Nestlé Waters, Buxton

Ecological Appraisal

December 2017

Control sheet

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Contents

Executive Summary 1

1. Introduction 2

2. Methodology 3

3. Results 5

4. Evaluation and Assessment of Potential Impacts 12

5. Conclusions and Recommendations 16

References 21

Appendix A – Legal Information 22

Appendix B – Bat Roost Potential and Habitat Suitability Categories 24

Appendix C – Target notes 25

Appendix D – Phase 1 Habitat Plan 27

Appendix E – Information Sheet for Contractors on GCN 28

Appendix F – Information Sheet for Contractors on reptiles 30

Appendix G – Suitable Native Species for Use in Planting Schemes 32

Appendix H – Proposed Scheme Design and Landscaping Plan 34

Appendix I – Ecological Opportunities Plan 35

Executive Summary

An extended Phase 1 Habitat survey was completed in June and November 2017 to inform a planning application to extend the current car parking facilities and the existing building at the Nestlé Waters bottling plant off Waterswallows Lane, Buxton (NGR: SK 07823 75534). Key ecological features, potential impacts and outline mitigation measures are summarised in Table 1 below.

Table 1: Summary of key ecological features and outline mitigation measures

Ecological Feature	Potential Impact	Further surveys if affected	Outline Mitigation
Semi-improved grassland	Loss of habitat	N/A	Additional wildflower planting areas within Ecological Enhancement Area.
Foraging/commuting bats	Loss of habitat	N/A	Retain or replace lost habitat within Ecological Enhancement Area. Sensitive lighting scheme within new development.
Birds	Direct impacts Loss of habitat	N/A	Carry out work outside of nesting season (March – August inclusive) or pre-clearance nesting bird check by an ecologist required. Replacement of lost habitats within Ecological Enhancement Area to also include the creation of a scrape.
Other mammals	Direct impacts Loss of habitat	N/A	Make contractors aware of possible presence of small mammals. Remove debris and cover excavations.
Herptiles	Direct impacts Loss of habitat	N/A	Make contractors aware of the potential for amphibians and reptiles on site. Implementation of Reasonable Avoidance Measures (RAMs) to avoid direct impacts to GCN and other species. Pond and hibernacula creation to provide additional aquatic and terrestrial habitat
Invertebrates	Direct impacts Loss of habitat	N/A	Wildlife planting within Ecological Enhancement Area. Pond improvement works, wildlife scrapes and the creation of bee hotels and wildlife mounds.

1. Introduction

1.1 Bowland Ecology Ltd was commissioned by Nestlé Waters to complete an ecological appraisal of land off Waterswallows Lane, Buxton, SK17 7JD (NGR: SK 07823 75534). The site is subject to proposals to extend the current car parking facilities and the existing building.

1.2 The Site currently comprises, species poor, semi-improved grassland, bare ground, buildings, amenity grassland, scattered trees, species rich, semi-improved grassland, scrub, tall ruderal vegetation and introduced shrubs. The surrounding habitats are rural and dominated by grazed pasture, stone walls and scattered trees located on field boundaries.

1.3 The purpose of the survey was to: 1) identify and map all habitats occurring within the survey area, 2) identify the presence of (or potential for) wildlife interests with particular reference to the need for further surveys and legal requirements, and 3) provide an ecological assessment, identify potential impacts and provide recommendations pertaining to the proposal.

1.4 This report includes a description of survey methods, a summary description of habitats and fauna and outlines recommendations to provide protection and enhancements for biodiversity and protected species.

1.5 The Ecological Survey: Land at Waterswallows (December, 2016) report compiled by Trevor Taylor of the Derbyshire Wildlife Trust was also reviewed for the purposes of this report.

1.6 As part of the survey undertaken by Trevor Taylor a specific survey of the Sustainable Urban Drainage System (SUDS) pond (P2, described in Paragraph 3.21) was undertaken using The Predictive System for Multimetrics (PSYM) survey method which was developed by Pond Action (now the Freshwater Habitats Trust) and the Environment Agency to provide a standard method for assessing the biological qualities of still waters in England and Wales.

1.7 The PSYM methodology uses a number of aquatic plant and invertebrate measures (known as metrics) which are combined together and fed into a computer model, along with basic environmental and location data, to obtain a single value which represents the waterbody's overall ecological quality status.

2. Methodology

2.1 The desk study, extended Phase 1 habitat survey and ecological appraisal followed the Guidelines for Preliminary Ecological Appraisal (GPEA) (CIEEM, 2013) and are in line with the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development'.

Desk Study

2.2 The aim of the desk study was to identify the presence of statutory and non-statutory wildlife sites within the area and any legally protected species or Habitats and Species of Principal Importance (HPI/SPI) for the conservation of biodiversity (Section 41 NERC Act, 2006).

2.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only) on or within 1 km of the Site boundary.

2.4 Local records on and within 1 km of the Site were obtained following a data search with Derbyshire Wildlife Trust (DWT)[1].

2.5 Ordnance Survey (OS) maps and aerial photographs (http://maps.google.co.uk/maps) were reviewed to help identify any continuous habitat and any other notable habitats within the surrounding area.

2.6 Natural England's great crested newt (*Triturus cristatus*) licensing method statement template (Form WML-A14-2 (version December 2015[2]) advises that, for developments resulting in permanent or temporary habitat loss at distances over 0.25 km from the nearest pond, careful consideration should be given to whether a survey is appropriate. Although the species may use suitable terrestrial habitat up to 0.5 km from a breeding pond, in this instance a 0.25 km search radius was considered appropriate due to the relatively small scale of the project.

Field survey

2.7 The extended Phase 1 habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2013). All features of ecological significance were target noted.

2.8 This survey methodology records information on the habitats together with any evidence of and potential for legally protected and notable fauna, in particular:

- Potential roosting sites for bats within buildings and trees (identification of suitable cracks and crevices – survey undertaken externally and from ground only). An assessment of suitability was undertaken according to the Bat Conservation Trust' Good Practice Guidelines 3rd Edition (Collins, 2016) (Appendix B);

[1] Only records from 2000 onwards are included within the report
[2] https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence

- Assessing the suitability of habitats for other notable and protected species such as nesting birds (including any active or disused nests), reptiles, water vole (*Arvicola terrestris*), otter (*Lutra lutra*), white-clawed crayfish (*Austropotamobius pallipes*), badger (*Meles meles*) and invertebrates;
- Checking for the most common invasive plant species subject to strict legal control including; Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), hybrid knotweed (*F. x bohemica*), giant hogweed (*Heracleum mantegazzianum*), rhododendron (*R. ponticum, R. ponticum x R. maximum* and *R. luteum*) and Indian balsam (*Impatiens glandulifera*);
- Assessing the suitability of the habitat for amphibians and for the protected great crested newt (GCN). Ponds on site and within 0.25 km (access permitting) were subject to a Habitat Suitability Index (HSI) (Oldham *et al*. 2000) assessment for GCN[3].

2.9 The survey was carried out by Claire Wilson MSc, BSc (Hons), MCIEEM on the 29th June and the 15th November 2017. The weather was cold and damp with light drizzle and a light breeze (Beaufort Scale 1) on both occasions. The temperature was approximately 11ºC on the 29th June and 6ºC on the 15th November.

Limitations

2.10 Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore the survey of the study area has not produced a complete list of plants and animals.

2.11 The timing of the majority of the Phase 1 habitat survey was within the optimum period for completing such a survey. As a result, a valid assessment of the habitats present and their potential to support legally protected species was undertaken. A small area of survey was undertaken outside of the optimal period, however, the entire area was accessible, as such a full assessment of the habitats on Site was possible.

2.12 The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The extended Phase 1 habitat survey checked, in particular, for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, rhododendron and Indian balsam. There may be other invasive plant species present on the site which were not recorded, but it is considered that this survey is sufficient to identify any significant constraints posed by invasive plants.

[3] An HSI is a numerical index, between 0 and 1. Values close to 0 indicate unsuitable habitat, 1 represents optimal habitat. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors known to affect this species. The HSI for great crested newts is a measure of habitat suitability - it is not a substitute for amphibian surveys.

