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Preliminary Ecological Appraisal of Land at Gilgarran (West Site)

Commissioned by: Mr K. Wirga

April 2018

Consultancy • Ecology • Habitats • Restoration • Wildlife

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To complete the objectives stated in this report, it was necessary for OpenSpace to base our conclusions on the best information available during the period of the project and within the limits prescribed by our client in the agreement. This report is guided by CIEEM Guidelines for Ecological Report Writing.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. We therefore cannot guarantee that the investigations fully identified the degree or extent of e.g. species presence or habitat management efficacy described in this report.

Document Information

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Project: **Land at West Site, Gilgarran – Preliminary Ecological Appraisal**

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CONTENTS

FIGURES

EXECUTIVE SUMMARY

A Preliminary Ecological Appraisal was undertaken in relation to an outline planning proposed residential development on land to the west of Gilgarran.

The parkland and hedge would be categorised as Priority Habitats under S41 and are habitats of at least moderate conservation interest. As the site is designated as "ancient woodland", the site would therefore be classed as of high conservation interest and the removal of any of this habitat would be of high impact. **Consultation with Natural England should be undertaken to assess the current status of the site.**

There are habitats on site, which are potentially suitable for use by bats, breeding birds, red squirrel and other protected species.

Recommendations on further survey work required, methods, good practice and habitat enhancement have been provided in this report.

All European protected species and species of conservation concern should be considered at all times during construction, and if individual animals are suspected or appear within the construction phase, works must stop and further guidance to protect from harm and disturbance should be sought by contacting an approved ecologist.

The Government Circular states, "It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted... [Any necessary] survey should be completed and any necessary measures to protect the species should be in place, through conditions and/or planning obligations, before the permission is granted."

If planning permission is granted, the scheme must mitigate for loss of habitat, impact to EPS or species of conservation concern. Off-site mitigation may be required. All new planting must incorporate using native tree and plant species.

Preliminary Ecological Appraisal for an Outline Planning Application on Land at Gilgarran (East Site)

1 PROJECT BACKGROUND

The general walkover survey has been commissioned by Mr K. Wirga to provide general ecological information for an appraisal of potential ecological constraints concerning an outline planning application for a proposed residential development on land near to Gilgarran (See Figure 1.1 for existing site boundary). As the proposal is for outline planning only, with no plans available, the survey is for general reference only. The proposal is for a residential development, with associated access and landscaping.

To assess any potential impact from the proposed works a Preliminary ecological Appraisal survey has been undertaken. This aims to provide information on the presence of important habitats and the presence / potential for EPS or other species of principal importance on site. There may be a requirement to identify further survey work.

To ensure no offence is committed by disturbing protected species or disturbing other species of conservation concern while undertaking new construction projects, the survey examined evidence for a number of wildlife species with special protection from death, injury or disturbance.

These are species listed under Schedule five and seven of the Wildlife and Countryside Act, 1981 (as amended) and subsequent updates, and the Conservation (Natural Habitats, & c.) Regulations 2017.

The site was also assessed for other species and habitats with protection and interest, such those listed under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006. This recognises priority species to be of principal importance for the conservation of biodiversity and includes species such reptiles, invertebrates and breeding birds (including species under the EC Birds Directive) and habitats such as Purple Moor Grass and Rush Pasture (Marshy Grassland) and Lowland Mixed Deciduous Woodland.

Any species or habitat under the EC Birds or Habitats Directive are also covered by the Environmental Liability Regulations 2009, whereby operators are required to take

preventative action in cases of imminent threat of environment damage, and to remedy environmental damage that they have caused. These Regulations apply in relation to:

(a) damage to protected species and natural habitats if:
(i) it has significant adverse effects on reaching or maintaining the favourable conservation status of the protected species or natural habitat; and
(ii) it is caused by an activity listed in Schedule 1 or by the fault or negligence of an operator whilst carrying on any other activity.

This would include species such as all bat species, otter, salmon, birds such as merlin, hen harrier and kingfisher and habitats such as dry and wet heath and blanket bog.

See Appendix 2 for additional information on wildlife legislation and species status.

Figure 1.1. Plan showing existing area

2 SCOPE OF SURVEY

The survey aims to make a reasoned judgement as to the potential use of the site and adjacent habitat by European Protected Species and other species of conservation concern. The presence of any habitats of conservation concern was also noted. From information gathered during a general walkover survey over the site, an assessment will determine the suitability of the habitat for protected species (and note the potential conservation value of any habitats). Known habitat criteria for each protected species will form the basis for the assessment.

