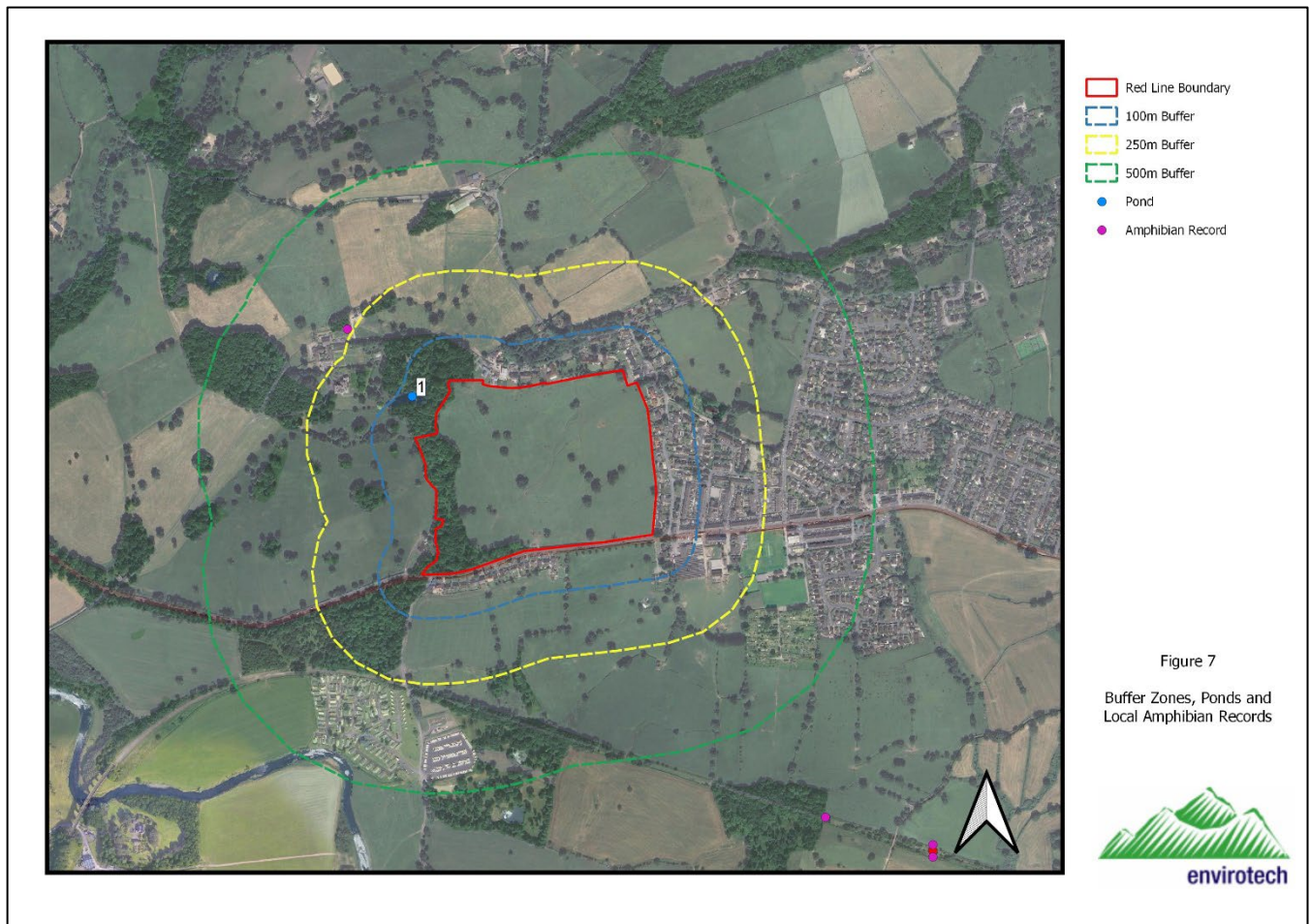


residential housing and a prominent single carriageway road. Whilst not a physical barrier to the dispersal of amphibians, this area of the site is regarded as being a potentially



hostile environment to them.