3. Results

Designated Sites and Habitats of Principal Importance

3.1 The Site is located within an Impact Risk Zone for Waterswallows Quarry Site of Special Scientific Interest (SSSI), The Wye Valley SSSI and The Peak District Dales Special Area of Conservation (SAC). The footprint of the proposed development is likely to exceed 1 hectare (ha). However, the site, and surrounding has already been subject to previous development. Therefore it is considered that the proposed works do not fall into any of the categories which require assessment and no further consideration towards the Impact Risk Zone is required.

3.2 A single statutory designated site, Waterswallows Quarry Site of Special Scientific Interest (SSSI) is located within 1 km of the Site. The site is designated for its geological interest. As such, it is not considered further within this report.

3.3 There is a single non-statutory Local Wildlife Site (LWS) within 1 km of the site; Longridge Lane Pond LWS located approximately 0.65 km east of the site.

3.4 The search of the Multi Agency Geographical Information Centre (www.magic.gov.uk) identified several areas of deciduous woodland HPI within 1 km of the site. The closest of which is located approximately 0.79 km to the south west of the Site.

3.5 Based on a review of aerial photographs and OS maps there are three ponds within 0.25 km of the Site.

Habitats

3.6 Target notes summarising key interest features for wildlife recorded during the extended Phase 1 habitat survey are included in Appendix C. The Phase 1 habitat plan of the site presented in Appendix D includes the locations of the target notes. Plant species nomenclature follows Stace (2010).

Amenity grassland

3.7 Short, well managed amenity grassland is located at the entrance to the Building (B1). Species present within the sward include daisy (*Bellis perennis*), white clover (*Trifolium repens*), dandelion (*Taraxacum* agg.), creeping buttercup (*Ranunculus repens*), perennial rye grass (*Lolium perenne*) and Yorkshire fog (*Holcus lanatus*).

3.8 A narrow strip of short, well managed amenity grassland is located on the boundary of the factory adjacent to the security fencing. Species present are described in Paragraph 3.7 above.

3.9 A large area of amenity grassland is located at the western section of the survey area at the front of the building, directly adjacent to Waterswallows Lane. The sward is short, freely draining and well managed. Species present include meadow grass (*Poa* sp.), fescue (*Festuca* sp.), Yorkshire fog, creeping buttercup and white clover.

Species poor semi-improved grassland

3.10 The majority of the survey area comprises four large, sheep and cattle grazed fields, with short swards that were difficult to fully appraise. The fields were found to be relatively level, however, along the margins and in areas heavily poached by livestock the ground was found to be uneven and waterlogged. Species present in the sward comprise perennial rye grass, creeping buttercup, dandelion, broadleaved dock (*Rumex obtusifolius*), white clover, meadow buttercup (*Ranunculus acris*), Yorkshire fog and ribwort plantain (*Plantago lanceolata*).

3.11 A small area of species poor, semi-improved grassland located to the north of the Site (just outside the Nestlé factory boundary) has not been subject to regular mowing/grazing, as such, the sward is taller (approximately 30 cm) and more diverse. Additional species include soft rush (*Juncus effusus*), Timothy (*Phleum pratense*), glaucous sedge (*Carex flacca*), creeping thistle (*Cirsium arvense*) and tufted hair grass (*Deschampsia cespitosa*).

Tall ruderal

3.12 An area dominated by creeping thistle is located to the north of the Site. Other species present include colt's-foot (*Tussilago farfara*), broadleaved dock, tufted hair grass and false oat grass (*Arrhenatherum elatius*). The area is fenced with post and rail fencing.

3.13 Tall ruderal vegetation is also present along the eastern edge of the factory at TN5. The area is approximately 9.5 m in width and fenced to prevent livestock from the adjacent field entering the area. The area is dominated by broad leaved dock, with occasional great willowherb (*Epilobium hirsutum*), colt's-foot, tufted hair grass and creeping thistle. Where the tall ruderal vegetation is less dominant some scattered herbs including yarrow (*Achillea millefolium*) and creeping buttercup are present.

Species rich, semi-improved grassland

3.14 Species rich, semi-improved grassland which was created as part of the mitigation strategy for the development of the original Nestlé Waters bottling plant is located at TN1. Grasses present within the sward include Yorkshire fog, tufted hair grass, perennial rye grass, Timothy and crested dog's tail (*Cynosurus cristatus*). Herbs include red clover (*Trifolium pratense*), white clover, yellow rattle (*Rhinanthus minor*), devil's bit scabious (*Succisa pratensis*), ribwort plantain, common knapweed (*Centaurea nigra*), oxeye daisy (*Leucanthemum vulgare*), selfheal (*Prunella vulgaris*), yarrow, wild carrot (*Daucus carota*), meadow crane's-bill (*Geranium pratense*), meadow buttercup, creeping buttercup, marsh thistle (*Cirsium palustre*) and broadleaved dock.

3.15 A mound of vegetated earth is also present within this area, species on the mound were found to be dominated by broadleaved dock and creeping thistle. Species noted in paragraph 3.14 were also present on the mound, however, they are only occasionally occurring in the area.

3.16 At TN4 is a small area of species rich semi-improved grassland to the south of the factory. Species present comprise bird's-foot trefoil (*Lotus corniculatus*), lady's bedstraw (*Galium verum*), common knapweed, red fescue (*Festuca rubra*), ribwort plantain, tufted hair grass, Yorkshire fog, cock's-foot, yarrow, bush vetch (*Vicia sepium*), creeping buttercup and colt's-foot.

Scattered scrub

3.17 Scattered scrub over bare earth is located close to the entrance of the Nestlé factory to the west of the survey area. Species present include elder (*Sambucus nigra*) and dogwood (*Cornus sanguinea*).

Scattered trees

3.18 Scattered young sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*) and English oak (*Quercus* robur) are located just outside of the Nestlé factory boundary to the north, south and east (TN2).

Introduced shrubs

3.19 Small stands of cotoneaster (*Cotoneaster* sp.) and hydrangea (*Hydrangea* sp.) are present over bare earth located close to the entrance of the Site at TN3.

Ponds

3.20 There are no ponds on Site and three within 0.25 km. Pond 1 (P1) is located approximately 0.125 south east of the Site boundary (Figure 1). The pond is a very shallow, infield depression that has been heavily poached by livestock with no open water and is choked with vegetation. As such it is considered to be an ephemeral feature. Evidence of pollution from hydrocarbons was present at the time of survey. It is also known that the pond dries annually (Pers. comm - Trevor Taylor, Derbyshire Wildlife Trust).

Figure 1: Pond 1

3.21 Pond 2 (P2) is a large Sustainable Urban Drainage System (SUDS) pond that was designed as part of the original landscaping proposals for the Nestlé factory and created in 2012 (Figure 2). The pond is 65 m x 25 m and was found to be very turbid at the time of survey. No aquatic vegetation is present, there is however, a layer of algae present throughout the pond. The substrate comprises large stones and the banks are gently sloping and covered with scattered scrub, tall ruderal vegetation and rank grassland. The pond is located approximately 0.13 km south west of the Site boundary.

Figure 2: Pond 2

3.22 Pond 3 (P3) is a large pond (approximately 45 m x 8 m) also likely to be a SUDS pond and is located approximately 0.185 km south of the Site (Figure 3), adjacent to Waterswallows Road, in the grounds of Lomas Distribution Centre. The pond is surrounded by security fencing so close inspection was not possible, however, from the boundary dense bulrush (*Typha latifolia*) was noted at the eastern and western edges of the pond, with an area of open water in the centre. The banks are covered with scrub and tall ruderal vegetation. Aerial photographs indicate that the pond was not present in 2005. As such, it is considered likely that the pond forms part of the drainage system for the area that has been subject to development between 2005 and the present date.

Figure 3: Pond 3

Boundary features

3.23 Dry stone walls in good condition are located between the species poor, semi-improved grasslands located throughout the Site.

