area of modified grassland, which will be replaced with suitable hardstanding to provide structural support. It is anticipated that the welfare unit will be delivered and positioned on site using a lorry-mounted crane which can access the area via the pre-existing infrastructure. This report has been prepared based on preliminary plans and should be revisited if any revisions are made. This ecological assessment will help inform future considerations to mitigate potential ecological impacts during the proposed works.	
Methodology	
An ecological walkover survey of the site was undertaken to assess the potential for the proposal to adversely impact protected species, habitats, and designated sites by Jasper Carnell, Assistant Ecologist, on the 3rd November 2025. The survey recorded the habitats present and evaluated their suitability to support protected species. To provide contextual background to this project, a desk study has been undertaken to search for the following: • International statutory designated sites within 2km; • National statutory sites within 2km; • Non-statutory sites within 1km; • Protected and important species and habitats within a 2km radius of the Site. These 'study areas' were considered appropriate for the scale of the proposed works and follow best practice guidance. The desk study was conducted using online sources such as Magic Map alongside data on protected/notable species and local sites from the Wiltshire & Swindon Biological Records Centre. The data was returned on 5th November 2025.	

Result of action taken

Designated Sites

A single designated site is situated within 2km of the site. Red Lodge Wood Local Wildlife Site (LWS) is located approximately 1.9km northwest of the site. It comprises 45.94ha of mixed plantation on an ancient woodland site, characterised by the British NVC community W8 (ash, field maple, and dog's mercury).

The site lies within the Impact Risk Zone (IRZ) of multiple Sites of Special Scientific Interest (SSSI). However, the proposed works do not fall into any of the categories listed with the potential to cause harmful effects on terrestrial SSSIs and the Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites that they underpin. Therefore, no significant impacts are anticipated and no consultation is required with Natural England.

Habitats

Modified grassland (g4, 10, 128)

Reference 1

The area proposed to accommodate the welfare unit comprises modified grassland with a low species density. The sward is mixed in height, ranging between 5-15cm, with cock's-foot (*Dactylis glomerata*) dominating. Though not recently mown, the grassland has been previously managed, with little to no damage or bare ground present. Some areas appear damper, with hairy bittercress (*Cardamine hirsuta*) and sphagnum moss (*Sphagnum* spp.) present, particularly towards the adjacent sludge tank. Other species noted include perennial ryegrass (*Lolium perenne*), sphagnum moss, ribwort plantain (*Plantago lanceolata*), dove's-foot cranesbill (*Geranium molle*), common ragwort (*Jacobaea vulgaris*), spiny sow-thistle (*Sonchus asper*), dandelion (*Taraxacum officinale*), creeping cinquefoil (*Potentilla reptans*), and creeping buttercup (*Ranunculus repens*). A dry well approximately 1m in diameter is located within the grassland.

Reference 4

Adjacent to Reference 1 is another area of modified grassland growing over previously filled sludge tanks, with their boundaries still visible through the grassland. The sward is uniformly low, with an average height of approximately 7cm and a low species density. Small amounts of scattered bramble (*Rubus fruticosus*) are present, and evidence of rabbit (*Oryctolagus cuniculus*) activity is visible through droppings and scratch marks. One area of the grassland is heavily disturbed along the fence boundary, where stone chippings have been laid, and ruderal species are growing through, such as bristly ox-tongue (*Helminthotheca echioides*), cleavers (*Galium aparine*), thistle (*Cirsium* spp.), and dove's-foot cranesbill. The majority of the grassland's composition is similar to that described above, with the addition of tufted hair-grass (*Deschampsia cespitosa*), red fescue (*Festuca rubra*), and curly dock (*Rumex crispus*).

Reference 6

Further north within the STW is a larger area of adjacent grassland. This area exhibits improved species diversity, though species density remains low, with extensive areas dominated by dove's-foot cranesbill, creeping buttercup, and creeping cinquefoil. The grassland had been mown, resulting in a uniformly low sward of approximately 10cm. Within the grassland, sludge tank walls were visible, protruding from the ground and evidencing the area's previous use. Other species present included annual meadow-grass (*Poa annua*), perennial ryegrass, spear thistle (*Cirsium vulgare*), tufted hair-grass, false oat-grass (*Arrhenatherum elatius*), and Yorkshire fog (*Holcus lanatus*).