- 6.3.6 A single pond is located with a 500m radius of the site, comprising a large managed pond within the wooded gardens of Read Hall immediately adjacent the site. At its nearest point this pond is located approximately 40m north-west of the red line boundary.
- 6.3.7 Inspection of the pond (Pond 1) revealed this feature to be partially managed, being bound by a mixture of hardstanding pond banks and fringing marginal vegetation comprising Yellow iris and Bulrush. Some areas of the pond appear shallow and choked by silt/fine mud and leaves (as seen at its eastern extent), but the pond is a suitable size and surrounded by excellent foraging habitat comprising semi-natural deciduous woodland, wooded garden and a mosaic of copses and tree lines.
- 6.3.8 A second waterbody is denoted on OS mapping, located 60-70m north-west of the site. Ground analysis revealed this to be a shallow, circular plunge pool associated with a small stream/gill. This feature is highly unlikely to be utilised by amphibians given its strong waterflow, negligible aquatic vegetation and minimal accessibility.
- 6.3.9 Figure 7 below denotes a map of the site in relation to Pond 1 and local amphibian records. The relevant buffer zones are also demarcated.

Pond 1	1
Location	1
Pond area	0.8
Pond drying	1
Water quality	0.67
Shade	0.8
Fowl	0.67
Fish	1
Ponds	0.4
Terrestrial habitat	1
Macrophytes	0.5
<i>HSI</i>	<i>0.75</i>
Table 3 Results of Habitat Suitability Index.	

6.3.10 Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's Licensing process was used to determine the suitability of the pond for great crested newts. The HSI was developed as a tool to aid fieldworkers to give ponds and their surrounding habitat a numerical score in terms of their suitability for great crested newts. See Table 3.

6.3.11 Within the Natural England Method Statement application form for great crested newt Licences, guidance states the following approach (Natural England, 2008):

'If a pond has a very low HSI score (say <0.5) then there would typically be a minimal chance of great crested newt presence. Hence, with due care and in limited circumstances, the HSI might be used in the absence of newt survey to help conclude that an offence is highly unlikely and therefore work could proceed in that area without a licence. This application of the HSI should only be used where the predicted impacts - were newts to be present - would be low (eg, development at least 100m from pond, permanent habitat loss <0.5ha or temporary habitat loss <5ha). The developer and consultant should realise that there would still be a risk of committing an offence, but it would typically be so low as to be negligible. Obviously, note that if HSI >0.5, this is not confirmation of newt presence; a newt survey would be required to confirm this'.

6.3.12 The pond scores 0.75 (Good) for great crested newt suitability. Factors making this pond suitable for use by GCN relate to its appropriate area, presence of aquatic macrophytes and dominance of surrounding high-quality habitat (of use to newts at all stages of their lifecycle). The potential for Great Crested Newts to utilise this pond is considered possible, as is the woodland fringing the west of the site. Resultingly, it is considered possible that individual GCN/amphibians may stray onto the site's parkland given its linked nature. Dependence on this parkland for commuting, foraging and hibernating GCN however is considered unlikely given the ponds are within woodland which provides higher quality habitat.

6.3.13 As the survey of the site was undertaken outside of the optimum period for presence/absence surveys (and eDNA testing can only be undertaken between 15th April and 30th June), Natural England's rapid risk assessment tool was used for this site (Figure 8). This tool takes a worst-case scenario approach by assuming Great Crested Newts are present in all ponds considered, factoring in their distance from the proposal and the area of land lost or damaged (either permanently or temporarily).

6.3.14 Given the development requiring extensive ground works is between 1 and 5Ha, the proposal would not result in an offence in relation to GCN. Ground work for planting new trees and changes to management of the grassland would have no negative impact on GCN.

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding	No effect	0
Land >250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.04
Individual great crested newts	No effect	0
		Maximum: 0.04
Rapid risk assessment result:		GREEN: OFFENCE HIGHLY UNLIKELY

Figure 8- Natural England's Rapid Risk Assessment Tool for GCN

6.3.15 A new pond is to be created adjacent the woodland which will provide additional breeding habitat for amphibians.

6.4 Badger

6.4.1 A single badger record is located within a 2km radius of the site, being located ~1250m to the south-west between the villages of Read and Great Harwood.

6.4.2 A badger sett was identified within the belt of broad-leaved deciduous woodland in the west of the site. This sett was located in a steep section of banking beneath a rocky outcrop. Only a single D-shaped entrance point was located here. No fresh latrines, bedding, badger hair or scratch marks were located in the vicinity of the sett or on adjacent features such as fences, walls or trees.