This survey does not include a full ecological survey or detailed population studies. To provide this information other survey techniques would be required to provide data for an informed and balanced opinion.

3 SURVEY METHODOLOGY

The survey area incorporated the site and the site boundaries. Where possible, adjacent land was also assessed / surveyed (see Figures 1.1 and 3.1).

The land and habitat within and surrounding the site were assessed for potential to support protected and important species and any signs or potential features were noted. The survey method involved a visual investigation within the proposed area, site boundaries and an assessment of adjacent land, and any hedgerows and trees.

Areas that could not be accessed were assessed for potential by observations made during the surveys and from information gathered during the desktop study. During a desktop study, aerial photographs and OS maps were used to look for water bodies and other features in the surrounding 500m. The desktop study incorporates the use of Quantum GIS software and Natural England MAGIC website for analysis of proximity to designated sites and mapping purposes, including analysis of data search.

A full Phase 1 Habitat survey (JNCC, 1990) was conducted. This was undertaken in the month of February, which is during a sub-optimal time of year; however, most plant species are still present in vegetative form. The survey identifies habitat types and the boundaries between these. Plant species nomenclature follows that of Stace (2010). On completion of the field survey, the field notes are generated into a final report map with final target notes (see Appendix Four for Phase 1 Habitat Map).

Data search

The survey employed the services of the local biological records centre at Tullie House Museum (Cumbria Biodiversity Data Centre (CBDC)) to provide historical data. It must be noted that the species records are not comprehensive. Any lack of a record does not necessarily constitute an absence of a species from the surveyed area.

Timing

The survey was conducted on 12th February 2018 between the hours of 09:30 and 12:00.

Weather conditions

Temperature 4 °C; clouds 80-100%; wind 1-2; light showers.

Personnel

The survey was undertaken by Diane Dobson (MSc, MCIEEM). Diane is an experienced ecologist with over 10 years' experience in conducting Phase One Habitat and Scoping Surveys.

Figure 3.1. Aerial map of the site (showing field survey area and proposed footprint)

Figure 3.2. Aerial map showing land within 2km from the site

4 RESULTS AND ASSESSMENT

4.1 Site Location

The proposed development site is located on the western edge of Gilgarran. The site is bordered by residential dwellings and woodland to the east, a lane and then woodland to the north and the road from Distington to the south and east.

The wider landscape comprises predominantly the village of Gilgarran, other villages, the eastern edge of Workington and agricultural fields, with small becks, hedgerows and areas of woodland/plantation.

See Figure 3.1 and 3.2 for aerial photograph of the site and surrounds.

4.2 Data Search – Designated Sites

Internationally and Nationally Designated Sites

The following statutory sites are present within 5km from the proposed development site:

- The River Derwent and Tributaries Site of Special Scientific Interest (SSSI) and Rover Derwent and Bassenthwaite Lake (SAC) is approximately 4.3km east of the site at its nearest point, and falls into the SSSI Impact Risk Zone for this feature.
- The site is part of a Natural England designation of “Ancient Woodland”.

4.3 Data Search– Protected Species and Species of Conservation Concern

Species recorded within 2km include (all are within 1-2km of site unless otherwise noted):

- Otter *Lutra lutra:* five records all over 1km away.
- Red squirrel *Sciurus vulgaris*: 109 records, with one record 100m from the site and 44 being within 500 metres.
- Bats, including Pipistrelle species of bat *Pipistrellus sp.*: three records, including two records for maternity roosts, all within 500m.
- Eurasian badger *Meles meles*: one record about 900m away.
- Brown hare Lepus europaeus: one record about 1.5km away.
- Polecat *Mustela putorius*: one record over 1km away.
- Common Lizard *Zootoca vivipara*: three records, all over 2km away.
- Adder *Vipera berus*: seven records, all over 2km away.
- Common toad *Bufo bufo:* two records, both over 1.5km away.
- Atlantic Salmon *Salmo salar*: two records over 1km away.
- Eurasian water shrew *Neomys fodiens*: one record, about 1.7km away.
- European water vole *Arvicola amphibious*: two records, about 1.3km away.

There are a number of records for rare, notable, scarce or protected species (Cumbria Key Species, species under S41 of NERC, notable species and Red List species) of invertebrate within 2km of the proposed residential development site.

The Cumbria Biodiversity Data Centre holds a number of historical records for bird species recorded in the area. These include 96 records for 12 ‘sensitive species’, 405 records for 31 red list species and 371 records for 30 amber list species.