Reference 7

Just east of the works area is a small solar farm surrounded by unmanaged tall grass with a similar composition to Reference 6.

Mixed scrub (h3h, 32)

Running along the southern boundary of the STW is a narrow strip of dense mixed scrub with scattered trees. Situated just inside this strip is a chain-link fence that encloses the entire site. The scrub is approximately 3m in width and comprises a mixture of mature and young growth, established on a slope descending to a dry ditch. The majority of the scattered trees within the scrub area are dead and are heavily clad in common ivy (*Hedera helix*). Common ivy also forms dense ground cover at the periphery, alongside common nettle (*Urtica dioica*). The scrub species identified include blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), field elm (*Ulmus minor*), and elder (*Sambucus nigra*).

Bramble scrub (h3d)

Bordering the area of grassland proposed for the welfare unit is a section of dense bramble scrub, cordoned off by wooden fence panels. Within this area are two sunken tanks constructed of red brick and mortar, each approximately 1.5m² in area. The tanks appear to have previously held water but are currently dry, with vegetation growing in and around them. Various materials have been stored within the area, including wooden planks, Heras fencing, old machinery, and general litter and waste. Vegetation within the area is dominated by bramble, with dog-rose (*Rosa canina*), blackthorn, common nettle, common ivy, and occasional tree saplings, including goat willow (*Salix caprea*), also present.

Other standing water (r1g)

Immediately northwest of the works area is a sludge tank (Reference 5) constructed of concrete and sunken into the ground, surrounded by metal railings. The water within the tank appears to have low turbidity and supports aquatic vegetation. The water level is approximately 1.5m below ground level, with the total depth unknown. A wooden ramp, comprising a foot-wide plank, has been positioned from the tank's edge into the water, presumably to allow wildlife to escape. Vegetation identified within the tank includes broad-leaved cattail (*Typha latifolia*) and duckweed (*Lemna* spp.), though additional submerged species were present but not identified.

Buildings (u1b6)

Several buildings are present on site. The building closest to the works area (Building 1, Reference 3) is a small control room containing a single toilet. The building is constructed from concrete and features a box-gable roof with clay tiles and asbestos guttering. Paned windows set in mortar are present on the east and west elevations, situated beneath overhanging eaves and soffit boxes. A single wooden door is present on both the north and south elevations.

Within the bramble scrub, a small building (Reference 11), with a floor area of no more than 1.5m², is present. The structure is constructed from red brick with a shed-style concrete roof. There is no door present, though an opening with a deteriorating door frame remains. Wooden planks have been laid across the floor, presumably covering access to an area beneath the ground surface.

To the west of the works area is a series of water treatment infrastructure (Reference 10), including sludge holding tanks and a large fibreglass building with a flat roof (Reference 9).

Built linear features (u1e)

A series of hardstanding pathways and roads traverse the site.

Habitats adjacent to site

Running immediately south of the mixed scrub is a short, heavily managed blackthorn hedgerow, separated from the scrub by a dry ditch. Further east, opposite the solar farm, a section of the ditch is wet, holding a shallow level of water (several millimetres) and supporting rush species (*Juncus* spp.).

Beyond the blackthorn hedgerow lies a large pasture field (Reference 13) comprising neutral grassland of low botanical diversity and quality. The water treatment works infrastructure surrounds the remainder of the works area.

Species

Amphibians

The Wiltshire & Swindon Biological Records Centre (WSBRC) data search identified six records of the common frog (*Rana temporaria*). The nearest record was located 640m west of site in 2002, while the most recent record was from 2013, 1.92km northeast of site. Six records of great crested newt (*Triturus cristatus*) were returned in the data search. The closest record was 650m west of site in 2002, while the most recent was 837m south of site in 2011. Four common toad (*Bufo bufo*) records were returned. The closest record was approximately 429m south of site from 2016. The most recent record was from 2017, 1.95km south of site.