6.4.3 Well established runs and occasional snuffle holes were however observed elsewhere within the woodland (approximately 150m south of the sett). At this stage, we do not consider the identified sett to be in active use (established layers of cobwebs were found to cover the sett entrance). It is possible this feature is operated as an outlier sett, utilised by a small number of colony members when commuting longer distances, during the autumn when the main sett is crowded with young or when opportunistic badgers are exploiting seasonal foraging opportunities nearby.

6.4.4 Judging by the quality of this woodland belt and the definition of identified badger runs, it is highly likely badgers utilise the woodland on site as a major thoroughfare. Badgers show a preference for broadleaved woodland with clearings/glades, in addition to

parkland, especially given the presence of soil invertebrates such as earthworms and beetle larvae. Resultingly, badgers may pass through the parkland area of the site and into adjacent residential gardens.

- 6.4.5 The proposal should enhance open areas of grassland adjacent the woodland resulting in enhanced foraging opportunities. The woodland can be adequately fenced/ restricted to prevent interference with the sett.

6.5 Bats

- 6.5.1 There are 16 records of four species of bat within a 2km radius of the site, relating to Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Noctule (*Nyctalus noctula*) and Whiskered/Brandt's (*Myotis mystacinus* and *brandtii*).
- 6.5.2 The foraging habitat on site is of a high value for use by bats given the dominance of parkland and deciduous woodland. Parkland habitat harbours a good diversity of saproxylic, phytophagous and predatory insects given the dominance of deadwood, large mature trees and the soil fauna associated with grazed sheep pasture. Scattered field trees undoubtedly provide valuable stepping stone habitat for foraging and commuting bats within the local area, especially given their connectivity with other areas of woodland, scattered field/garden ponds, vegetated streams/brooks and copses. Bats favouring half-open surroundings such as Common Pipistrelle, Soprano Pipistrelle, Whiskered, Brandt's and Noctule are all likely to favour parkland habitats.
- 6.5.3 Woodland in the west of the site constitutes a tall length of prominent broadleaved trees, providing a dark and sheltered belt of valuable commuting habitat for species of bat that are wary of open space, choosing to hunt along field lines, linear boundary features or within pockets of prominent vegetation. The woodland possesses a high degree of structure, diversity and interconnectivity and offers suitable foraging habitat for use by Brown Long-Eared (*Plecotus auritus*) and Natterer's (*Myotis nattereri*).
- 6.5.4 All trees on site were assessed in accordance with Collins ed. (2023) and assigned a risk category. With the exception of the small Hawthorn trees and Horse Chestnut in the north-east corner of the site, it was judged that all field trees were considered Category PRF-I or PRF-M. **Whilst not all field trees are considered ancient or veteran in age, many of these trees possess features indicative of trees in the latter stages of their lifecycle.**
- 6.5.5 Potential roost features included standing deadwood, dead/hollowed out trees, suspected tree cavities, tear outs, limb breaks, peeling bark, splits in stems/branches and cankers. Some potential roost features are shown in Table 4.



A mature Alder and unidentified dead tree opposite the entrance gate to the field provide some of the best examples of suitable roost features for use by bats.



These include extensive limb breaks, splits and tree hollows.



Numerous limb breaks were documented at height in many of the field trees

	Prominent tear outs in the main trunk of one of the field trees in the west of the site
	T26- Veteran with large cavity in stem

Table 4- Trees

- 6.5.6 We consider bat species are likely to rely on the site for both feeding and roosting. Parkland is highly valued for its large open-grown trees, most of which are of a mature age status. Such trees represent the best sites in England for old-growth features and deadwood, providing high-quality roost features for use by both crevice and void-dwelling bats. This includes species that exclusively roost in trees such as Noctule. The site is highly likely to be of a local significance for bats.
- 6.5.7 Enhancement of the retained grassland which is currently species poor and heavy grazed should result in an increase in the availability of invertebrates for foraging. The retention of trees would be required to maintain roosting opportunities. These can be supplemented with bat boxes in retained trees and woodland.
- 6.5.8 Overall foraging opportunities will be enhanced and as there is no tree loss, there will be no loss of tree roosts. The foraging potential of the site will be enhanced due to increases in structural diversity of the retained parkland.