The 'sensitive' status refers to a record for a nationally or locally sensitive species, ‘Red List’ species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery. Amber List species are those with an unfavourable conservation status in Europe; those whose population or

range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.

4.4 Habitats

The site consists of broad-leaved parkland, scrub, bracken and hedges (See Figure 1.1 and 3.1).

Parkland

The site comprises as broad-leaved parkland, with tree and shrub species including Sycamore *Acer pseudoplatanus*, Sessile Oak *Quercus petraea*, Common Gorse *Ulex europaeus*, Brambles *Rubus fruticosus* agg., Hawthorn *Crataegus monogyna* and the invasive Rhododendron *Rhododendron* sp. There has been some management of scrub in the recent past, with brash piles (TN 2 and TN 3) from the recent clearance, including brash from a neighbouring garden.

The sward has been grazed short by horses, with some poaching present (TN 1). Grasses are frequent, including Common Bent *Agrostis capillaris*, Creeping Bent *Agrostis stolonifera*, Red Fescue *Festuca rubra*, with forbs such as Daisy *Bellis perennis* and Creeping Buttercup *Ranunculus repens* also present. Woodland flora is present around the trees, such as Ivy *Hedera helix*, Foxglove *Digitalis purpurea*, Lesser Celandine *Ranunculus ficaria*, Broad Buckler Fern *Dryopteris dilatata*, along with bryophytes such as *Thuidium tamariscinum*, *Plagiochila porelloides*, *Dicranum scoparium*, *Atrichum undulatum*, *Isothecium myosuroides*, *Plagiomnium undulatum*, *Eurhynchium striatum* and *Cirriphyllum piliferum*.

For more information on the trees, see the OpenSpace Tree Report (OpenSpace, 2018).

Scrub and Bracken

Scrub was recorded in the parkland, with species including Hawthorn, Brambles and the invasive Rhododendron. Patches of Bracken *Pteridium aquilinum* was also mapped.

Hedges

The boundaries of the site consists mostly of fences. Outside the fence along the road a hedge was mapped. Species comprise Hawthorn, Common Gorse, Grey Willow *Salix cinerea*, Sycamore and Silver Birch.

Assessment

The parkland has been fairly recently derived from the woodland and would be classed as part of the woodland (woodlands contain open areas as part of the habitat) and also would be categorised under the S41 Priority Habitat Lowland Mixed Deciduous Woodland and be a habitat of at least moderate conservation interest.

The site is part of a Natural England designation of “Ancient Woodland” and classed as “Broad-leaved Parkland”. The parkland has ancient woodland ground flora indicators present during the current survey and, with the presence of numerous trees, this is indicative of ancient woodland habitat still being present. Therefore, the habitats on site would be classed as high conservation interest. As there is an Ancient Woodland designation on the site, consultation with Natural England should be undertaken to assess the current status of the site.

As the broad-leaved parkland habitat is a Priority Habitat and designated as ancient woodland, the removal of any of this habitat would be of high impact. As it takes a very long time for ancient woodland to be formed (including the soil structure), retention of most of this habitat recommended and robust mitigation measures required for the removal of any of this habitat (see the OpenSpace Tree report (OpenSpace, 2018) for more detail on the trees).

The habitat would be acting as a corridor between the areas of woodland to the north and to the south and east. The removal of this habitat would mean the loss of connectivity for species using the site to commute between the woodland areas, with a potential moderate to high impact on species using this route. The proposed development should retain an area of parkland, and include native tree planting to continue to provide a corridor for commuting species.

A hedge survey has not been undertaken so the hedge has not been assessed in terms of the Hedgerow Regulations. The hedge has over 80% native species and would therefore be categorised under S41 Priority Habitat for Hedgerows and would be a habitat of at least moderate conservation interest.

A hedgerow survey should be undertaken to assess the hedge in terms of the Hedgerow Regulations. If any part of the hedge is proposed for removal then the impact would be at

least moderate impact. There may be a risk of indirect impact (root system compaction) on hedges on site due to the proposed works.

See Appendix Four for the Phase One Habitat Map and Appendix One for photos.

4.5 European Protected Species / Species of Conservation Concern

Bats

There are three records for bats, including two records of roosts, within 2km. There are no buildings on site. None of the trees within the parkland had any features with potential for roosting bats.