The habitats across the site, including mixed sward grassland, and scrub, are considered suitable terrestrial habitats for amphibians, including great crested newt (GCN). The area cordoned off by the wooden fencing provides good terrestrial habitat with hibernacula, such as rubble piles and deadwood, sheltered by the dense bramble scrub. Prior to the survey, Thames Water advised that the area was believed to be cordoned off due to the presence of GCN. Furthermore, the sludge tank immediately adjacent has potential breeding suitability with a mixture of submerged, floating, and emergent vegetation. Several other water bodies are located within 500m of the works area with good connectivity. Consequently, it is considered that great crested newts and other amphibian species are present within this area.

Bats

The WSBRC data search returned 61 bat records across eight known species, including serotine (*Eptesicus serotinus*), whiskered bat (*Myotis mystacinus*), Natterer's bat (*Myotis nattereri*), Leisler's bat (*Nyctalus leisleri*), noctule (*Nyctalus noctula*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and brown long-eared bat (*Plecotus auritus*). The closest records were 1.35km west of the site in 2007 and included a serotine and unidentified pipistrelle species. The most recent records were located 1.45km south of site in 2024 and included the following five species: serotine, Leisler's bat, noctule, common pipistrelle and soprano pipistrelle.

The scattered trees on-site were assessed as generally having limited potential to support roosting bats. The trees are predominantly composed of young to semi-mature trees and did not exhibit any potential roost features (PRFs). However, it should be noted that many trees were covered by ivy cladding. Building 1 adjacent to the works area (Reference 3) contained several PRFs. These have been detailed in Table 1 (*at the end of the note*). At the time of survey, the loft space was inaccessible. Given the number of features that may provide potential roosting opportunities for bats the building is assessed as having low suitability for roosting bats. The building is not considered to have hibernation potential due to its solid concrete construction and likely limited insulation, therefore it does not offer the thermally stable environment necessary to support hibernation roosts.

The habitats on-site are considered to be of "moderate suitability" for foraging and commuting bats. The linear nature of the scrub, combined with the presence of suitable features such as long grass, scrub, and standing deadwood, which may support a range of invertebrate prey, further increases the likelihood of bats utilising the site.

Badgers

The WSBRC data search provided three badger (*Meles meles*) records. The only record with good spatial accuracy was from 2009, 1.98km east of site. The most recent record was from 2020.

The habitats on-site provide suitable opportunities for badgers for foraging, commuting, and potential sett excavation, while maintaining good connectivity with the surrounding natural environment and waterbodies. The dense scrub offers suitable cover for commuting and sett-building, whereas the grassland provides potential foraging resources. The sloped topography of the mixed scrub is particularly well-suited for sett construction. Although no setts were identified during the survey, the dense scrub could easily conceal such features. Several signs of badger activity were recorded, including distinct mammal paths, potential snuffle holes, and push-unders within the chain-link fence. A more definitive sign of badger activity was recorded in the form of badger scat (*w3w: decoding.tram.stardom*). The scat

was cylindrical, approximately 5cm in length and 2.5cm in width, and contained several berries, seeds, and some hair. It had a characteristic sweet smell. Given the quality of the habitat, its connectivity, and the field evidence, it is considered likely that badgers use the site for foraging and commuting, with potential for sett construction.

Birds

1171 records of 66 species of bird were returned in the WSBRC data search. 13 of these species are listed under Schedule 1 of the Wildlife and Countryside Act (WCA). The most recent record was a curlew (*Numenius arquata*), a species of principle importance, recorded in 2024, 915m north of the site. The closest record was a red kite (*Milvus milvus*), listed under Schedule 1 of the WCA, recorded 358m north of site in 2015.

The scrub and tall grassland habitats on site provide suitable opportunities for nesting birds. It is therefore considered likely that a range of common bird species utilise the site during the breeding season (March-August inclusive).

Hazel dormice

No records of the hazel dormouse (*Muscardinus avellanarius*) were returned in the WSBRC data search. The scrub provides structurally diverse habitat suitable for hazel dormouse due to its structural complexity and dense sheltering vegetation. However, the absence of diverse woodland limits opportunities for arboreal commuting and reduces available food sources. Given the absence of local records and limited suitable habitat present on-site, hazel dormouse presence within the site is unlikely but cannot be entirely ruled out.