6.6 Birds

- 6.6.1 There are 261 records of birds within 2km of the site. Pheasant (*Phasianus colchicus*) and Blackbird (*Turdus merula*) were observed foraging at ground level within the wood during the survey, a number of Woodpigeon (*Columba palumbus*) roosting in some of the larger field trees along the western margin of the site. Corvids were also seen browsing the western extremity of the grazed sheep pasture.
- 6.6.2 Garden birds and those typical of farmland fringes undoubtedly occur in the local area, including the site. For example, there are extensive records for Goldfinch (*Carduelis carduelis*), Blue tit (*Cyanistes Caeruleus*) and Coal tit (*Periparus ater*) within 2km.
- 6.6.3 The site may have some potential for birds typical of open farmland, meadow and pasture habitats such as Yellowhammer (*Emberiza citrinella*) and Linnet (*Linaria cannabina*), although there are no records of these birds within a 2km radius of the site. Ground nesting birds such as Skylark (*Alauda arvensis*) and Meadow Pipit (*Anthus pratensis*) may occasionally make use of the field during the breeding season, pending grazing pressure is eased to allow formation of grassy tussocks at least 15-20cm high.
- 6.6.4 There are extensive records of parkland and woodland birds within 2km of the site such as Tree Creeper (*Certhia familiaris*), Nuthatch (*Sitta Europaea*), Spotted Flycatcher (*Muscicapa striata*), Wood warbler (*Phylloscopus Sibilatrix*), Song Thrush (*Turdus philomelos*) and Mistle Thrush (*Turdus viscivorus*). There are also records of cavity-nesting and hole-dwelling birds such as Tawny Owl (*Strix aluco*), Green Woodpecker (*Picus Viridis*) and Greater Spotted Woodpecker (*Dendrocopos major*), each of which are heavily dependent on mature trees for both shelter and nesting. Field trees contained an abundance of features for use by these birds.
- 6.6.5 The hedgerow bounding the south of the site is heavily flailed in areas, consisting of sparse patches of bare Hawthorn and Elder, especially towards its eastern extent. Small opportunistic hedgerow birds such as Dunnock (*Prunella modularis*), Wren (*Troglodytes troglodytes*) and Tit (*Cyanistes sp.*) are however likely to make use of this habitat.

- 6.6.6 The habitat on site is likely of local significance for foraging and nesting birds given the dominance of woodland and parkland habitats, the nesting features field trees provide and the insect populations they are likely to support.
- 6.6.7 Enhancement of the retained grassland which is currently species poor and heavy grazed should result in an increase in the availability of invertebrates for foraging. The retention of mature and veteran trees would be required to maintain nesting opportunities. Bird boxes can be erected in retained trees and woodland. A mixture of grass sward lengths would be ideal for species such as Barn Owl (*Tyto alba*) and Kestrel (*Falco tinnunculus*) which would currently find the site of low value for foraging due to the short sward length, not favoured by small mammals.

6.7 Brown Hare

- 6.7.1 Brown hare are a SPI. There are two records of brown hare within 2km of the site, these records located ~1000m to the north-west.
- 6.7.2 No indication of brown hares was recorded on the site.
- 6.7.3 The site boundary has some potential for brown hares to create forms but use of the site is likely to be limited due to its open nature, presence of livestock and regular human presence (especially the site's proximity to Whalley Road/A671).
- 6.7.4 Brown hares may occasionally move through the site given the surrounding mosaic of parkland, woodland, rough field margins and tree lines, although this may be tightly constrained given the dominance of large fields of open pasture. Provision of arable fields comprising cereal crops is also limited.
- 6.7.5 Enhancement of the retained grassland which is currently species poor and heavy grazed should result in an increase in the availability of palatable forbs for feeding. The retention of woodland would be required to maintain resting opportunities and creation of forms. Woodland is in particular important during the winter for this species and the boundary woodland will be retained in the proposed scheme. Underplanting with scrub would provide cover both for this species and badger.

6.8 Invertebrates

- 6.8.1 There are 537 notable invertebrate records within 2km of the site.
- 6.8.2 Historic parkland habitats are also important resources for butterflies and moths, of which there are numerous records within 1000m of the site. These include records for Comma (*Polygonia c-album*), Garden Tiger Moth (*Arctia caja*) and Speckled Wood Butterfly (*Pararge aegeria*).
- 6.8.3 Mature field trees located throughout the site provide a valuable resource for invertebrates within the local area. Parklands possess distinctive saproxylic invertebrate communities dependent on dead or dying wood. These include a number of wood-boring beetles, spiders, specialist moths and flies of sap-runs and rot-holes.