3.24 Stock proof post and rail fencing is also located along the field boundaries within the survey area.

Bare ground

3.25 The car park, pathways and roads leading into the Nestlé factory comprise tarmac and stone.

Buildings

3.26 The Nestlé Waters building (B1) is a large, metal sheeted building with a flat roof. Stone gabion walls are present at the northern and eastern side of the building.

Species

Plants (incl. invasive species)

3.27 A few small stands of cotoneaster are present on site. Their locations are shown on the Phase 1 habitat plan in Appendix D. Certain species of cotoneaster are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Identifying cotoneaster to species level is difficult, therefore as a precaution, it is advised that the species on Site is treated as being listed on Schedule 9.

Bats

3.28 The introduced shrubs, scrub and scattered trees within the survey area are considered to provide very low value foraging and commuting opportunities for small numbers of bats due to their isolated and gappy nature. The data search returned no records for bats within the search area.

3.29 The trees on site are all young and lack features that could be used by roosting bats such as cavities, woodpecker holes and limb cracks. The building is well sealed and no features suitable for roosting bats were noted during the survey. The gaps in the stone gabion walls are considered to be too large and exposed to offer suitable bat roosting habitat. Furthermore, the site is well lit and subject to high levels of disturbance from vehicle movements transporting goods in and out of the site. As such, the trees and building are considered to have **negligible** potential to support roosting bats (Appendix B).

Badgers

3.30 No evidence of the presence of badgers was recorded during the survey. The species poor, semi-improved grassland adjacent to Site provides potential foraging habitat. However, suitable habitat for sett excavation is not present within or adjacent to the survey area as the habitats are open and likely subject to regular disturbance from farming activities.

3.31 The data search returned three records for badger within the 1 km search area. None of these records are within 0.5 km of the Site. As such, badgers are not considered further within this report.

Other mammals

3.32 The scrub, introduced shrubs and tall ruderal vegetation provide opportunities for small mammals such as hedgehog (*Erinaceus europaeus*) a SPI. The species poor, semi-improved grasslands within the survey area provide foraging habitat for brown hare (*Lepus europaeus*), also a SPI. The data search returned no records for hedgehog and a single record for brown hare in the search area.

Birds

3.33 The drystone walls, scrub, scattered trees and introduced shrubs within the survey area provide habitat for foraging and nesting birds. The data search did not return any records for notable or protected bird species.

3.34 The species poor, semi-improved grasslands provide suitable habitat for ground nesting birds.

3.35 The report by Trevor Taylor described that Derbyshire Ornithological Society hold no bird records for the area surrounding the Site.

Herptiles

3.36 The habitats on Site are potentially suitable for reptiles and amphibians. For example, rank grassland, tall ruderal vegetation and crevices in drystone walls provide refuge habitat. The tops of drystone walls and amenity areas provide sites for basking. The desk study returned no records for reptiles within the search area. However, the Site is located in an open, upland area, therefore it is considered that reptiles including common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*) may be potentially be present in the aforementioned habitats.

3.37 There are three ponds located within 0.25 km of the Site. Descriptions of each pond are located in Paragraphs 3.20 – 3.22. The HSI calculations for the ponds are shown in Table 2 below. Ponds 2 and 3 provide 'good' aquatic habitat for GCN. Pond 1 provides 'poor' habitat suitability for GCN.

Table 2: Pond HSI calculations

Pond No.	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds	SI9 - Terr'l habitat	SI10 - Macrophytes	HSI	Suitability
1	1	0.05	0.1	0.01	1	1	1	0.95	0.33	0.3	0.29	Poor
2	1	0.85	0.9	0.33	1	0.67	1	0.95	0.67	0.3	0.71	Good
3	1	0.6	0.9	0.67	1	0.67	0.67	0.95	0.67	0.7	0.77	Good
*****Pond suitability: <0.5 'poor', 0.5 – 0.59 'below average', 0.6 – 0.69 'average', 0.7 – 0.79 'good', >0.8 'excellent'												

3.38 The tall ruderal vegetation, rank grassland and drystone walls on Site provide suitable terrestrial habitat for GCN and other common amphibians including common toad (a SPI).

3.39 The desk study returned two records for GCN within the search area from 2011. The records are located approximately 0.325 km south east of the Site within the grounds of Waterswallows Quarry.

3.40 The report compiled by Trevor Taylor (Ecological Survey: Land at Waterswallows, December, 2016) confirmed that a single amphibian presence/absence survey was undertaken on Pond 2 on the 5th/6th May 2016. During this survey the following techniques were employed; egg searching, netting and bottle trapping. A torchlight survey was not undertaken due to health and safety reasons. The survey did not record the presence of GCN or any other common amphibians and the report concluded that the pond is in "*very poor ecological condition*". Whilst the amphibian survey undertaken did not represent a full suite of surveys it is considered that the survey is sufficient in confirming that the pond is currently unsuitable for GCN due to the absence of aquatic vegetation and poor water quality, confirmed during the PSYM survey. Pond 2 returned a 'good' HSI score for GCN this is likely due to the optimal size of the pond, absence of shoreline shade and fish, number of additional ponds within 1 km and the presence of good quality terrestrial habitat

surrounding the pond. However, due to the absence of aquatic vegetation, highly turbid nature of the pond and very poor water quality it is considered unlikely that the feature would be used as breeding habitat by GCN.

3.41 Pond 3 also returned a 'good' HSI score for GCN. It is likely that this pond provides more favourable habitat for the species due to the presence of aquatic vegetation and the water quality, which appeared better. Furthermore, this pond is located 0.18 km north west of one of the GCN records, therefore there is potential for the species to be present within the pond.

Invertebrates

3.42 The tall ruderal vegetation and species rich semi-improved grassland provide habitat for a variety of invertebrates. During the survey undertaken by Trevor Taylor in 2016 the following species were recorded on Site; small heath (*Coenonympha pamphilus*), a SPI, white-tailed bumblebee (*Bombus lucorum*), buff-tailed bumblebee (*Bombus terrestris*), red-tailed bumblebee (*Bombus lapidarius*), common carder bee (*Bombus pascuorum*) and common darter dragonfly (*Sympetrum striolatum*). Blue-tailed damselfly (*Ischnura elegans*) and common blue damselflies (*Enallagma cyathigerum*) were observed around Pond 2. Green dock beetle (*Gastrophysa viridula*) was also noted in large numbers on the leaves of broadleaved dock.

4. Evaluation and Assessment of Potential Impacts

4.1 An assessment of effects on ecological features has been made using the available design and survey information and the professional judgement of the ecologist. This includes a consideration of the relevant legislation (see Legal Information below – Appendix A) and planning guidance. If there are changes to the proposals, such as a change to the proposed development design or to the construction method and programme, the assessment would need to be reviewed (see Appendix H for Proposed Development Plans).

4.2 Currently habitats that will be impacted by the proposed scheme include; amenity grassland, species rich and species poor grassland, drystone walls, tall ruderal vegetation, bare ground, buildings, scattered young trees, scrub and introduced shrubs.

Designated sites and Habitats of Principal Importance

4.3 Longridge Lane Pond LWS is located approximately 0.65 km east of the Site. It is considered that due to 1) the relatively small footprint of the works, 2) the distance of the LWS to the Site, and 3) the absence of connecting habitats between the Site and the LWS, that there will be no direct or indirect impacts on the aforementioned site from the proposed development. As such, it is not considered further within this report.

4.4 Deciduous woodland HPI is located approximately 0.79 km south-west of the Site. Due to points discussed in paragraph 4.3 above it is considered there will be no impacts to the HPI, therefore it is not considered further within this report.

Habitats

<u>Amenity/tall ruderal vegetation/bare ground/introduced shrubs/scrub/poor semi-improved grassland/stone walls</u>

4.5 Development of the site will result in the loss of a number of low value habitats including amenity grassland, bare ground, species poor semi-improved grassland, tall ruderal vegetation, introduced shrubs and scattered scrub. These habitats are locally common and of limited ecological value. However, whilst these features are not ecologically significant in botanical terms, they provide variety and structure in the landscape. As such, their loss would result in a small scale, negative ecological impact.