Invertebrates

275 records of 46 invertebrate species were returned in the data search. The closest records were two small emeralds (*Hemistola chrysoprasaria*) recorded 1.08km southeast of site in 2010. The most recent record was a lackey (*Malacosoma neustria*) in 2021; however, due to poor spatial accuracy, the exact location is unknown.

The habitats on site are likely to support a range of invertebrate species due to the structural diversity present, including features such as standing deadwood. The waterbodies on site also provide greater variety of habitats, and provide niches for aquatic invertebrates. Given the habitats on site there is the potential for a significant species assemblage.

Hedgehogs

77 records of west European hedgehog (*Erinaceus europaeus*) were returned in the data search. The closest records were approximately 551m south of site in 2020 and 2022. The most recent record was 1.41km south of site in 2024.

The scrub and grassland habitats are considered suitable to support sheltering, foraging and commuting hedgehogs. Given the suitable habitat, the numerous records returned in the data search, and their proximity to the site, it is considered likely that hedgehogs utilise the site and surrounding areas.

Reptiles

WSBRC provided one adder (*Vipera berus*) record located 421m south of site in 2016. 62 slow worm (*Anguis fragilis*) records were returned. The closest record was 1.52km south of site in 2006. The most recent records were from 2019 and included 18 accounts, the closest of which was 1.63km south of site.

The habitats present on site are considered suitable for all four common species of reptiles in England. The grassland and scrub mosaic across the site provides ample opportunities for resting, sheltering, basking and hunting reptiles. The bramble scrub is particularly suitable for reptiles, with hibernacula noted at ground level, sheltered by dense bramble scrub. It is considered likely that reptiles are present on site.

Impacts

Designated sites

The proposed development is a substantial distance from the single designated site identified in the data search, Red Lodge Wood LWS. The proposed works will have no effect on the habitats or species that the LWS is designated for. As such, no impacts to designated sites are anticipated.

Habitats

A portion of the modified grassland habitat (Reference 1) will be lost to facilitate the 6m x 3.5m hardstanding area. Other areas of modified grassland may also be temporarily disturbed by storage of materials and vehicle access. The proposed works may also require the removal of approximately 6m² of the bramble scrub in order to facilitate the welfare unit.

Species

- Killing/injury and damage/destruction to suitable habitats of GCN resulting in a contravention of the law
- Indirect impacts from noise, vibration or artificial light spillage have the potential to cause disturbance to potentially roosting bats
- Permanent loss of an area of “moderate suitability” bat foraging and commuting habitat, considered ecologically significant at a local level
- Killing/injury to badgers during construction
- Permanent loss of suitable foraging and commuting habitat for badgers, considered ecologically significant at a local level
- Destruction of, or damage to, active birds’ nests throughout the development, resulting in a contravention of the law
- Permanent loss of suitable foraging and commuting habitat and killing/injury to hedgehogs during development, considered ecologically significant at a local level.
- Killing/injury to reptiles to facilitate the development, resulting in a contravention of the law
- Permanent loss of suitable reptile habitat, considered ecologically significant at a local level

Recommendations

Habitats

Modified grassland

The following mitigation measures should be implemented to prevent unnecessary grassland degradation where possible:

- Restrict vehicle and machinery access to pre-defined tracks or hardstanding areas.
- Use temporary matting or trackway systems for heavy machinery if crossing grassland is unavoidable.
- Clearly mark boundaries of retained grassland with temporary fencing or barriers.
- Avoid works when soil is wet, as this increases compaction risk.
- Scarify and re-seed compacted patches with a suitable grassland mix.

Should the scrub area require removal in addition to the 21m² of modified grassland, and the total area of permanent vegetation loss exceed 25m², all permanent habitat removal will require offsetting to achieve “No Net Loss” in accordance with the most up-to-date Biodiversity Net Gain Delivery Guidance Note produced by Thames Water.

Species

Bats

The following mitigation is recommended to minimise disturbance to foraging and commuting bats and roosting bats in adjacent habitat.