- 6.8.4 Old parkland trees are a declining resource in England and are associated with over 2000 different species of invertebrates, many of which rely on specific sources of deadwood. Examples include families of woodboring beetle that feed on heartwood, goat moth larvae that feed on tree sap and stag beetles, whose larvae feed on rotting tree stumps and decaying tree roots beneath the soil surface. Resultingly, large parkland trees support a huge quantity and diversity of invertebrates. For example, English Oak has been found to support the life cycle of over 400 species of insect, more so than any other tree.
- 6.8.5 Overall, well managed parkland habitat harbours a good mix of saproxylic, phytophagous and predatory insects given the dominance of deadwood, large mature trees and the soil fauna associated with species rich pasture, providing a valuable food resource for birds and bats within the local area.
- 6.8.6 The current parkland has heavily grazed, species poor grassland. Whilst the trees contain deadwood, their longevity is reduced due to root compaction and livestock damage.
- 6.8.7 Enhancement of the retained grassland which is currently species poor and heavy grazed should result in an increase in the availability of food sources. The retention of mature and veteran trees would be required to maintain opportunities for dead wood species. The introduction of new dead wood habitat, is also possible as part of the landscape/ parkland restoration scheme.

6.9 Reptiles

- 6.9.1 There is a single reptile record within a 2km radius of the site. This relates to Common Lizard (*Zootoca vivipara*), which is situated 1000m north-west of the site.
- 6.9.2 The majority of the site has a low value to reptiles being devoid of significant ground cover. Parkland edges may have some potential for basking reptiles given the field is free draining and southern facing, but there is little in the way of suitable cover/refugia and habitat diversity at ground level.
- 6.9.3 Reptiles are likely to occur along the boundary of the site and in the adjacent woodland, providing linkage across the local landscape.
- 6.9.4 The retention of boundary woodland and reduction in the intensity of grazing on the site would benefit this species group.

6.10 Other

- 6.10.1 The site may be crossed by species such Hedgehog (*Erinaceus Europaeus*) but species diversity at ground level is poor due to intensive grazing. A longer, less grazed sward, would provide more opportunities for this species.

6.11 Statutory and Non-Statutory Sites

Direct Impacts:

- 6.11.1 The western and south-western edge of the site is flanked by ancient woodland. It is unlikely the development will result in the direct loss or a negative impact on this woodland.
- 6.11.2 Having ground truthed the site, the core development area is judged to consist of parkland, a HPI. This does not appear on the Natural England data set for this habitat type. Development of the site would lead to the loss of parkland locally.
- 6.11.3 Whilst development will not result in the direct loss of field trees, the value of parkland is in its designation as a habitat mosaic, this being the combined ecological value of its ground vegetation, field trees and their relevant management practices at the landscape level. Resultingly, substitution of any area of grazed sheep pasture with housing will result in the loss of parkland, regardless of the retention of valuable field trees.
- 6.11.4 This will need to be offset against the enhancement/ restoration of a greater area of parkland which is retained. Opening up the parkland for public use would also provide local community benefit.
- 6.11.5 The veteran tree will be retained and protected so not impacted. A reduction in livestock grazing intensity should benefit this tree.

Indirect Impacts:

- 6.11.6 It is possible if fencing is removed, the ancient woodland on site may be indirectly damaged through increased footfall and additional traffic caused by building occupants and site visitors.
- 6.11.7 This would need to be managed/ controlled via suitable guidance structures and signage.
- 6.11.8 It is possible the veteran tree may be indirectly damaged through increased footfall and additional traffic caused by building occupants and site visitors. This would need to be managed/ controlled via suitable guidance structures and signage.

7. Parkland Restoration and Ecological Process Recovery

7.1 *Hammond Ground*

- 7.1.1 Hammond Ground comprises historic parkland forming part of the designed landscape associated with Read Hall. The ecological value of parkland is derived not solely from the presence of mature trees, but from the interaction between:

- Open-grown veteran trees
- Grazed grassland
- Soil processes
- Deadwood continuity
- Low-intensity historic land management

- 7.1.2 At present, the parkland is in a **degraded condition** as a result of:

- Continuous hard sheep grazing
- Soil compaction within root protection areas
- Suppressed grassland diversity
- Lack of structural heterogeneity in the sward
- Likely limited invertebrate productivity

7.1.3 Without intervention, the site risks functional decline into short, species-poor pasture with reduced ecological resilience.

7.1.4 The development has therefore been deliberately confined to one side of the site to retain the integrity of the wider parkland landscape and enable its long-term ecological restoration.