<u>Species rich, semi improved grassland</u>

4.6 The species rich, semi-improved grassland at TN1 is considered to be a notable feature of the Site as the sward was found to be diverse with a variety of herbs. Whilst this habitat does not fall into any of the definitions that would classify it as a Habitat of Principal Importance, it is likely that this habitat is sparse in what is considered to be an otherwise species poor landscape within the surrounding area. The development will result in the loss of approximately 0.227 ha of this grassland which would result in a small scale, negative ecological impact.

Scattered trees

4.7 The development will result in the loss of scattered young sycamore, ash, oak and beech trees. Sycamore and beech are not native in the north of England, however they provide structure in the landscape as trees are not a common feature in the surrounding area. Therefore their loss will result in a small scale, negative ecological impact.

Species

Invasive species

4.8 There is a stand of cotoneaster present on site. Its location is shown on the Phase 1 habitat plan in Appendix D. Certain species of cotoneaster are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Identifying cotoneaster to species level is difficult, therefore as a precaution, it is advised that the species is treated as being listed on Schedule 9. As such, works on Site have the potential to cause the spread of the plant in the wild which would result in an offence.

Bats

4.9 The scrub, introduced shrubs and scattered trees are considered to provide very low value foraging and commuting habitat for bats. The loss of these features is considered to represent a low/negligible impact to foraging and commuting bats that may be present in the area.

Other mammals

4.10 The removal of areas of scrub, tall ruderal vegetation and drystone walls during works risks impacting small mammals including hedgehog through direct harm and/or mortality.

Birds

4.11 Where tall ruderal vegetation, species poor, semi-improved grassland, scrub, introduced shrubs, scattered trees and drystone walls are required to be removed/affected as a result of the proposed works, impacts to tree, shrub and ground nesting birds could occur if works are undertaken within the nesting bird season (March to August inclusive) and/or without due care and attention, which would constitute an offence (see legal information Appendix A).

4.12 The removal of the aforementioned habitats will also result in the loss of suitable bird nesting and foraging habitat. Approximately 4.1 ha of species poor, semi-improved grassland which has the potential to be utilised by ground nesting birds will be removed to accommodate the development. However, the grassland adjacent to the Nestlé factory is subject to regular disturbance from people and vehicle movements on Site. Furthermore, this habitat type is a common feature within the landscape. As such, impacts to ground nesting birds from the removal of the habitat are considered to be low.

Herptiles

4.13 There is low/negligible potential to encounter small numbers of common amphibians, slow worm and/or common lizard in suitable habitats on Site. Therefore works in areas of scrub, rank grassland and drystone walls could result in the injury of killing of the aforementioned species which could result in an offence (see Appendix A).

4.14 Terrestrial habitats on Site including tall ruderal vegetation and species rich, semi-improved grassland are considered to provide suitable habitat for GCN due to their rank, overgrown nature. Approximately 0.134 ha of terrestrial habitat (tall ruderal vegetation), within 0.25 km of Pond 2 will be lost to accommodate the proposed development. Therefore site clearance works have the potential to directly impact GCN, which may result in an offence, if works are undertaken in the absence of mitigation. However, the likelihood of the species being present on Site is considered to be low due to 1) the poor suitability of Ponds 1 and 2 to provide aquatic habitat for GCN (Pers. comms – Trevor Taylor, Derbyshire Wildlife Trust), 2) the fact that Pond 1 holds very little water and dries annually, and 3) Pond 2 has poor water quality and no aquatic vegetation.

4.15 Pond 3 provides slightly more potential as breeding habitat for the species as aquatic vegetation is present and the pond is closer to the confirmed GCN records. This pond is located 0.185 km south of the Site, however, the habitats located directly between the Site and Pond 3 comprise hardstanding (Lomas Distribution Centre) that is used for lorry parking. If GCN were present within this pond their commuting route to suitable terrestrial habitat on Site would be via a narrow strip (approximately 10 m) of vegetation to the west of the pond. Thus increasing the commuting distance to 0.36 km (potential commuting route is shown on the Phase 1 Habitat Plan in Appendix D). Whilst this commuting route is potentially possible it is considered to be unlikely. Furthermore, the habitats surrounding Waterswallows Quarry and the confirmed GCN records are considered to be more favourable GCN terrestrial habitat.

4.16 To support the above, a study of GCN in western France highlighted that 50% of radio-tracked newts remained within 15 m of the pond shoreline and 95% remained within a radius of 63 m (Jehle, 2000). Therefore the potential for the species to move into ponds to the north is considered highly unlikely when there is ample aquatic and terrestrial habitat surrounding their current location at Waterswallows Quarry.

4.17 Natural England's guidance in the method statement template (*WML-A14-2 Version December 2015*) also recognises a 'risk-averse' culture surrounding mitigation and licence applications and recommends a shift towards a 'more proportionate approach to mitigation, addressing tangible impacts on populations whilst giving lower priority to negligible effects' and that such an approach is consistent with the aims of the Habitats Directive. Additionally, it is considered that the impacts from the installation of GCN fencing would pose a higher risk to the species than supervised site clearance works (Pers. comm. Libby Duggan-Jones). As such Natural England have developed a "Rapid Risk Assessment Calculator", which calculates the potential impacts to GCN and their associated terrestrial habitats and the likelihood of an offence occurring[4].

4.18 The rapid risk assessment result for the Site before the completion of Reasonable Avoidance Measures (RAMs) is "Amber: Offence Likely" (Table 3). With the implementation of RAMs the rapid risk assessment result is reduced to "Green: Offence Highly Unlikely" (Table 4). This result is based on the loss of approximately 0.134 hectares of land within 100 – 250 m of the site and 0.332 ha of land > 250 from a breeding pond. However, these calculations are based on the assumption that the land to be impacted is within proximity to a GCN

[4] Risks levels within the calculator will over or under estimate some risks because it cannot take into account site specific details (WML-A14-2 Version December 2015).

breeding pond. Surveys undertaken by Trevor Taylor (Derbyshire Wildlife Trust) in 2016 did not confirm the presence of the species within Pond 2.

4.19 Taking into account the above points it is considered that the potential impacts to GCN from development of the Site are low and therefore the likelihood of committing an offence is "Green: Offence Highly Unlikely".

Table 3: Rapid Risk Assessment Calculator Results Prior to Implementation of RAMs

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 pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	Minor disturbance of newts	0.5
	Maximum:	0.5
Rapid risk assessment result:	**AMBER: OFFENCE LIKELY**	

Table 4: Rapid Risk Assessment Calculator Results After Implementation of RAMs

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 pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
	Maximum:	0.1
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

4.20 A Natural England (formally English Nature) report by Creswell W. and Whitworth R. (2004) also states that that "*The most comprehensive mitigation, in relation to avoiding disturbance, killing or injury is appropriate within approximately 50 m of a breeding pond. It will also almost always be necessary actively to capture newts 50-100 m away. However, at distances greater than 100 m, there should be careful consideration as to whether attempts to capture newts are necessary or the most effective option to avoid incidental mortality... At distances greater than 200-250 m, capture operations will hardly ever be appropriate*."

Invertebrates

4.21 The loss of tall ruderal vegetation and species rich, semi-improved grassland will result in the loss of foraging habitat for a variety of invertebrates that may use the Site, including small heath, a SPI. However, there is abundant foraging habitat for invertebrates in the area surrounding Pond 2. As such, loss of the aforementioned habitats will result in a small scale, negative ecological impact.

5. Conclusions and Recommendations

5.1 This section provides the required measures to mitigate the impacts of the proposed development. A key element of the National Planning Policy Framework is to minimise impacts to biodiversity and provide enhancements. Paragraph 109 states that '*The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible'*. It also states in Paragraph 118 that '*when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by encouraging opportunities to incorporate biodiversity in and around developments'*. This section also includes suggested enhancement measures. The following recommendations are designed to comply with legal requirements and national and local planning policy. Ecological mitigation and enhancements can be viewed within the Ecological Opportunities Plan in Appendix I.