The habitat within and surrounding the site offers suitable conditions for foraging and commuting bats. The woodland adjacent to the site and hedgerows along the site boundary provide some suitable corridors for commuting bats.

During any proposed development, there may be low risk of disturbance to the local bat population using the site to forage and commute.

Increased lighting across the site may have negative impact on local populations (foraging and commuting bats). Mitigation measures will reduce any risk of impact.

The proposal may provide opportunity to improve the site for local populations of bats. See Recommendations in Section 5.3 and 5.4.

Badger

There is one record for badger about 900m away from the site. There were no badger setts or other signs of badger observed within the proposed field survey area. There were no signs of badger setts within the land immediately adjacent to the site (30m radius).

The parkland provides suitable habitat for foraging badger and the surroundings provide good connectivity for this species.

The proposed development will not impact on local badger setts or populations. However, as there are records for badgers in the area, appropriate avoidance measures should be adhered to reduce any low risk of impact on individual animals (See Recommendations in Section 5.3).

Breeding Birds

The parkland within the field survey area provide suitable provisions for local populations of breeding birds and there was an old bird's nest recorded in one of the trees in the parkland. There are numerous records for bird species within 2km.

There was no provision for barn owl *Tyto alba* to breed / roost within the field survey area. The parkland on site provides negligible potential for barn owl to hunt as it is grazed short, with negligible potential for prey species to be present.

There may be risk of impact on breeding birds should vegetation clearance (trees, hedge and ruderal vegetation) be undertaken during the bird-breeding season (March-August). See Recommendations in Section 5.2.

Red Squirrel

Red squirrel are known in the area and there are 109 records for this species within 2km radius from site, with the closest about 100m away. The trees in the parkland are widely spaced out and are largely unsuitable for red squirrel due to the isolation and smaller size. The site may be used by commuting red squirrel as the site provides a corridor between areas of woodland.

The proposed development is unlikely to directly impact on red squirrel populations; however there may be some loss of connectivity and disturbance to commuting red squirrel. See Section 5 for general awareness recommendations.

Reptiles

There are three records for common lizard and seven records for adder within 2km. The proposed development site has a good diversity of habitat suitable for reptiles. There is some limited connectivity to other reptile habitat in the adjacent land. There is therefore a possibility reptiles are on site. The site also has some hibernacula potential in the form of brash and stone piles (TN 2-4).

The habitat on and surrounding the site is suitable for common lizard and slow-worm and there may be risk of impact to local populations and / or harm to individual animals, if present on site. It is recommended further survey work is undertaken to assess the status of the site in terms of reptiles (see Recommendations in Section 5.2).

Other European Protected Species / Species of Conservation Concern

The parkland and hedge provide suitable conditions for commuting and foraging hedgehogs. The hedge and woodland adjacent to the site provide some habitat for breeding/nesting/hibernating hedgehog. The parkland, hedge and grassland on site and woodland adjacent to the site provides limited suitable habitat for brown hare and polecat.

The proposed development works is unlikely to impact on local hedgehog, brown hare, or polecat populations. There is low risk of disturbance / injury to individual animals during general construction / vegetation clearance works. Adopting good practice and avoidance measures (Section 5.3) would reduce ant risk of impact.

The following protected species are expected not to be significantly impacted by the proposed development due to the site not providing suitable habitat and/or no connectivity and/or no records within 2km of the site:

- great crested newt (and other amphibians) (no potential breeding ponds within 400m – there are two areas of standing water within 500m but there are residential dwellings and an agricultural field between the site and the standing water and it is unlikely that great crested newt would commute to the site, with negligible potential for great crested newt to be present on site).
- otter (no freshwater habitats on or adjacent to the site).
- pine martin (not known in the area and limited connectivity).
- dormouse (limited suitable habitat on site and not known in the area).
- water vole (no freshwater habitats on or adjacent to the site).
- natterjack toad newt (no suitable breeding habitat, not near the coast and no potential breeding ponds within 500m).
- aquatic species such as freshwater fish, pearl mussel and white-clawed crayfish (no freshwater habitats on or adjacent to the site).

The risk of any of the above species being present within the proposed development site is considered negligible and no mitigation measures are required.

Invertebrates

The loss of the parkland and scrub vegetation across the site may impact on important invertebrate populations, if present. The proposed landscape design could provide

opportunity to enhance the site for the important invertebrate populations and mitigate for any habitat loss.

5 MITIGATION AND RECOMMENDATIONS

5.1 Habitats

The site is part of a Natural England designation of "Ancient Woodland". Before any work on site is undertaken, Natural England should be consulted to determine the current status of the designation and likelihood of the site being subject to a development.