7.2 *Enhancement Philosophy*

7.2.1 Enhancement will focus on **restoring ecological processes**, improving habitat condition and extending the functional lifespan of existing veteran and mature trees. Additional trees will be planted to replace those coming to the end of their lifespan but an “open” parkland landscape will be retained.

7.2.2 This approach:

- Maintains landscape character
- Preserves historic setting
- Enhances biodiversity value
- Aligns with Section 41 NERC Act duties
- Delivers measurable biodiversity net gain

7.3 *Grazing Reform and Grassland Condition Improvement*

7.3.1 The primary mechanism for restoration will be grazing reform.

7.3.2 Measures will include:

- Reduction in stocking density
- Transition to seasonal conservation grazing
- Periodic rest years within defined compartments
- Removal of fertiliser inputs
- Avoidance of blanket anthelmintic dosing

7.3.3 These measures will allow:

- Increased sward height variability
- Greater flowering frequency of forbs
- Gradual reduction of soil nutrient enrichment
- Recovery of soil structure and porosity
- Increase in dung-associated invertebrates

7.3.4 Over time, this will shift the grassland from a uniformly short, agriculturally improved pasture towards a more species-diverse parkland grassland mosaic.

7.4 *Veteran Tree Safeguarding and Deadwood Continuity*

7.4.1 The ecological importance of the parkland lies heavily in its mature and veteran trees.

7.4.2 Enhancement measures will include:

- Formalised Root Protection Areas
- Exclusion of livestock from veteran RPAs where necessary
- No routine crown reduction
- Retention of fallen limbs in situ
- Creation of discreet habitat piles
- Acceptance of standing deadwood where safe

7.4.3 This ensures:

- Continuity of saproxylic habitat
- Protection of fungal communities
- Retention of bat roost potential
- Nesting opportunities for cavity-nesting birds
- Long-term veteran tree longevity

7.5 *Stream and Hydrological Enhancement*

7.5.1 Existing drainage lines and streams will be enhanced through:

- Livestock exclusion buffers
- Naturalisation of banks
- Encouragement of marginal vegetation
- Increased geomorphological variability

7.5.2 This will:

- Improve amphibian suitability
- Increase aquatic invertebrate diversity
- Enhance foraging opportunities for bats and birds
- Improve water quality resilience

7.6 *Woodland Edge and Understorey Regeneration*

7.6.1 Although structurally strong, the adjacent ancient woodland exhibits suppressed regeneration due to browsing pressure.

7.6.2 Enhancement measures will include:

- Underplanting with locally appropriate native species

- Individual tree protection guards
- Selective Rhododendron control
- Edge habitat buffering

7.6.3 This will restore vertical structure and long-term resilience of the woodland system.

7.7 *Dung Invertebrate Recovery*

7.7.1 The adoption of targeted rather than blanket sheep worming regimes will allow recovery of dung beetle and other soil invertebrate assemblages.