5.2 The Ecological Opportunities Plan details indicative locations for amphibian, reptile, invertebrate and bird mitigation (further described below) and the locations of wildflower and tree planting areas, comprising a total of 1.1 ha of land, located to the south east of the Site in an Ecological Enhancement Area. In addition to this, it is advised that a detailed Habitat Management Plan is completed prior to the commencement of works to ensure habitat mitigation works within the Ecological Enhancement Area are sustained to provide a net gain in biodiversity.

Habitats

Amenity/tall ruderal vegetation/bare ground/introduced shrubs/scrub/poor semi-improved grassland/stone walls

5.3 It is recommended that the aforementioned habitats are retained wherever possible. Where retention is not possible, soft landscaping, reflective of the habitats to be lost will be included within the design of the proposed development. Native trees and shrubs will be planted within the Ecological Enhancement Area in preference to ornamental species, which are generally of lower value to wildlife (see Appendix G).

Species rich, semi-improved grassland

5.4 Appropriate mitigation for the loss of species rich, semi-improved grassland will include the retention of the habitat where possible. If this cannot be achieved compensation will be in the form of wildflower planting using seed mixes of local provenance and the use of low fertility substrates within the Ecological Enhancement Area. In addition, the collecting of seeds from herbs within the existing sward can be sown into new planting areas to ensure the species are of local provenance. Topsoil can also be placed within the new wildflower area to ensure continuation of species diversity.

5.5 In addition to the measures described in Paragraph 5.4 above the tall ruderal vegetation on the southern boundary of the Nestlé factory will be managed so that any weeds e.g. docks, common ragwort and thistles are managed. This will enable herbs and grasses within the sward to flourish, thus increasing the abundance and diversity of more botanically interesting species.

Scattered trees

5.6 It is recommended that, where possible trees are retained as part of the development. Where this is not possible, suitable mitigation for their loss will be implemented within the Ecological Enhancement Area. Specifically, the replanting of new trees at a 2:1 ratio to those lost.

5.7 Species used for planting will be native, appropriate to the locality and will be sourced locally where possible. Planting will be undertaken at an appropriate time of year (usually in autumn when there is no ground frost) and specimens protected from grazing by rabbits and deer (see Appendix G for suitable species).

Species

Invasive species

5.8 It is likely that the cotoneaster will be impacted by the works. Therefore the species should be controlled appropriately prior to the commencement of works in order to avoid spreading the plant in the wild. It is advised that the plant is removed by digging out the roots to prevent regrowth.

Bats

5.9 The replacing of any scrub and trees to the site as recommended above (paragraph 5.6 - 5.7) will ensure the continuation of foraging and commuting opportunities for bats within the area.

5.10 Any new lighting schemes should be designed in accordance with the appropriate guidance (Stone, 2013) to minimise the impacts on foraging bats likely to be utilising the habitats. This document includes (but not limited to) measures such as;

- Use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps; and
- Lighting should be directed to where it is needed and light spillage avoided in particular along the site boundaries.

Other mammals

5.11 It is recommended that contractors are made aware of the potential presence of small mammals within tall ruderal vegetation, scrub and drystone walls. Removal of the aforementioned habitats should be undertaken with care to avoid disturbance to sheltering/hibernating mammals. Any debris from works should not be left on site and any holes or trial pits associated with works should be covered overnight or fitted with egress boards to prevent animals becoming trapped. Any small mammals found within the working area during construction should be carefully relocated to sheltered location with plenty of vegetation cover, in an area off site which will remain undisturbed.

Birds

5.12 It is recommended that nesting bird habitat on Site is retained where possible, particularly the scrub, drystone walls and scattered trees. Mitigation for the loss of breeding bird habitat will include the additional planting of native species of trees and shrubs as described in paragraph 5.6 and 5.7 above.

5.13 Vegetation clearance will be undertaken outside of the nesting period. Where this is not possible, any vegetation clearance that must be carried out within

the bird breeding season will be subject to a pre-clearance bird survey carried out by a suitably experienced ecologist. Prior to works in the species poor, semi-improved grassland a nesting bird check will be undertaken to ensure no ground nesting birds are present during site clearance works.

5.14 No works will be carried out within 5 m of an identified nest until the young have fledged and are no longer returning to the nest site. Works will only be undertaken once a scheme ecologist has declared the nest to be no longer in use.

5.15 The creation of a wildlife scrape within the Ecological Enhancement Area will benefit birds that may use the Site by creating habitat for aquatic invertebrates which will in turn create additional foraging habitat for ground nesting birds.

5.16 Features that will be incorporated into the wildlife scrape are as follows (Natural England, 2010).

- Shallow, gently sloping muddy edges;
- A feature that holds water between March to June inclusive;
- Shallow water levels (no greater than 0.5 m in the middle); and
- Several small scrapes as oppose to a single, large scrape.

Herptiles

5.17 Whilst it is considered that the impacts to GCN, common amphibians and reptiles is low, a small risk remains as the aforementioned species are all mobile species. As such, it is advised that works within the suitable habitat (tall ruderal vegetation, species rich, semi-improved grassland and drystone walls) on Site could lead to the disturbance, injury and/or mortality of amphibians and reptiles (including GCN), therefore works will be completed under Reasonable Avoidance Measures (RAMs), which are detailed below.

- Before construction works commence, all contractors must receive a 'tool-box' talk or site induction from a suitably qualified ecologist to make them aware of the potential for amphibians and reptiles, legislative context and procedure if amphibians are encountered during works (Appendix E & F);
- If clearance of tall ruderal vegetation, species rich, semi-improved grassland and drystone walls is undertaken during the active season for the aforementioned species, no more than two weeks prior to works commencing on site, all vegetation within any working areas, where required, should be cut or removed using hand held machinery (i.e. strimmer, brushcutter, chainsaw) to a height of no less than 150 mm;
- The working area must be left for a minimum of two days to allow any amphibians/reptiles that may be present to move out of the immediate area. A second cut using hand held machinery (i.e. strimmer or brushcutter) should be then carried out to a height of 50 mm;
- Any brash/log piles and drystone walls should be dismantled methodically and by hand and be taken out of the working area and used to create habitat piles in suitable locations within the Ecological Enhancement Area;

- Hand searches for amphibians and reptiles within the cleared areas must be completed by a suitably qualified ecologist after vegetation strimming is completed and immediately prior to the commencement of construction works;
- Any excavations should be backfilled, covered over, or a means of escape provided (e.g. plank) at the end of each day in order to prevent amphibians and reptiles becoming stranded within trenches;
- All works, stockpiling of materials or storage of machinery must be contained within sub-optimal habitat (bare ground or hard standing);
- In the event that any GCN are encountered during the works, all works must cease immediately and the scheme ecologist contacted for further advice. Any GCN should be moved by a suitably qualified ecologist to a suitable location outside the working area.

5.18 To improve the availability of aquatic habitat for GCN and other amphibians Pond 1 will be enhanced as part of the Ecological Enhancement proposals. This can be achieved by the widening and deepening of the current feature and fencing off to prevent poaching by livestock. Natural colonisation of aquatic vegetation within the pond is preferred, to ensure species of local provenance become established. However, should planting be deemed to be necessary, species appropriate to the locality will be used, using locally grown stock wherever possible. As detailed in Paragraph 5.2, a Habitat Management Plan will be developed to ensure the pond is created to ensure its long term viability as amphibian habitat.

5.19 The construction of artificial hibernacula and refugia, for use by GCN and other amphibians and reptiles should be located close to the pond. Any timber and arisings from site clearance can be used for the construction of these features. One 'mound hibernaculum' will be created. The hibernaculum will be constructed by piling up logs, dead wood and stone. This pile will be very loosely backfilled with topsoil. Having produced a suitable habitat pile the hibernaculum will be covered with topsoil and turf (where available). A gap completely surrounding the base of the mound and approximately 15 - 30 cm high will be left open and uncovered. This will allow amphibians and reptiles to enter and leave the structure at will. The structure will be approximately 1.5 m high and 2 - 3 m^2 in extent. The hibernaculum will be constructed under the supervision of a suitably qualified ecologist.