If any of the parkland is proposed for removal then robust mitigation should be put in place to replace any habitat lost. For mitigation and recommendation on the trees, see the OpenSpace Tree report (OpenSpace, 2018). This should include retaining and planting up a strip of woodland to retain a corridor between the blocks of woodland.

If any of the hedge is proposed for removal then it is recommended that a hedgerow survey is undertaken to assess if the hedge is an "Important hedge" under the Hedgerow Regulations".

No building footprint or large construction machinery should enter within 3m of the retained hedges. If during the project construction machinery must incur in to the 3m zone, this report recommends large wooden boards are placed around the area to reduce compaction. If necessary appropriate fence protection should be installed before construction to restrict access to the root systems.

There is an opportunity to enhance the site biodiversity by using UK native species from reputable sources within the proposed landscape plan.

5.2 European Protected Species / Species of Conservation Concern

Breeding Birds – Timings & Methodology

It is recommended that tree, hedge, and vegetation clearance be undertaken outside the bird-breeding season. Should clearance works commence within the bird-breeding season (March to August inclusive) then these works should only be conducted either under the supervision of a suitably qualified ecologist or Ecological Clerk of Works (watching brief)

Any feature containing a nest must not be destroyed or disturbed until the young have fledged.

Reptiles – Further Survey

The site provides potential basking, foraging, refugia and hibernacula features for common lizard and slow-worm. Statutory guidelines (Natural England, 2011) state a dedicated reptile survey should be conducted if the development site provides suitable habitat for reptile species.

Since the site is small, we recommend undertaking a reptile walkover survey to provide baseline information of the potential presence of reptiles. This will need to be undertaken within the reptile active season, and we suggest is conducted in May. The survey will also undertake a refugia survey of natural features on site.

Following on from this there may be a requirement for additional surveys.

5.3 Good Practice & Harm Avoidance

Bats

External lighting within the developed site should be minimal and an appropriate lighting design should be considered:

- Use of energy efficient and modern security lighting - narrow spectrum lights, low pressure sodium or warm white LEDs.
- The design of the luminaire to incorporate the use of hoods, cowls, louvers and shields to direct the light to the intended area only.
- Reducing the ecological impact of the light by directing the light at a low level, preferably an angle less than 70 degrees.

If provisions are to be provided for bats, then any new internal roof lining should be of a felt or bituminous nature. Polypropylene fibres found within some modern breathable roofing membranes have been found to entrap, entangle and cause death in bats. BRM's can create humidity and damp problems within new roofs and traditional roofing felt / ventilation are recommended.

General

Adherence to the following awareness measures will ensure that any low risk of disturbance to individual amphibian, otter, brown hare, hedgehog and other individual animals will be reduced:

- Before clearance works commence any areas covered by dense vegetation should be disturbed by hand (or by the contractor walking over and disturbing the ground cover) to alert any animal.
- Tree / hedge removal should retain the stumps and vegetation at ground level – these areas should be cleared with care - following a fingertip search at least three days after the main body of the hedge has been removed.
- Equipment, tools or plant associated with the development should be secured, stored away for the overnight period.
- Any open pipes at the end of each working day should be capped off (or stopped) to prevent access to hedgehog and other small mammals.
- All open excavations left overnight should allow any animal a means of escape if they enter the excavation. This can be achieved by placing a wooden board or plank no less than 0.5m wide and at an angle of no more than 45° or have a similar soil slope in the excavation.
- Open excavations should be checked daily before commencing works.
- All construction materials are to be stacked safely to prevent accidental collapse.
- To prevent the encouragement of pests and scavengers no food wastes are to be deposited on site.
- Works should, where possible, reduce working around sunrise and sunset.
- During works, any lighting on site should be minimal and directed away from the surrounding trees / hedgerows.

5.4 Enhancement Opportunities

There is an opportunity to increase the biodiversity of the site. The proposed landscape plan to accompany a full planning application should be produced in accordance with the National Planning Policy Framework (NPPF) in order to '*minimise impacts on biodiversity and provide net gains in biodiversity where possible...'* and Local Planning Authority should take into account the policies contained in the Framework when making decision. The proposed landscape features need to be created in a way that they are suitable for and will be used by wildlife. The proposed landscape plan should also use UK native species from reputable sources.