During the works, the following mitigation should be followed:

- Prohibit heavy vehicle and plant access within 10m of Building 1 (Reference 3) to minimise disturbance to roosting bats from ground vibrations; where access is unavoidable, use track matting to reduce and absorb vibrations.
- All works should be undertaken during normal working daylight hours. Any artificial lighting (if absolutely required) should not illuminate the boundary habitats;
- Where security lighting is required, it is recommended that these are motion activated with hooded luminaires and directed away from the boundaries;
- No lighting should fall or be directed on to the boundary vegetation;

Any new temporary or permanent lighting should be designed to avoid light-spill onto the site boundaries and boundary vegetation. If permanent lighting is to be installed it must follow the principles of mitigation as outlined within the Bat Conservation Trust and Institution of Lighting Professionals Guidance Note.

Mitigation measures for external lighting will include:

- Only luminaires with an upward light ratio of 0% should be used;
- All external luminaires used on site should lack UV elements and be warm-white coloured (ideally <2700 Kelvin) to reduce blue-light components;
- LED luminaires should be used due to their sharp cut-off, lower intensity, good colour retention and dimming capability;
- Where security lighting is installed, this should be motion-activated;
- Lights should not be directed at boundary vegetation. Where required, lights can be fitted with hoods, baffles or louvres to reduce back-spill.

Great crested newt

Considering the presence of GCN records within 1km of the site and ponds close to site, it is considered likely that GCN are present on site. As such, any works undertaken during peak GCN activity periods (March – April and September – October) must be carried out under the supervision of a qualified Ecological Clerk of Works (ECoW).

Based on the area of habitat removal (approximately 21m²), the distance of the site to potential GCN breeding ponds, and application of these parameters within the Method Statement template for the GCN Mitigation Licence Risk Assessment Tool (Natural England), the likelihood of committing an offence is assessed as highly unlikely. Therefore, a licence is not considered necessary for the proposed works.

Scrub removal should be avoided wherever possible. However, if the clearance of scrub or dense vegetation is necessary, a two-phase vegetation clearance method should be employed to minimise risks to GCN and other protected species. This should be carried out under the supervision of an ECoW during peak GCN activity periods. The initial cut should reduce vegetation to approximately 30cm (1 foot) in height, allowing the areas to be inspected for signs of great crested newt, other protected species and hibernacula, and allowing species to disperse naturally. Following the confirmed absence of protected species and great crested newt the final cut can be undertaken. Rubble piles, logs, and deadwood should be dismantled under ECoW supervision at all times if removal is required.

Hazel dormouse

As the presence of hazel dormice cannot be ruled out on site, it is important that appropriate mitigation measures are implemented. Hazel dormice are known to hibernate in modified grassland; therefore, if works are scheduled during the winter months, all operatives must read and acknowledge the Safety Bulletin: Hazel Dormouse and be familiar with the identification of hazel dormouse nests. In addition, the work area should be carefully checked for the presence of hazel dormice prior to the commencement of work activity.

Again, scrub removal should be avoided wherever possible. However, if the clearance of scrub or dense vegetation is necessary a two-phase vegetation clearance method should be employed under ECoW supervision. This phased approach also provides an opportunity for any undetected dormice to disperse naturally. If removal is required, rubble piles, logs, leaf piles, and deadwood should be carefully dismantled by an ECoW at any time of year.

Reptiles

All dense vegetation should be cleared in a two-stage process (as mentioned above) under the supervision of a qualified ECoW at all times to minimise the risk to protected species and reptiles. In addition, any habitat features such as rubble piles, log stacks, brash piles, or deadwood must be carefully dismantled by hand under ECoW supervision if removal is required.

Badgers

As the site provides suitable habitat for sett-building, a pre-commencement ecological walkover survey should be undertaken if works begin more than three months after the date of this survey. The survey should include a 30m buffer around the clearance area to identify any signs of badger presence, such as newly established setts, latrines, snuffle holes, well-used paths, scratching posts, hair traces, or footprints. If any evidence of badger activity or new setts is recorded, appropriate buffer zones must be implemented in accordance with current guidance. Where disturbance or damage to an active sett is likely, works may not proceed until a development licence has been obtained from the relevant statutory authority, such as Natural England.

Any trenches on site must be covered over night or a means of escape provided for any badgers which may become trapped within the excavation. The trenches, if left open will need to be inspected daily prior to works commencing.