<u>Invertebrates</u>

5.20 The creation of wildflower areas, pond improvement works and refugia creation as described above are considered to be beneficial to a variety of invertebrates that may be present on Site. In addition to the above mitigation measures additional compensation measures that will be included within the Ecological Enhancement Area include ground nesting bee hotels, wildlife mounds and bee banks. Bee hotels can be produced by creating cylinders using stainless steel sheeting, this can then be rolled to form a cylinder and filled with coarse sand (British Wildlife, 2017). Wildlife mounds and bee banks can be created by excavating small trenches, filling with suitable materials (e.g. stone and woody debris) and covering with freely draining soils and nectar rich plants to form a low mound which will provide habitat for a range of invertebrates.

Enhancement measures

5.21 The National Planning Policy Framework (NPPF, March 2012), states that the planning system should contribute to "*minimising impacts on biodiversity and providing net gains in biodiversity where possible"*, contributing to the Government's commitment to halt the overall decline in biodiversity. It also states that *"opportunities to incorporate biodiversity in and around developments should be encouraged".*

5.22 As designs for the site develop, an ecologist can provide site specific advice on ways to enhance the wildlife value of the final development and contribute towards a net gain in biodiversity. Simple examples of enhancement measures which could be considered and designed into the proposals include (but are not limited to):

- Additional plantings within the new development would provide foraging habitat for bats, and therefore have the potential to increase the value of the site. Native, nectar rich plants that attract insects would be recommended as they would enhance foraging opportunities for bats in the local area (see Appendix G for suitable species);
- Provision of artificial or natural hedgehog boxes located in a quiet undisturbed area with ground covering vegetation, preferably against a bank, wall or fence. For example, three or four logs may be arranged to leave an appropriate sized hole for a hedgehog to nest in (big enough for the hedgehog and its nest) and covered with masses of twigs and leaves. Retaining wood piles attract invertebrates and fungi, providing a good local food source for hedgehogs and possible nesting sites (materials from site works could be used for this purpose).

Re-survey of the Site

5.23 If no works are undertaken on site within 12 months of this survey or if any changes to the proposals are made, a further ecological survey may be necessary (because of the mobility of animals and the potential for colonisation of the site).

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Appendix A – Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2010.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Species that are protected by European and national legislation			
Bats *European protected species*	Conservation of Habitats and Species Regulations 2010 Reg 41	Deliberately[1] capture, injure or kill a bat; Deliberate disturbance[2] of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. https://www.gov.uk/bats-protection-surveys-and-licences *European Protected Species: Mitigation Licensing- How to get a licence* (NE 2010) *Bat Mitigation Guidelines* (English Nature 2004) *Bat Workers Manual* (JNCC 2004) *BS8596:2015 Surveying for bats in trees and woodland* (BSI, 2015)
	Wildlife and Countryside Act 1981 (as amended)[4] S.9	Intentionally or recklessly[3] obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
Birds	Conservation of Habitats and Species (Amendment) Regulations 2012	N/A	Authorities are required to take steps to ensure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat. This includes activities in relation to town and country planning functions.
	Wildlife and Countryside Act 1981 (as amended)[4] S.1	Intentionally kill, injure or take any wild bird; Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; Intentionally take or destroy the nest or eggs of any wild bird. **Schedule 1 species** Special penalties are liable for these offences involving birds on Schedule 1 (e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover). Intentionally or recklessly[3] disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species.	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. https://www.gov.uk/wild-birds-protection-surveys-and-licences https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business
Great crested newt *European protected species*	Conservation of Habitats and Species Regulations 2010 Reg 41	• Deliberately[1] capture, injure or kill a great crested newt; • Deliberate disturbance[2] of a great crested newt; • Deliberately take or destroy its eggs; • Damage or destroy a breeding site or resting place used by a great crested newt.	Licences issued for development by NE. https://www.gov.uk/great-crested-newts-protection-surveys-and-licences *European Protected Species: Mitigation Licensing - How to get a licence* (NE 2010) *Great Crested Newt Mitigation Guidelines* (English Nature 2001)
	Wildlife and Countryside Act 1981 (as amended)[4] S.9	Intentionally or recklessly[3] obstruct access to any structure or place used for shelter or protection or disturb a great crested newt in such a place.	Licences issued for science (survey), education and conservation by NE.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Reptiles (species that are not European protected): **Adder** **Common lizard** **Grass snake** **Slow worm**	Wildlife and Countryside Act 1981 (as amended)[4] S.9(1) (part); S.9(5)	Intentionally kill or injure any common reptile species.	No licence is required in England. However an assessment for the potential of a site to support reptiles should be undertaken prior to any development works which have potential to affect these animals. https://www.gov.uk/reptiles-protection-surveys-and-licences
Other species			
Rabbits, foxes and other wild mammals **For BAP species and Species of Principal Importance, see below**	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits (Technical Information note TIN003, Rabbits- management options for preventing damage, July 2007) and foxes (which are also protected under the Wildlife and Countryside Act 1981 from live baits and decoys, see Species Information notes SIN003 (2011), *Urban foxes* and SIN004 (2011) *The red fox in rural areas* as well as other wild mammals. Lawful and humane pest control of these species is permitted.

[1]Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing

[2]Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.
Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2010 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance.

[3]The term 'reckless' is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk.

[4] The Wildlife and Countryside Act (1981) has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006 A full list of amendments can be found at http://jncc.defra.gov.uk/page-1377.

Habitats & Species	Legislation	Guidance
Species and Habitats of Principal Importance for the Conservation of Biodiversity	Natural Environment & Rural Communities Act 2006 S.40 (which superseded S.74 of the Countryside & Rights of Way Act 2000).	S.41 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretary of State in consultation with NE, are referred to in S.41 of the NERC Act for England. The list of habitats and species was updated in 2008: http://webarchive.nationalarchives.gov.uk/20140605090108/http:/www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx The habitats and species listed are not necessarily of higher biodiversity value, but they may be in decline. Habitat Action Plans and Species Action Plans are written for them or are in preparation, to guide their conservation. Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.
Cotoneaster	Wildlife and Countryside Act 1981 (as amended) S.14	It is illegal to plant these species or otherwise cause them to grow or spread in the wild. *Guidance on Section 14 of the Wildlife and Countryside Act, 1981* (Defra, 2010)

Appendix B – Bat Roost Potential and Habitat Suitability Categories

Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape (Collins, 2016).