7.7.2 This has cascading ecological benefits for:

- Badger
- Bats
- Ground-foraging birds
- Soil health

7.7.3 This represents a low-cost but high-value ecological intervention.

7.8 *Long-Term Outcome*

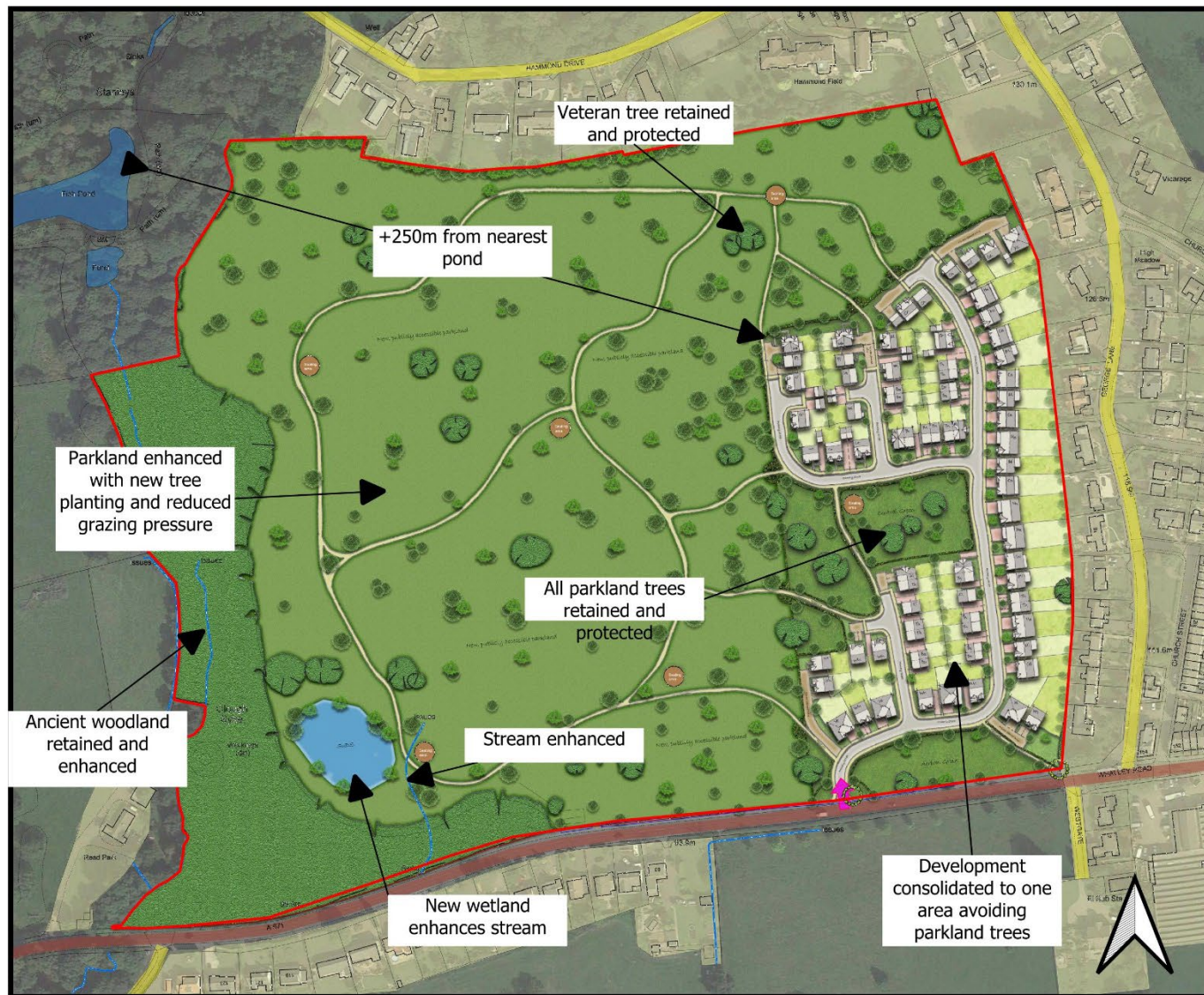
7.8.1 The proposed approach will:

- Improve parkland habitat condition
- Increase invertebrate biomass
- Improve foraging value for bats and birds
- Enhance badger resource availability
- Extend veteran tree ecological function
- Restore ecological processes

7.8.2 Importantly, this is achieved without altering the historic open-grown character of the parkland.

7.8.3 The enhancement strategy therefore represents restoration and condition improvement of a Habitat of Principal Importance rather than simple mitigation of loss.

7.8.4 The ecological strategy moves the retained parkland from a declining agricultural condition toward a resilient semi-natural parkland system. The restoration of ecological processes, rather than superficial landscaping, provides long-term biodiversity uplift consistent with national policy and statutory biodiversity duties.



Red Line Boundary

Figure 9
Indicative site layout



8. REFERENCES

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9. APPENDIX

1	Hedge	Feature
Yes	Length 20m +	
Yes	Hedge is not bounding the curtilage of dwelling	
Yes	Hedge established more than 30years	
Yes	Hedge boundary of protected or common land or land used for agriculture or forestry	
ARCHAEOLOGY AND HISTORY		
No*	Archaeological feature which is included in the schedule of monuments	
No*	Situated wholly or partly within an archaeological site	
No*	Boundary of a pre-1600 AD estate	
No*	Integral part of a field system	
No	Protected species records	
FEATURES		
No	Bank or wall	7 woody species or 6 woody species + 3 features or 5 woody species + 4 features or highway + 4 woody species and 2 features
Yes	Gaps less than 10%	
Yes	Standard trees	
No	Ditch	
No	Parallel hedge	
No	Footpath/ Bridleway	
1	Connection points	
5	Woody species	
0	Average ground flora species	
No	HEDGE CLASSIFIED AS IMPORTANT	

* Historic and archaeological records have not been checked for this site.