The following enhancement measures are suggested:

- Bird boxes should be included within the scheme. House sparrow, swallow and swift nest boxes can be attached / incorporated into the buildings' design.
- Bird feeders and open water areas will benefit birds.
- Bat boxes could be incorporated into the buildings' design.
- Provision of wildlife areas, buffer strips and corridors within the design, including features such as log piles and habitat houses for hedgehogs / bees / invertebrates.
- Planting beds using species of benefit to wildlife, such as nectar-rich plants (not double-flowered varieties).
- Use of native tree and shrub species in the planting scheme. This can include creating new species-rich hedgerows.
- Native bulb planting using woodland species around planted trees and shrubs.
- Compost provision / grass heaps could be provided; either communally or within the grounds of each new dwelling.
- Make a hole / gap measuring approx. 25cm in all fences to allow hedgehogs to commute and forage through the gardens and the new development.
- Creation of a wildflower meadow/area. Native hay meadow plants could be used for any buffer strips.

Note: The above are suggestions and should not be considered as mitigation measures i.e. they are not required to offset impact but would provide some enhancement.

6 SUMMARY

A Preliminary Ecological Appraisal was undertaken in relation to an outline planning proposed residential development on land to the west of Gilgarran.

The parkland and hedge would be categorised as Priority Habitats under S41 and are habitats of at least moderate conservation interest. As the site is designated as "ancient woodland", the site would therefore be classed as of high conservation interest and the removal of any of this habitat would be of high impact. Consultation with Natural England should be undertaken to assess the current status of the site.

There are habitats on site are suitable for use by local populations of bats, breeding birds, red squirrel and other protected species. Recommendations on further survey work

required, timing, methods, good practice / harm avoidance and habitat enhancement have been provided in this report.

All European protected species and species of conservation concern should be considered at all times during construction, and if individual animals are suspected or appear within the construction phase, works must stop and further guidance to protect from harm and disturbance should be sought by contacting an approved ecologist.

Any approval for the scheme must consider off-setting the loss of habitat. The proposed landscape plan should incorporate UK native tree and plant species from reputable sources. There may be a requirement to undertake off-site mitigation to compensate for the loss of habitat.

There is an opportunity to increase the biodiversity of the site. The proposed landscape plan to accompany a planning application should be produced in accordance with the National Planning Policy Framework (NPPF) in order to 'minimise impacts on biodiversity and provide net gains in biodiversity where possible...' and Local Planning Authority should take into account the policies contained in the Framework when making decision. The proposed landscape features need to be created in a way that they are suitable for and will be used by wildlife. The proposed landscape plan should also use UK native species from reputable sources.

This report must be made available to all contractors.

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8 APPENDIX ONE: Photos

Photo 1. Broad-leaved parkland

Photo 2. Semi-natural broad-leaved woodland adjacent to the site

Photo 3. Brash pile - hibernacula potential

Photo 4. Hedge along road

9 APPENDIX TWO: Legislation and Species Status

Species	Latin Name	EC Habitats Directive	Wildlife and Countryside Act	Protection of Badgers Act	Section 41, NERC Act	Cumbria BAP
Bat species (All species)		Annex IV (some Annex II)	Schedule 5		X	X
Bullhead	*Cottus gobio*	Annex II				
Dormouse	*Muscardinus avellanarius*	Annex IV	Schedule 5 and 6		X	X
Great crested newt	*Triturus cristatus*	Annex II and IV	Schedule 5		X	X
Lamprey species	*Lampetra/Petromyzon*	Annex II			X	X
Natterjack toad	*Epidalea calamita*	Annex IV	Schedule 5		X	X
Otter	*Lutra lutra*	Annex II and IV	Schedule 5 and 6		X	X
Reptile species		(some Annex IV)	Schedule 5		X	X
Salmon	*Salmo salar*	Annex II			X	X
White-clawed crayfish	*Austropotamobius pallipes*	Annex II	Schedule 5		X	X
Barn owl	*Tyto alba*		Schedule 1			X
Pine marten	*Martes martes*		Schedule 5 and 6		X	
Polecat	*Mustela putorius*		Schedule 6		X	
Red squirrel	*Sciurus vulgaris*		Schedule 5 and 6		X	X
Water vole	*Arivicola amphibious*		Schedule 5		X	X
Badger	*Meles meles*			X		
Brown hare	*Lepus europaeus*				X	X
Common toad	*Bufo bufo*				X	X
Hedgehog	*Erinaceus europaeus*				X	X

10 APPENDIX THREE: Phase 1 Habitat Map