If any equipment or materials are to be stored on site overnight, all possible entrances must be blocked and checked for wildlife the following morning prior to work commencing. If present, the Ecologist should be contacted for advice.

Birds

Any vegetation identified as suitable for nesting birds should be subject to a pre-clearance nesting bird check conducted by an ecologist or other suitably experienced individual. This survey must take place within 48 hours prior to vegetation removal during the bird breeding season (typically from March to September). If active nests are discovered, the affected vegetation must be left in place and an appropriate buffer zone, established by the ecologist, maintained to avoid disturbance until the young have fledged and the nest is no longer active.

Hedgehog

If scrub removal is required, the base should first be checked for sheltering hedgehog, and a further check should be taken following the first phase of the cut. Any hibernacula should be dismantled and checked prior to clearing. Any trenches on site must be covered over night or a means of escape provided for any hedgehogs which may become trapped within the excavation. The trenches, if left open will need to be inspected daily prior to works commencing.

If any equipment or materials are to be stored on site overnight, all possible entrances must be blocked and checked for wildlife the following morning prior to work commencing. If present, the Ecologist should be contacted for advice.

Table 1. Summary of PRFs supported by Building 1

Feature Number	Location	Type	Height (metres)	Size (inches)	Description
1	East elevation	Gap between soffit box and wall	2	2 x 4	Tall gap present between fascia board and north wall leading into soffit space.
2	North elevation	Holes in the wall	2.5	2	Several holes in north elevation wall likely leading into loft void.
3	South elevation	Holes in the wall	2.5	2	Several holes in south elevation wall likely leading into loft void.

Photographs



Plate 2: Mammal path leading into scrub



Plate 4: Potential roost feature 1 (PRF 1) within Building 1



Plate 5: Building 1 PRF 2



Plate 6: Building 1 PRF 3



Plate 7: Reference 1 modified grassland



Plate 8: Reference 2 hardstanding road



Plate 9: Reference 3 Building 1



Plate 10: Reference 4 modified grassland



Plate 11: Reference 5 sludge tank



Plate 12: Reference 7 tall modified grassland surrounding solar panels



Plate 13: Reference 8 dense mixed scrub with scattered trees



Plate 14: Reference 11 small building within bramble scrub



Plate 15: Reference 12 bramble scrub



Plate 16: Hibernacula within bramble scrub



Plate 17: Disused brick tank within bramble scrub



Plate 18: Wooden fencing surrounding bramble scrub



Plate 19: Native blackthorn hedgerow



Plate 20: Reference 13 other neutral grassland pasture field

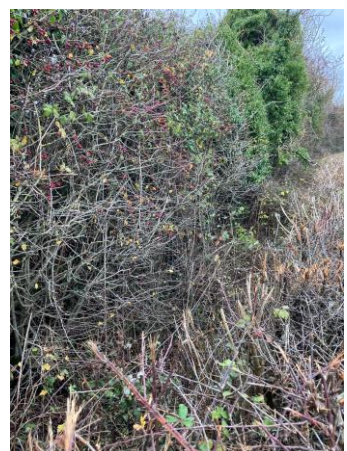


Plate 21: Dry ditch



Plate 22: Dry well within Reference 1



Plate 23: Materials stored within Reference 12



- Key**
- 30m Buffer
 - h3h, 50 - Dry ditch
 - h2a - Native hedgerow
 - g4, 128 - Tall modified grassland
 - g3 - Neutral grassland
 - g4 - Modified grassland
 - h3d - Bramble scrub
 - h3h - Mixed scrub
 - u1b5 - Buildings
 - u1b6 - Other developed land
 - u1e - Built linear features
 - r1g - Other standing water

Client	Thames Water		
Project	Purton STW Ecological Walkover		
Title	Habitat Map		
Drawn	JC	Checked	AS
Date	06.11.25		
Drawing No.	Appendix A		Revision
			Issue
This drawing is confidential and the property of MAYDENCROFT LIMITED and must not be reproduced without written permission			
Scale	1:500		Original Size
			A3
Licensing	Contains OS data © Crown copyright Google Maps (2019)		Orientation
			