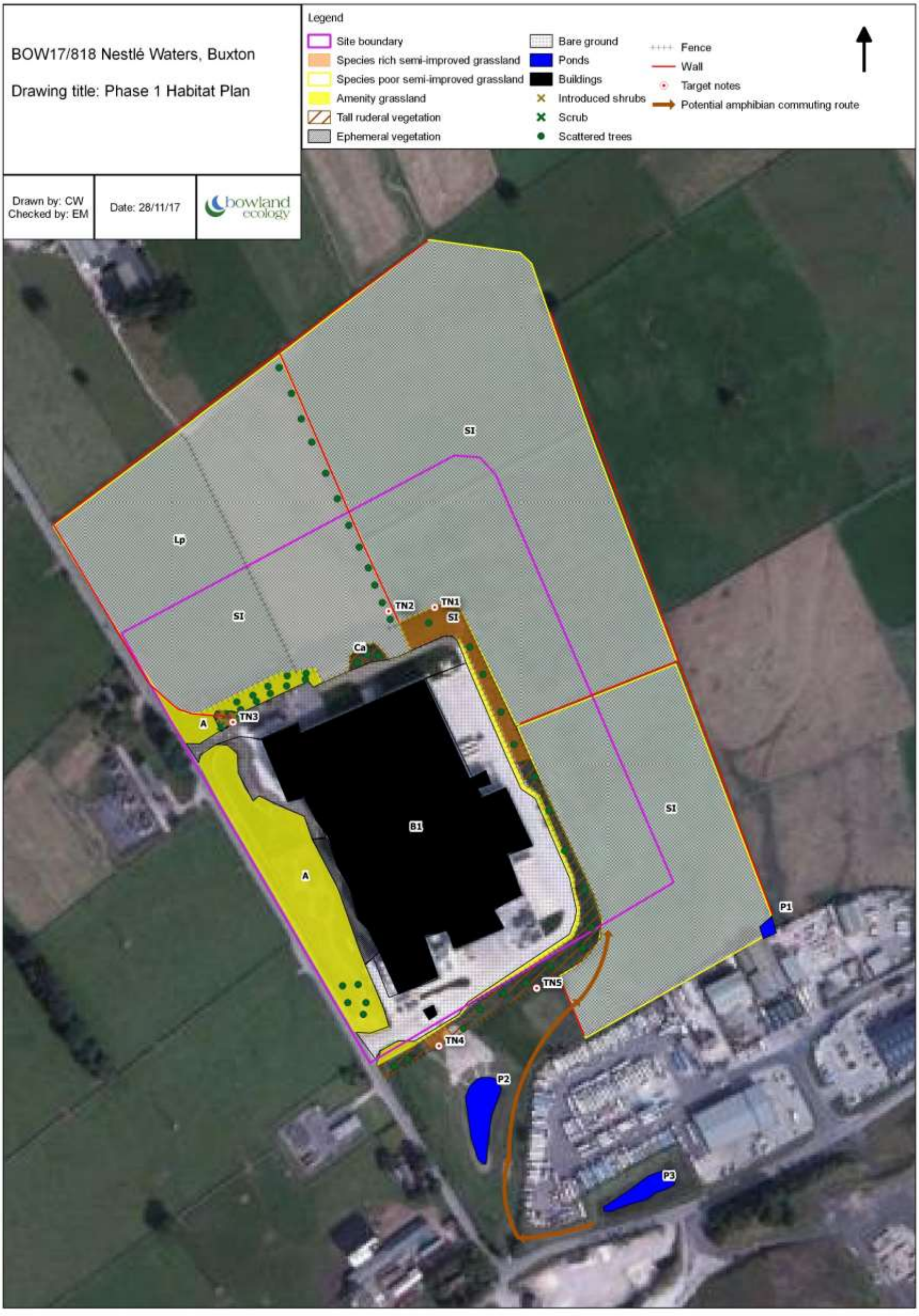
Suitability	Description of Roosting Habitat	Commuting & Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitats to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable maternity or hibernation). A tree of sufficient size and age to contain potential roosting features but with none seen from the ground, or feature seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status.	Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis, and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close and connected to known roosts.

Appendix C – Target notes

Target Note	Description	Photograph
1	Semi-improved grassland which forms part of the mitigation for the development of the original Nestlé Waters bottling plant located at the south-eastern corner of the survey area. Grasses present within the sward include Yorkshire fog (*Holcus lanatus*), tufted hair grass (*Deschampsia cespitosa*), perennial rye grass (*Lolium perenne*), Timothy (*Phleum pratense*), and crested dog's tail (*Cynosurus cristatus*). Herbs include red clover (*Trifolium pratense*), white clover (*T.repens*), yellow rattle (*Rhinanthus minor*), devil's bit scabious (*Succisa pratensis*), ribwort plantain (*Plantago lanceolata*), common knapweed (*Centaurea nigra*), oxeye daisy (*Leucanthemum vulgare*), selfheal (*Prunella vulgaris*), yarrow (*Achillea millefolium*), wild carrot (*Daucus carota*), meadow crane's-bill (*Geranium pratense*), meadow buttercup (*Ranunculus acris*), creeping buttercup (*R.repens*), marsh thistle (*Cirsium palustre*) and broadleaved dock (*Rumex obtusifolius*). The sward was found to be relatively long. As such the area provides habitat for reptiles and amphibians.	 
2	Scattered young sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*) and beech (*Fagus sylvatica*) are located outside the boundary of the fastory. The grassland beneath the trees is rank, unmanaged and species poor. The trees provide habitat for nesting birds and foraging and commuting bats.	
3	Small stand of cotoneaster (*Cotoneaster* sp.) and hydrangea (*Hydrangea* sp.) located over bare earth close to the entrance to the site. The area provides habitat for nesting birds.	
4	Small area of species rich semi-improved grassland to the south of the factory. Species present comprise bird's-foot trefoil, lady's bedstraw (*Galium verum*), common	

	knapweed, red fescue (*Festuca rubra*), ribwort plantain, tufted hair grass, Yorkshire fog, cock's-foot, yarrow, bush vetch (*Vicia sepium*), creeping buttercup and colt's-foot.	
5	Tall ruderal vegetation along the western edge of the Site. The area is approximately 9.5 m in width and fenced to prevent livestock from the adjacent fired entering the area. The sward is dominated by broad leaved dock, with occasional great willowherb (*Epilobium hirsutum*), colt's-foot, tufted hair grass and creeping thistle. Where the tall ruderal vegetation is are less dominant some scattered herbs including yarrow and creeping buttercup are present.	
B1	Building 1 is a large industrial building used for the bottling of water. The majority of the building (including walls and roof) comprises of flat, well-sealed metal sheeted panels. The exception to this is where stone gabion walls are present on the frontage to the building.	 

Appendix D – Phase 1 Habitat Plan



Appendix E – Information Sheet for Contractors on GCN

Legislation Covering Great Crested Newts

Great crested newts are protected by European and UK law, in practical terms this means it is an offence to;

- Deliberately capture, injure or kill a GCN
- Deliberately disturb a GCN
- Deliberately take or destroy GCN eggs
- Damage or destroy a breeding site or resting place used by a GCN

Penalties on conviction: the maximum fine is £5,000, up to six months in prison, per offence and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

Defences include:

1. Tending/caring for a GCN solely for the purpose of restoring it to health and subsequent release

2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

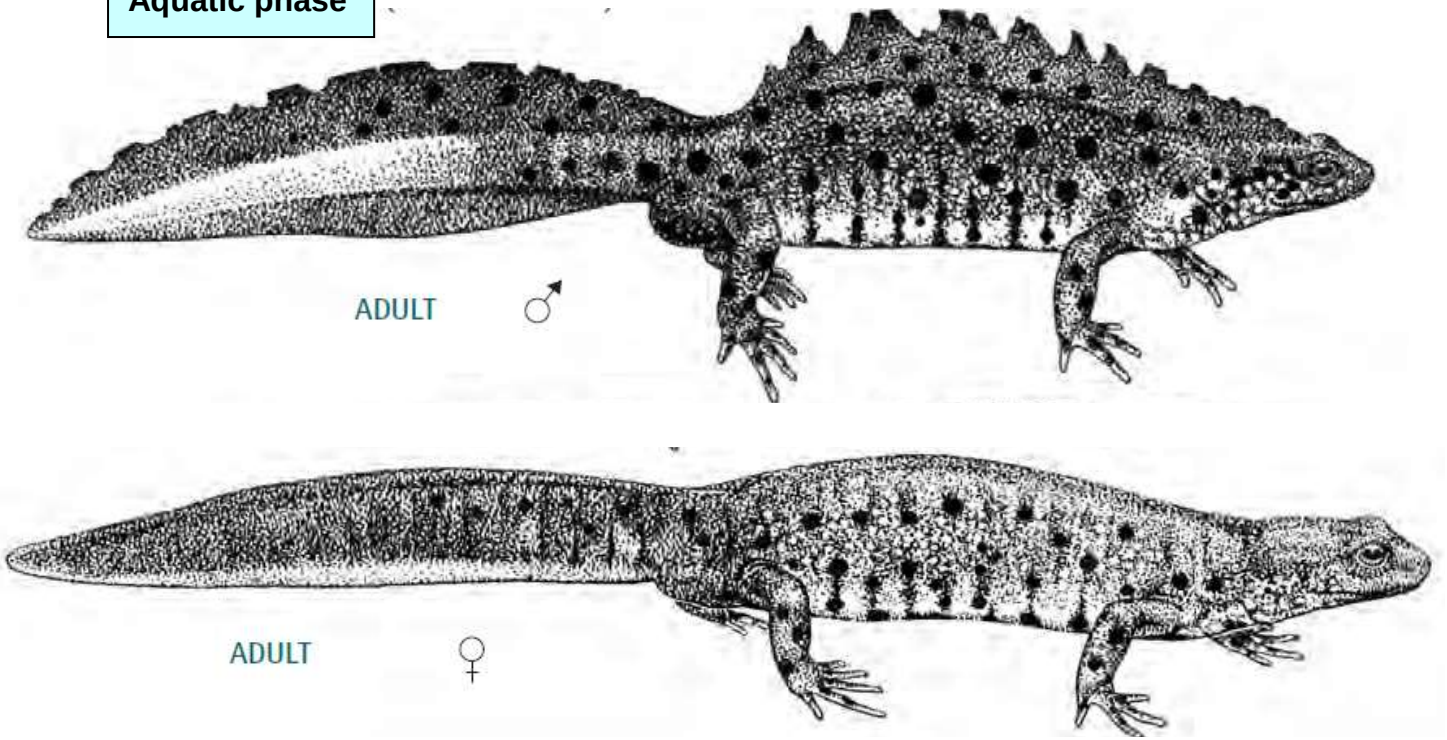
Terrestrial phase

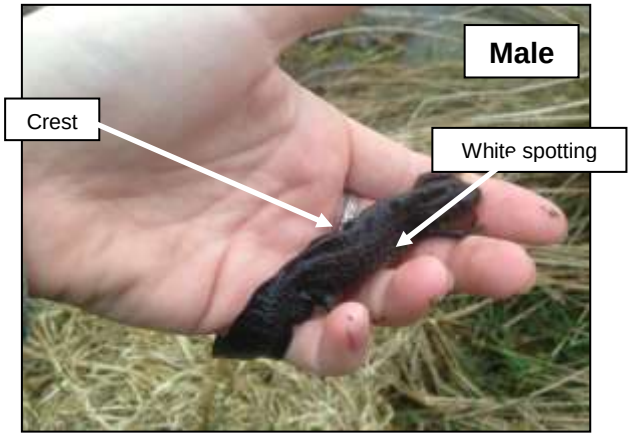
Orange belly with black spots

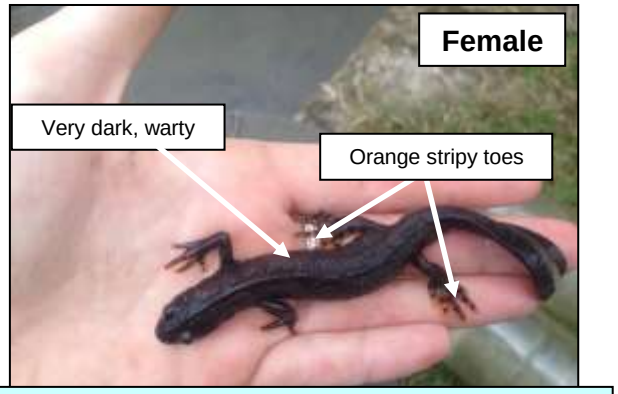
GCN spend most of their time on land, returning to ponds in the spring to breed. They can be found in:

- Ponds, including field ponds, garden ponds and ditches
- Rock/log piles
- Dry stone walls,
- Debris, such as pallets, sleepers etc.,
- Root systems of trees, scrub and hedgerows
- Rough/tussocky grassland

Aquatic phase







Procedure if GCN are found:

If you find a GCN or suspect GCN to be present you must **stop works immediately** and contact **the project manager**. Contractors should avoid handling GCN. If handling is essential to move GCN away from harm, dampened gloves must be worn or hands must be dampened.

If GCN is in imminent danger
Stop works **- - - - - >** put on dampened gloves/dampen hands **- - - - - >** place GCN in a box/safe place, ideally with some damp vegetation **- - - - - - ->** Call Bowland Ecology (Tel. 01200 446777) ***Always wash hands after handling due to GCN skin toxins***

GCN is not in immediate danger
Stop works - - - - - > Call Bowland Ecology (Tel. 01200 446777)

Appendix F – Information Sheet for Contractors on reptiles

There are six species of native reptile in the UK, with four species being widespread; slow worm, common lizard, adder and grass snake. Their identifying features are briefed below. Active from March to September-October, they hibernate during winter, often in brash piles, log piles etc.

Slow worm (*Anguis fragilis*)
Up to 50cm, leg-less lizard, shiny, golden brown to grey in colour

Common lizard (*Zootoca vivipara*)
Up to 15cm, generally brown but colour varies, scaly skin

Adder (*Vipera berus*)
Venomous – no not handle, Dark zig-zag down back, V or X on head, grey to brown in colour

Grass snake (*Natrix natrix*)
Approximately 1m, grey/green in colour, yellow collar, black bars on flanks

Legislation and responsibilities:

The four widespread reptiles shown overleaf are protected by law, under the Wildlife & Countryside Act (1981) as amended, S.9(1) (part); S9(5). It is an **offense** to intentionally kill or injure any widespread reptile species

Procedure if reptiles are found:

If you find a reptile, **stop works immediately** and use the identification guide overleaf.

All species except adder: carefully move reptile into a cardboard box (avoid warming the reptile in your hands if it is in torpor) → move to new hibernacula and place inside, away from the edges, where it may get too cold → inform Bowland Ecology (Tel: 01200 446 777) → keep record of all reptiles moved

If an adder is found → stop works → do not attempt to move or handle the adder → contact Bowland Ecology (Tel: 01200 446 777) for further instruction

Bowland Ecology (Tel. 01200 446777)

Appendix G – Suitable Native Species for Use in Planting Schemes

Tree and shrub planting mix									
		Location / Landscape Type			**Local Conditions**				
					Soil			**Hydrology**	
Scientific name	**Common name**	**County Wide**	**Upland & moorland above 75m**	**Lowlands Below 75m**	**Peat & Acid Soils**	**Neutral**	**Alkaline**	**Damp**	**Dry**
Alnus glutinosa	Alder		*	*	*	*		*	
Betula pendula	Silver Birch			*		*	*		*
Betula pubescens	Downy Birch		*	*	*	*	*	*	
Calluna vulgaris	Heather		*		*				*
Corylus avellana	Hazel		*	*		*	*		*
Crataegus monogyna	Hawthorn	*	*	*		*	*		*
Cytisus scoparius	Broom			*	*				*
Fraxinus excelsior	Ash			*		*	*		*
Ilex aquifolium	Holly	*	*	*		*			*
Ligustrum vulgare	Wild Privet			*		*	*		*
Lonicera periclymenum	Honeysuckle			*	*	*	*		*
Malus sylvestris	Crab Apple			*		*	*		*
Populus tremula	Aspen		*	*	*	*		*	
Prunus avium	Wild Cherry			*		*	*		*
Prunus padus	Bird Cherry		*			*			*
Prunus spinosa	Blackthorn			*		*	*		*
Quercus petraea	Sessile Oak		*		*				*
Quercus robur	Pedunculate Oak			*		*	*		*
Rosa arvensis	Field Rose			*		*	*		*
Rosa canina agg.	Dog Rose			*		*	*		*
Salix caprea	Goat Willow			*	*	*	*	*	
Salix cinerea	Grey Willow			*	*	*	*	*	
Salix fragilis	Crack Willow			*		*		*	

Tree and shrub planting mix									
		Location / Landscape Type			**Local Conditions**				
					Soil			**Hydrology**	
Scientific name	**Common name**	**County Wide**	**Upland & moorland above 75m**	**Lowlands Below 75m**	**Peat & Acid Soils**	**Neutral**	**Alkaline**	**Damp**	**Dry**
Salix repens	Creeping Willow				*	*	*	*	
Salix viminalis	Osier			*		*		*	
Sambucus nigra	Elder			*	*	*	*		*
Sorbus aucuparia	Rowan	*	*	*	*	*	*		*
Ulex europaeus	Gorse			*	*				*
Ulmus glabra	Wych Elm			*		*	*		*
Vaccinium myrtillus	Bilberry		*		*				*
Viburnum opulus	Guelder-rose			*		*		*	

Appendix H – Proposed Scheme Design and Landscaping Plan

Appendix I – Ecological Opportunities Plan